CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

4	17-05-2024	REISSUED FOR USE	A. RODRIGUEZ	S.FRENCH-BLUHM	J. GUYER
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1. INTRODUCTION

1.1 Project Details

Perdaman Chemicals and Fertilisers Pty Ltd (OWNER) are focused on the development of Project CERES, which shall be the world's largest gas stream ammonia-urea plant with a production capacity of 2.14 MMTPA. The plant is located within the Burrup Strategic Industrial Area, Burrup Peninsula, approximately 10 km from Dampier and 20 km north-west of Karratha on the Northwest coastline of Western Australia.

The development will utilize local natural gas for fertilizer production, using innovative and low emissions technologies and will be Australia's first urea export project.

The Project is broken into the following key areas:

- Ammonia Production Block
- Urea and Granulation Block
- Utility Block
- Third Party Supply (Port Facilities, Water Supply, and Service Corridor)

Saipem and Clough Joint Venture (CONTRACTOR), have been selected as the exclusive EPC contractor for the development of Perdaman Industries urea plant on the Burrup Peninsula.

2. GENERAL INFORMATION

2.1 Executive Summary

The Construction Environmental Management Plan (CEMP) illustrates the strategies, methods, organization, skills and work procedures that the CONTRACTOR intends to employ for successfully developing the Project CERES, delivering its works in an environmentally responsible manner and monitoring environmental performance requirements as per the relevant Australian legislative framework for the Project and other project specifications.

The CEMP also describes the Scope of Work, addresses all requirements related to overall environmental management, and establishes the strategies, methods, processes which will be adopted by the CONTRACTOR to provide certainties in delivering successful environmental management during the delivery of the CERES construction program.

In ensuring this document remains an effective tool for on-site implementation during the construction phase of the Project, the aspects addressed include:

- Allocating responsibilities to the CONTRACTOR personnel to ensure the documented controls are properly implemented, maintained and monitored.
- Identifying environmental hazards, risks and impacts of the Project.
- Defining details of environmental management and mitigation measures to be implemented.
- Outlining environmental monitoring and reporting requirements.
- Providing for compliance with relevant contractual, regulatory and legislative environmental requirements.

- Providing for environmental inductions and training so that all personnel engaged on the Project during construction, including contractors, are made aware of the requirements of this CEMP and associated documents.
- Setting out the process to assess, respond and report environmental incidents; and
- Outlining the mechanism for continual improvement through audit, review and corrective action.

This Construction Environmental Management Plan is the overarching Saipem Clough Joint Venture environmental management plan for the Project CERES Construction Phase. These works will be designed, planned and executed by the Saipem Clough Joint Venture (CONTRACTOR).

This Plan is supplementary to the Perdaman (OWNER) Project Environmental Plan (PCF-PD-EN-PEMP January 23, 2021). This Plan has been developed in compliance with the PEMP (2021) and does not replace the PEMP. This CEMP is supported by a series of environmental aspect construction specific Management Sub-Plans and Protocols. These aspects have been identified through the Environmental Impact Assessment phases, CONTRACTOR construction risk assessments and through the Environmental Approval process (under Part IV of the Environmental Protection Act 1986) for the Project.

An overview of the structure of this CEMP and associated issue specific construction management Sub-Plans and Protocols prepared by the CONTRACTOR to comply with the OWNER Environmental Plans, OWNER Management Protocols, licenses and approvals for the Project is illustrated in Figure 2-1. The OWNER has developed issue specific Environmental Management Plans as per the requirements within MS 1180. The CONTRACTOR Management Sub-Plans and Protocols that form part of this CEMP, are to be read in conjunction with the Confirmed OWNER Condition Plans (MS 1180).

The Construction Environmental Management Plan is prepared and maintained by the CONTRACTOR Environmental Team and is approved by the HSSE Manager. It is a “live” Plan and as such may be reviewed periodically and revised as needed.

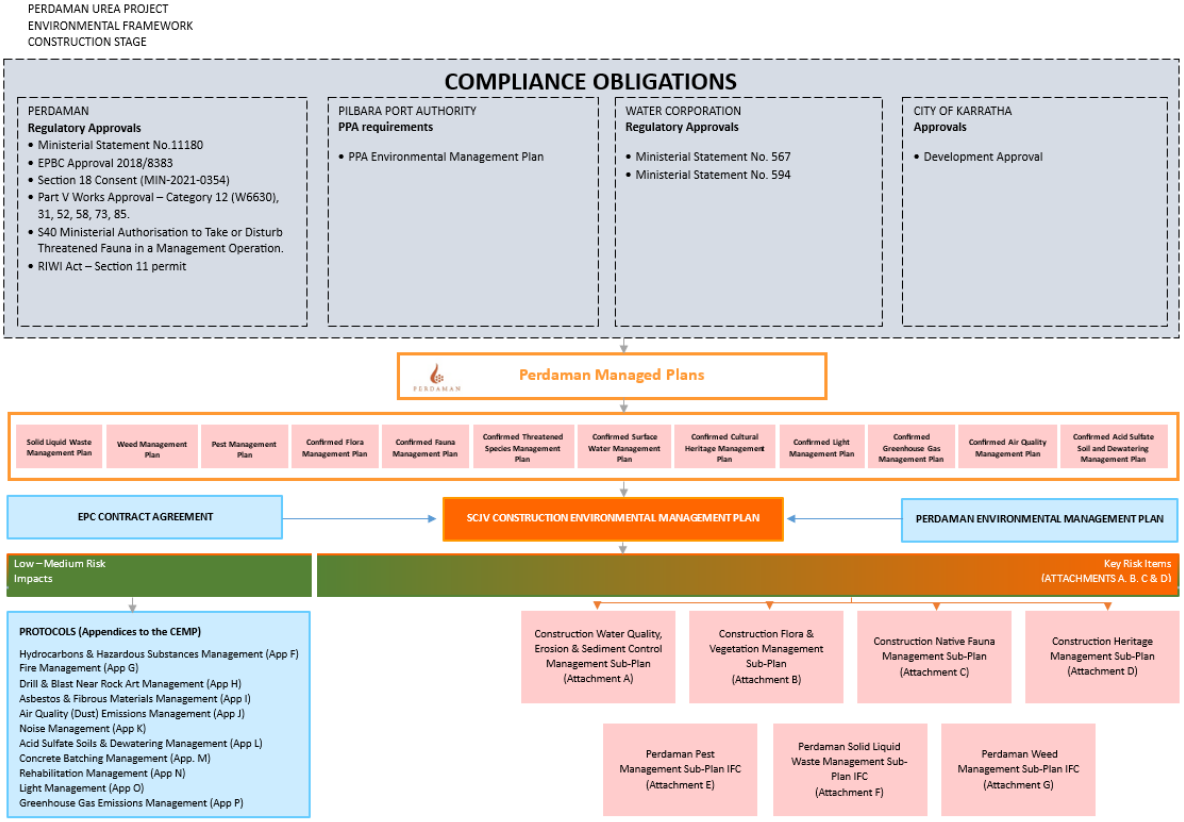

Figure 2-1 Project Environmental Framework

2.2 Plant overview

The OWNER is focused to develop a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.14 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

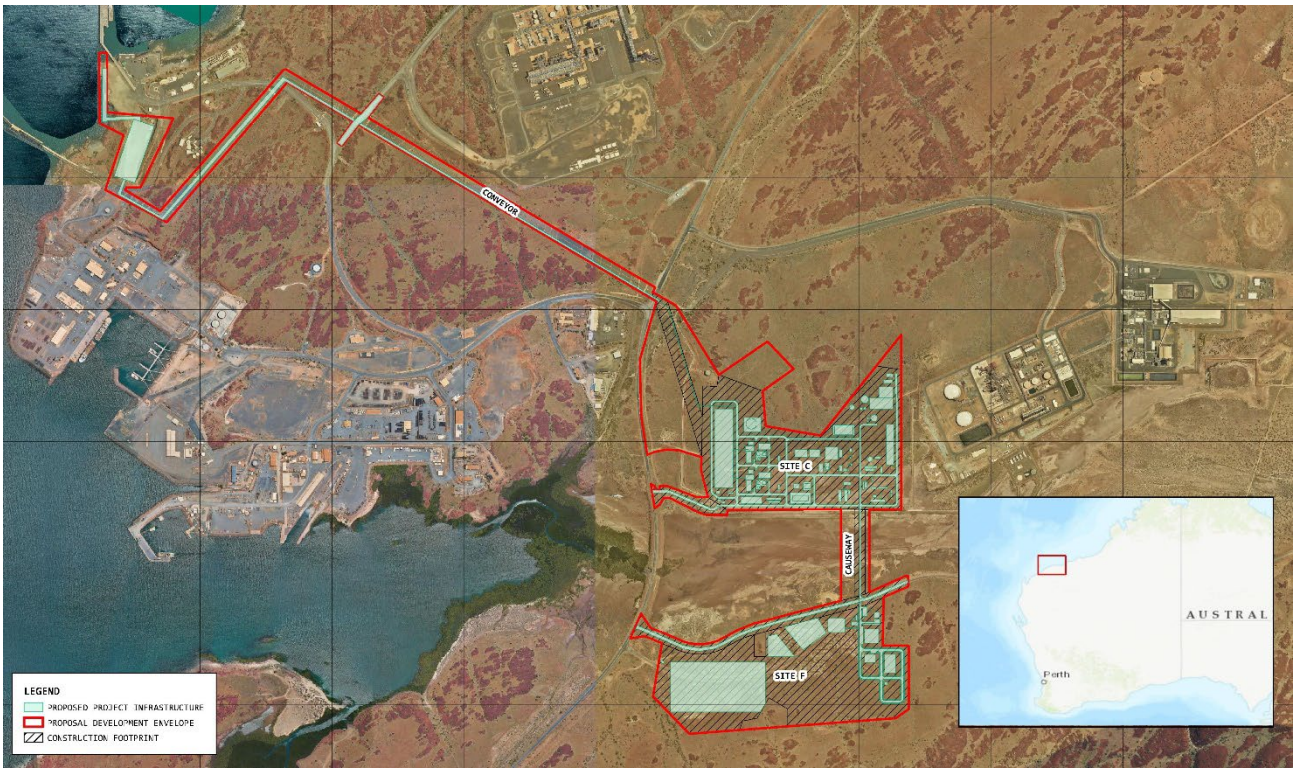

Figure 2-2 Location Map and project site areas

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (Figure 2-2) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not

impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

2.3 OWNER Information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as Project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

2.4 Project structure & strategy of execution

The CONTRACTOR is a Joint Venture (JV) composed of Saipem Australia PTY Ltd. (Saipem) and Clough Projects Australia PTY Ltd. (Clough).

Saipem and Clough will bring their collective strengths together in a fully integrated JV to successfully deliver this PROJECT. Saipem brings their internationally recognized Engineering and Procurement, Modularized fabrication and Construction expertise, while Clough will provide their extensive knowledge of the local market and expertise of delivering complex high-profile projects in Australia.

The JV is led by the CONTRACTOR Project Director (PD) from Saipem who acts as the CONTRACTOR Representative and a Deputy Project Director (DyPD) from Clough. JV brings with them the expertise in construction activities in Australia meeting all Western Australia standards. The CONTRACTOR leads all project activities with the support of all

departments and services as shown in the project organization chart under the authority of the JV Steering Committee to whom they report.

The JV steering committee deputes Senior Managers from each COMPANY who meet on regular basis to monitor the project.

2.5 Project mission statement by CONTRACTOR

To deliver Project CERES of highest quality by deploying adequate controls consistently throughout the project life cycle, thereby ensuring the requirements of all Stake holders are achieved with perfection & aligned to the Contract. Commitments by the CONTRACTOR are,

- **HSSE**: Incident Free, No harm to People & Properties and Protection of the Environment.
- **Quality:** Execution and Delivery of Project Works in accordance with the Contract and Project Specification Requirement.
- **Schedule:** Obtaining Mechanical Completion and Commissioning of Plant in accordance with agreed schedule and achieving milestones based on Contract Requirement.
- **Budget**: Maintaining Project Costs within the Budget.
- **Communication:** Ensure timely pro between the stake holders thereby facilitating a clear vision on the project metrics and quick decision making.
- **Result oriented approach:** Consistent focus throughout the project life cycle by deploying efficient work process & methods thereby achieving the project objectives and milestones.
- **Energy Conservation:** Strive to promote Energy efficiency methods, reduce Consumption and emissions wherever practicable.

2.6 One Team Approach

The CONTRACTOR will adopt “One Team One Goal” approach and work together with the OWNER to achieve the true integration value within the task force. The overarching objective is to create one team among the task force and effectively deal with any challenges that may arise during execution with unified mind set.

- By establishing and developing one team approach for the successful completion where all the team members are aligned, shares a common purpose, and equipped with an understanding of the importance of adhering collaborative behaviours.
- One team approach brings together the right people from different and varied discipline to resolve the issue. Team needs to share common value. The team focus on the outcomes rather than the process.
- Quick and effective decision making can help to become more productive, save the time and effective utilization of resources.
- Integration of the OWNER Team into the CONTRACTOR Project Organization is essential to ensure daily communication and reviews, minimizing the documents approval period and simplifying the clarifications interfaces.

The CONTRACTOR will execute the entire project works with complete team of experienced personnel lead by the Project Directorate.

To implement One Team approach, the CONTRACTOR team shall operate from the Chennai operating centre with support of PERTH and MILAN operating centre along with the OWNER Management Team during the Engineering & Procurement phase and finally move to project site location during construction phase. This shall facilitate an integrated team approach that promotes timely and effective decision making, standardized work processes and smooth flow of documents to derive overall benefit for the PROJECT execution.

In addition, team building workshops will be organised with all stakeholders and project team members (multinational and multidiscipline) at initial phase to encourage smooth communication and engagement.

2.7 Scope of this Document

This CEMP provides guidance to the construction personnel on the minimum environmental requirements of the Project and applies to all project work sites within the Project Development Envelope (PDE) as shown in the Project Location Map in Figure 2-2.

This document incorporates current environmental approval Conditions (MS 1180) and the OWNER commitments made during the environmental approvals process, as well as industry best practice. The requirements within this CEMP are aligned with the International Standard for Environmental Management Systems ISO14001:2015.

Included in this document are directions to the construction team outlining the requirements for identifying obligations, planning, auditing, monitoring, reviewing, reporting and managing environmental performance during the construction phase.

This Plan does not supersede the OWNER PEMP, rather it is supporting to the PEMP. It provides the specific details above that are applicable to the CONTRACTOR and in addition, provides the CONTRACTOR internal procedures and strategies to achieve the OWNER Project obligations and requirements, regulatory obligations and internal company requirements (Saipem and Clough).

In addition to this CEMP, the CONTRACTOR has prepared construction-based Management Protocols and management sub-plans for environmental issues relevant to the OWNER program. These Protocols and Sub-Plans will demonstrate compliance with the Perdaman Confirmed Environmental Management Plans, Perdaman Management Plans as well as the OWNER Management Protocols (PEMP). These Protocols will be specific to the CONTRACTOR construction works on the Project and will support this CEMP (see Figure 2-1). They provide the construction team with management controls and monitoring specific to the construction activities being carried out. This plan must be read and implemented in conjunction with the supporting OWNER Environmental Management Plan.

This document will be updated on a periodic basis as new approvals and conditions are received and compliance requirements are determined. This Plan will be reviewed and updated based on OWNER feedback and / or following consultation with the Murujuga Aboriginal Corporation (MAC).

The Management Protocols can be reviewed and updated separately from this CEMP. Refer to Section 19 of this Plan, Appendices F to P, and Attachments A to H.

The scope of this CEMP does not include the construction of port facilities, including the jetty and infill of the coastal area for the provision of a wharf. These works will be managed and carried out by the Pilbara Port Authority (PPA) under a separate licensing and approvals process from that part of the Project. This CEMP has been prepared in accordance with the PPA Environmental Management Plan and associated requirements to ensure any CONTRACTOR works being carried out at the Port are managed appropriately (i.e., conveyor into Port area, ship loader, storage shed).

2.8 ABBREVATIONS

BEDD	Basic Engineering Design Data
BIA	Biologically Important Area
BMIEA	Burrup Maitland Industrial Estates Agreement
BOD	Basis of Design
BSIA	Burrup Strategic Industrial Area
CAP	Compliance Assessment Plan
CEMP	Construction Environmental Management Plan
CEMS	Contractors Environmental Management System
CFC	Chlorofluorocarbons
CMS	Clough Management System
CNVMP	Construction Noise and Vibration Management Plan
CoK	City of Karratha
Cth	Commonwealth
CMP	Change Management Plan
CMS	Completion Management System
Commencement Date	Date on which OWNER issues Full Notice to Proceed to CONTRACTOR
DAWE	Department of Agriculture, Water and Environment (now DCCEEW)
DCCEEW	Department of Climate Change, Energy, the Environment & Water
DBARAMP	Drill and Blast Activities Near Rock Art Management Protocol
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DG	Dangerous Goods
DMIRS	Department of Mines, Industry Regulation and Safety
DOE	Department of the Environment (now DCCEEW)
DOEE	Department of Environment and Energy (now DCCEEW)

DOH	Department of Health
DPLH	Department of Planning, Lands and Heritage
DRMP	Demobilisation and Rehabilitation Management Protocol
DWER	Department of Water and Environmental Regulation
EIA	Environmental Impact Assessment
ERD	Environmental Review Document
ERMP	Emergency Response Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPRMP	Emergency Preparedness and Response Management Plan
ESC	Erosion and Sediment Controls
ESCP	Erosion and Sediment Pollution Control Plan
FaMP	Fauna Management Plan
FMP	Flora Management Plan
GDP	Ground Disturbance Permit
GHG	Greenhouse Gas
GHGMP	Greenhouse Gas Management Plan
HAZCHEM	Hazardous Chemicals
HAZID	Hazard Identification
HazMat	Hazardous Material
HAZOP	Hazard and Operability Study
HDPE	High Density Polyethylene
HHSMP	Hydrocarbons and Hazardous Substances Management Protocol
HSEQ	Health, Safety, Environment & Quality
HSSE	Health Safety, Security and Environment
IBC	International Bulk Containers
JHA	Job Hazard Analysis
JTSI	Department of Jobs, Tourism, Science and Innovation
KPI	Key Performance Indicator
LGA	Local Government Authority
LMP	Light Management Plan
LPI	Loss Prevention Inspection
MAC	Murujuga Aboriginal Corporation
MAE	Major Accident Event
MAP	Major Accident Prevention
mBGL	Meters Below Ground Level
MUBRL	Multi-User Brine Release Line
Mtpa	Million tonnes per annum
MTS	Material Tracking System

MNES	Matters of National Environmental Significance
NATA	National Association of Testing Authorities
NFMP	Native Fauna Management Protocol
NG	Natural gas
NHP	National Heritage Listed Place
NMP	Noise Management Protocol
NTP	Notice to Proceed
OEMP	Operations Environmental Management Plan
PAC	Performance acceptance Certificate
PASS	Potential Acid Sulfate Soils
PC	Practical Completion
PEC	Priority Ecological Community
PEMP	Project Environmental Management Plan
PMIS	Project management information system
PMP	Pest Management Plan
PPA	Pilbara Ports Authority
Project	Project CERES
QA/QC	Quality Assurance and Quality Control
SIA	Strategic Industrial Area
SDS	Safety Data Sheet
SLT	Sustainability Leadership Team
SLWMP	Solid and Liquid Waste Management Plan
SMP	Safety Management Plan
SoW	Scope of Works
Sub-CONTRACTOR	Companies nominated to providing services to CONTRACTOR
SWMP	Surface Water Management Plan
SWMS	Safe Work Method Statement
TBC	To be Confirmed
TBD	To be Developed
TDS	Total Dissolved Salts
TEC	Threatened Ecological Community
TPH	Total Petroleum Hydrocarbons
TSMP	Threatened Species Management Plan
WeMP	Weed Management Protocol
WMP	Weed Management Plan

2.9 Definitions

PROJECT	PROJECT CERES (Plant to be supplied, erected and commissioned by the CONTRACTOR under the CONTRACT).
OWNER	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
CONTRACT	Contract agreement entered between the OWNER and the CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
CONFIRMED MANAGEMENT PLAN	A Plan that is required under the MS 1180 or EPBC 2018/8383. The Confirmed Plans are the OWNER managed Plans. It is the CONTRACTOR responsibility to implement actions relative to construction only. Triggers and thresholds from a confirmed plan, must also be applied by the CONTRACTOR during construction. Monitoring within these plans that is to be carried out during construction may also be the CONTRACTOR responsibility where it is indicated. These Plans are approved by state and federal regulators, and Ground Disturbance is not permitted without these Plans being approved by the CEO of DWER.
ENVIRONMENTAL PROTOCOL	An Environmental Protocol is a management strategy that contains mitigation measures and controls from the OWNER, CONTRACTOR and Pilbara Port Authority. Protocols help guide the construction team with construction works by providing minimum environmental requirements or commitments that must be applied during construction.
GROUND DISTURBING ACTIVITIES	Any activity where the ground is disturbed including clearing, excavations, trenching, earthmoving etc.
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
OWNER ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes the OWNER's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR, or their delegated representative.

ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is the OWNER's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe Port and the Port storage and loading infrastructure. It can also include any other Project relevant location under operational control of the OWNER.
WEED	A weed is a plant that is regarded as not endemic and considered undesirable in a particular location or region.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
MAY	Indicates that the Subcontractor is permitted to do something, or the Contractor reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NOTIFIABLE INCIDENT	Any incident that occurs during construction activities that initiates an exceedance or non-conformance with a condition within the MS 1180 or EPBC 2018/8383 or a non-achievement of an objective or outcome within the MS 1180 or an exceedance of threshold criteria stated within a Confirmed Management Plan, or a non-achievement of a management action or management target stated within the Confirmed Cultural Heritage Management Plan. A notifiable incident must be reported to the OWNER Environmental & Heritage Manager within 24 hours, to ensure regulatory reporting can take place in accordance with the MS 1180 and EPBC Approvals.
SENSITIVE RECEPTORS	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or contractor engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of

	the CONTRACTOR during construction (i.e., Dewatering Sub-Contractor, Clearing Sub-Contractor etc).
WILL	Indicates a requirement or action that the OWNER or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
SUB-PLAN	A Sub-Plan is a stand-alone plan, that forms attachment to the CEMP that has been developed by the CONTRACTOR to help the construction team and the environmental team to execute their environmental responsibilities, management and monitoring during the construction program in accordance with the environmental approvals and the Confirmed Management Plans.

2.10 Key Execution Plans & Procedures

Following are the list of key execution plan documents serving as a guideline for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Appendix F – Hydrocarbons & Hazardous Substances Management Protocol
0000-ZA-E-09071	Appendix G – Fire Management Protocol
0000-ZA-E-09071	Appendix H – Drill & Blast Near Rock Art Management Protocol
0000-ZA-E-09071	Appendix I – Asbestos & Fibrous Materials Management Protocol
0000-ZA-E-09071	Appendix J – Air Quality Management Protocol
0000-ZA-E-09071	Appendix K – Noise Management Protocol
0000-ZA-E-09071	Appendix L – Acid Sulfate Soils Management Protocol
0000-ZA-E-09071	Appendix M – Concrete Batching Management Protocol
0000-ZA-E-09071	Appendix N – Rehabilitation Management Protocol
0000-ZA-E-09071	Appendix O – Light Management Protocol
0000-ZA-E-09071	Appendix P – Greenhouse Gas Emissions Management Protocol
0000-ZA-E-09733	Attachment A – Water Quality & Erosion Sediment Control Management Sub-Plan
0000-ZA-E-09734	Attachment B – Flora & Vegetation Management Sub-Plan
0000-ZA-E-09735	Attachment C – Native Fauna Management Sub-Plan
0000-ZA-E-09736	Attachment D – Heritage Management Sub-Plan
0000-ZA-E-09737	Attachment E – Pest Management Sub-Plan
0000-ZA-E-09738	Attachment F – Solid & Liquid Waste Management Sub-Plan
0000-ZA-E-09739	Attachment G – Weed Management Sub-Plan

PCF-PD-EN-CHMP	Confirmed Cultural Heritage Management Plan
PCF-PD-EN-FaMP	Confirmed Fauna Management Plan
PCF-PD-EN-FMP	Confirmed Flora Management Plan
PCF-PD-EN-GHGMP	Confirmed Greenhouse Gas Emissions Management Plan
PCF-PD-EN-LMP	Confirmed Light Management Plan
PCF-PD-EN-SWMP	Confirmed Surface Water Management Plan
PCF-PD-EN-TSMP	Confirmed Threatened Species Management Plan
PCF-PD-EN-PMP	OWNER Pest Management Plan
PCF-PD-EN-SLWMP	OWNER Solid & Liquid Waste Management Plan
PCF-PD-EN-WMP	OWNER Weed Management Plan

2.11 Scope Of The Project

The OWNER engaged the CONTRACTOR to perform the Works, which includes the design, engineering, procurement and supply of equipment, construction and commissioning of the urea fertilizer plant and related facilities, including a water treatment plant, a power plant and urea storage, loading and unloading facilities.

The CONTRACTOR shall carry out the complete COMPANY Scope of Work which will deliver a Production Facility capable of producing 6,200 TPD of granulated Urea Fertilizer including the following key components:

- Area 1100 Reforming
- Area 1200 CO shift
- Area 1300 CO2 removal section
- Area 2500 Ammonia synthesis
- Areas 2600 & 2700 Urea Train 1 & Train 2
- Area 3100 Plant & instrument air
- Area 3300 Steam & condensate
- Area 3500 Air Compression, Air Separation Unit
- Area 3600 Power generation
- Area 3700 Water treatment
- Area 3900 Other utilities
- Area 4100 Urea Handling
- Area 4200 Urea product handling, storage and ship-loading
- Area 4200 Diesel Storage
- Area 4300 OSBL Pipe racks
- Area 4400 Buildings
- Area 4500 Temporary Telecommunication
- Area 4600 Permanent Telecommunications

A **simplified block diagram** of the Urea production is depicted below,

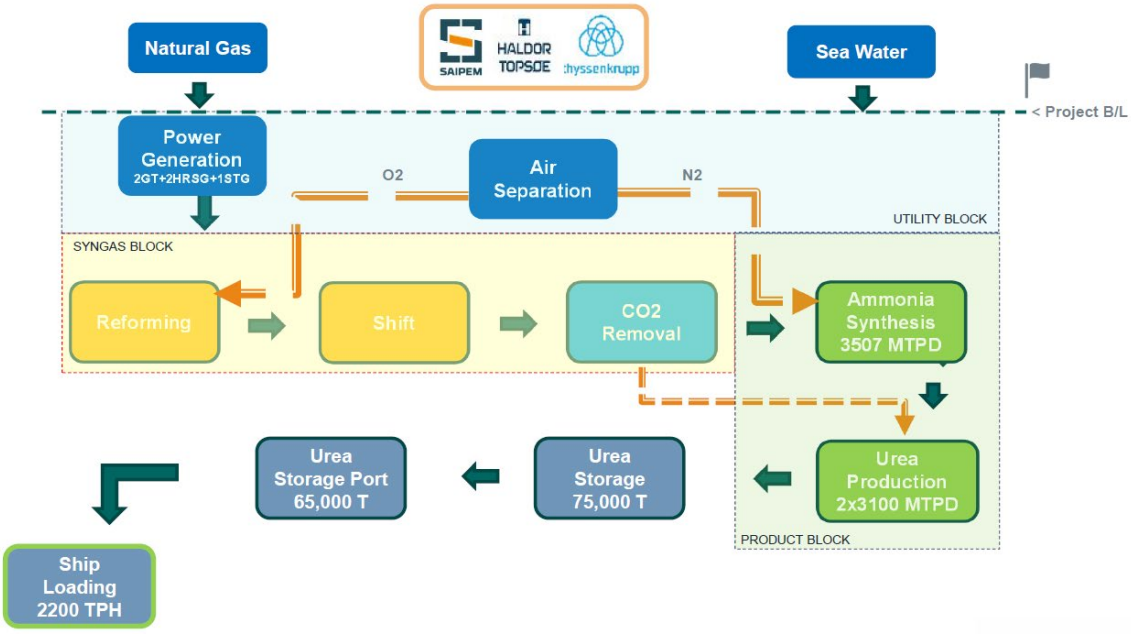

Figure 3 Block Diagram of Urea Production

Indicative plan/arrangement of various units in Site F and Site C are depicted below,

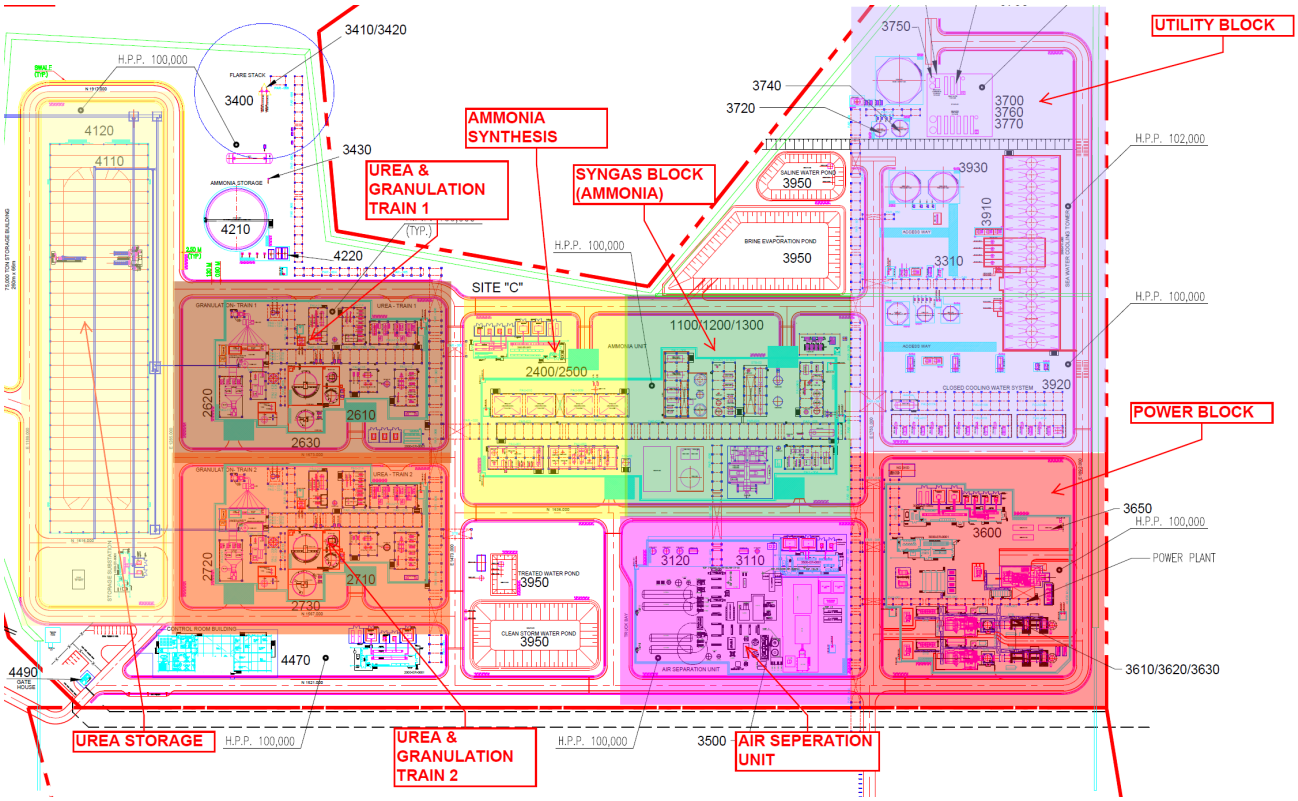

Figure 4 Indicative plan Site F and Site C

2.12 Contractor Scope Of Work

The scope of works and the technical design parameters that the CONTRACTOR are responsible for are detailed in the document 'Basis of Design' (140436-0000-49EA-0001) and as per the contract documentation. The CONTRACTOR and the OWNER have detailed the scope of works and timing of such within the Project Execution Plan.

The CONTRACTOR has been engaged to perform the Works, which includes the design, engineering, procurement and supply of equipment, construction and commissioning of the urea fertilizer plant and related facilities, including a water treatment plant, a power plant and urea storage, loading and unloading facilities.

The port infrastructure (i.e. Wharf Provisions) will be constructed and managed by Pilbara Ports Authority (PPA), and the CONTRACTOR will construct the storage and ship loading infrastructure on PPA managed land.

Site C

Site C is relatively undeveloped with the only visible disturbance being a few access tracks.

The site is situated adjacent to the Yara Pilbara Fertilisers ammonia plant to its east, to the north are steep rocky outcrops and to the south the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant and a 75,000-tonne urea storage shed.

Site F

Site F is situated to the south of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area (now rehabilitated).
Drainage from this area flows primarily north into the saline coastal flat.

This area will be used as laydown for equipment and modules, and for shutdown / maintenance activities. The east portion of Site F will be developed to include the Project's administration, maintenance, storage and warehousing facilities.

Causeway

The causeway, which links Sites C and F, extends across the saline coastal flat.

The causeway will be built up above the flat and will include several hydrological and fauna friendly culverts to ensure the structure does not impede natural drainage, tidal action or the movement of wildlife.

Conveyor

The 3.5km conveyor will transport urea from the storage shed at Site C to the Port loading shed.

From Site C the conveyor will be constructed on relatively undisturbed land, to the west of the existing Water Corp pipeline corridor. It will extend north, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor which already includes the Yara Pilbara Fertilisers ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities.

The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

Port Area

The Port Area includes a storage shed, covered conveyor and ship loader. The storage shed will be located within an existing highly disturbed quarry and the ship loader on a wharf which will be constructed by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and existing quarry, and a small section of rocky ground between these two areas.

2.13 Key Stakeholders And Consultation

This Project has several key interested parties and stakeholders and as a result has had and continues to have a comprehensive consultation process stretching over several years.

The key stakeholders have been presented in Table 2-1.

Table 2-1 Key Stakeholders during Project Construction

Indigenous Groups	
Murujuga Aboriginal Corporation (MAC)	Ngarluma Yinjibarndi Foundation Limited (NYFL)
Signatories of the BMIEA being represented by MAC	Registered Native Title claimants of the Yaburara Mardudhunera Native Title claim (No. WAG 127/97) being represented by MAC
Registered Native Title claimants of the Ngarluma Yindjibarndi Native Title claim (No. WAG 6017/96) being represented by Ngarluma Aboriginal Corporation (NAC)	Registered Native Title claimants of the Wong-Goo-Tt-Oo Native Title claim (No. WAG 6256/98) being represented by MAC
WA Government	
Conservation Commission	Department of Planning, Lands and Heritage
Department of Biodiversity, Conservation and Attractions	Department of Mines, Industry Regulation and Safety
Department of Jobs, Tourism, Science and Innovation	Department of Water and Environmental Regulation
Horizon Power	Main Roads Western Australia
Development WA (formerly LandCorp)	Pilbara Development Commission
Pilbara Ports Authority	Water Corporation
Local Government	
City of Karratha	
Commonwealth Government	
Commonwealth Department of Climate Change, Energy, the Environment & Water	
Community & Environmental Non-Government Organisation	
Conservation Council of WA	DBNGP (WA) Nominees Pty Ltd
Friends of Australian Rock Art (FARA)	Hon Robin Chapple MLC – 3rd party referrer under s.38 of EP Act

Hon Kevin Michel MLA	Hon Melissa Price MP
Karratha Chamber of Commerce	Quadrant Energy Australia Ltd
Rio Tinto	Telstra Corporation Ltd
University of Western Australia Centre for Rock Art Research	Western Australian Museum
Westfarmers Chemicals, Energy & Fertilisers Limited	Woodside Energy
Yara Pilbara Fertilisers Pty Ltd	Yara Pilbara Nitrates Pty Ltd

Continual consultation with these parties and in particular MAC is essential throughout the construction process. The CONTRACTOR are committed to supporting the OWNER with consultation with MAC and other stakeholders throughout the construction activities.

A comprehensive consultation register is presented within the Environmental Review Document (Cardno, 2020), Table 3-2 'Stakeholder Consultation Register'.

3. GOVERNANCE

3.1 Project Approvals Overview

The Project team and subsequent activities must comply with the relevant environmental conditions outlined in the Project specific approvals that have been and will be granted in the future.

Below includes indicative licenses and approvals potentially required for the Project. Some of these licenses and permits have been applied for by the CONTRACTOR and the OWNER already, others will be applied for prior to construction commencing. This table provided is a guide only and was accurate at the time of preparing this CEMP.

This list is subject to change throughout the construction stages and will be updated accordingly.

Table 3-1 Project Statutory Approvals & Agreements

Approval/Agreement	Purpose	Agency / Jurisdiction	Approval Number
EP Act 1986 – Part IV Approval – Ministerial Statement	EPA assessment of strategic proposal.	EPA	MS 1180
Environmental Protection and Biodiversity Conservation Act 1999 – s.87 accreditation provisions	Meeting Commonwealth requirements for controlled actions	DCCEEW	EPBC 2018/8383

Approval/Agreement	Purpose	Agency / Jurisdiction	Approval Number
EP Act 1986 – Part V – Works Approval & Licence – Cat 12. Screening plant	For establishment and operation of screening plant.	DWER	W6630 (Works Approval) L9426 (Licence Application)
EP Act 1986 – Part V – Works Approval & Licence – Cat 31. Chemical manufacturing.	Chemical manufacturing (Operations).	DWER	
EP Act 1986 – Part V – Works Approval & Licence – Cat 52. Power generation	For construction and operation of electric power generation using fuel.	DWER	
EP Act 1986 – Part V – Works Approval & Licence – Cat 73. Chemical storage	For construction and operation of bulk storage of chemicals.	DWER	
EP Act 1986 – Part V – Works Approval & Licence – Cat. 85 Sewage facility	For construction and operation of sewage facility with discharge to land or waters.	DWER	
EP Act 1986 – Part V – Works Approval & Licence – Cat 58. Material loading.	For construction and operation of bulk material loading onto vessels by material loading system.	DWER	
Rights in Water and Irrigation Act – Section 11 permit to Interfere with Bed and Banks	For construction of causeway	DWER	
Department of Health – Apparatus for treatment of sewage – installation and permit to use	Needed to install and operate sewage system.	City of Karratha and Department of Health	
Approval – Working near Water Corp assets	Approval required to work near or over the Water Corp seawater delivery line and Multiuser Brine Release Line (MUBRL).	Water Corp	
Approval / Agreement – working near gas pipeline.	Permission required to work near or over the Burrup Fertiliser Lateral Pipeline (BFL pipeline) runs on south side of Site C to Yara Fertilisers.	Santos	
Dangerous Goods Safety Act 2004 – Dangerous	Storage of fuel during the construction phase.	DMIRS	

Approval/Agreement	Purpose	Agency / Jurisdiction	Approval Number
Goods Site Licence (Construction)			
Dangerous Goods Safety Act 2004 – Major Hazard Facility License (Class A)	Storage of dangerous goods over threshold quantities during the operational phase.	DMIRS	
WA Occupational Safety and Health Regulations 1996 – Design Verification and Independent Fabrication Certificates	Obtain Independent Design Verification Certificates and Independent Fabrication Certificates for pressure equipment.	DMIRS	
WA Occupational Health and Safety at Work Regulations 1996 – Design Registration of Plant	Obtain Design Registration of Plant.	DMIRS	
WA Occupational Health and Safety at Work Regulations 1996 – Registration of Plant	Obtain Registration of Plant.	DMIRS	
Land Administration Act 1997 – s91 Licenses	For any works on Crown Land.	DPLH	
Land Administration Act 1997 – s79 Lease	Lease for all site locations under Crown.	DPLH	
Local Government Act 1995 – Building Licence	Building approval for Port storage shed, loading facility, infrastructure on sites C&F and causeway, and conveyor.	City of Karratha	
Mining Act 1978 – Mining proposals and letters of Intent – Overland conveyor / ship loader	Construction of overland conveyor / ship loader.	DMIRS	
Biodiversity Conservation Act 2016 – Take or Disturb Threatened Fauna	Fauna disturbance via clearing activities.	DBCA	
Aboriginal Heritage Act 1972 – Heritage Approvals – s18.	Disturbance of Aboriginal heritage sites in National Heritage Listed areas. Conveyor route running through NHL before reaching Burrup East West Services Corridor (EWSC).	DPLH	MIN-2021-0354
Approval for works “impacting on” the	Obtain approval to work in the area where the	Australian Gas Infrastructure	

Approval/Agreement	Purpose	Agency / Jurisdiction	Approval Number
Bunbury Extension Pipeline (BEP).	conveyor will cross over the BEP.	Group	
Dampier to Bunbury Pipeline Act 1998 – s41. Minister's approval	To carry out activities or works within the DBNGP corridor.	DPLH	
Biodiversity Conservation Act 2016 – Authorisation to Take and Disturb Threatened Fauna – s40	To take threatened fauna in a management operation to facilitate the construction and operation of a urea production plant and associated activities	DBCA	TFA 2223-0317
Biodiversity Conservation Regulations 2018 – Licence to Take Fauna (Relocation) – R28	Take and disturb fauna using hand capture techniques (Hook & Bag) as part of the Plant construction (approved under Ministerial Statement 1180) including the establishment of a boundary fence, trenches, clearing and grubbing and the construction of roadways. Relocate (transport and release) captured fauna will be released as soon as possible after capture into nearby suitable habitat outside of the construction envelope.	DBCA	FR28000358

3.2 Project Environmental Development Approvals

The OWNER has sought development approvals for the Project CERES under both State and Commonwealth legislative frameworks. The main legislative Acts that relate to this Project and provide the overall framework for environmental management for the Project are as follows:

- *Environment Protection and Biodiversity Conservation Act, 1999 – Commonwealth*
- *Environmental Protection Act 1986 – State*
- *Aboriginal Heritage Act 1972 – State*

Project CERES was referred to the Environmental Protection Authority (EPA) under the Environmental Protection Act 1986 in accordance with Section 38 Part IV. Pursuant to section 45 of the EP Act, it has been agreed that the Proposal may be implemented under the Conditions of Ministerial Statement 1180, as of the 24th of January 2022.

The Project was also referred to the then Commonwealth Department of the Environment and Energy (DOEE), now the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) on the 21st of December 2018 (Reference: 2018/8383) through the s.87 accreditation provisions. The EPBC referral was available for public comment for 10 business days closing on 4th February 2019. The Commonwealth DoEE determined on 28th March 2019 that the Proposed Action was a "Controlled Action" under s.75 of the EPBC Act. The EPBC Act referral 2018/8383 considered the relevant controlling provisions to be; National Heritage Places, Listed Threatened Species and Communities; Listed Migratory Species and Commonwealth Marine Species.

On the 26 February 2022, the DAWE (now DCCEEW) provided written approval to the Project CERES (Reference: 2018/8383) to construct and operate a Urea Plan and associated infrastructure on the Burrup Peninsula, with the controlling provisions under Sections 15B, 15C, 18A, 18A, 20, 20A, 23 and 24A all being approved. The Approval was subject to several conditions.

On the 11th of March 2021, a Notice was submitted under section 18(2) of the Aboriginal Heritage Act 1972, by the OWNER. The notice advised that the OWNER wished to use the land described as: Reserve 49120, Portion of Lots 3012, 3013,305 and 3016 on Plan 42282, portion of Lot 556 and Lot 557 on the Plan 406755, Reserve 52836, Lot 553 on Plan 406755, CT 3167/958 Hearson Cove Road, City of Karratha (Land). Consent was granted on the 27 January 2022 (MIN-2021-0354).

3.3 Environmental Conditions

The Project has the potential to impact aspects of both State and Federal significance. Therefore, the respective regulatory bodies (EPA and DCCEEW) have imposed Conditions associated with environmental approvals (MS 1180) and EPBC Approval 2018/8383 and the s.18 consent on the Project.

In addition, the Project has commitments that have arisen from various consultation sessions with MAC and other stakeholders, as well as conditions and other requirements related to environmental approvals, permits and licenses under the Rights and Irrigation and Water Act 1914, Environmental Protection Act 1986 (Part V) and the Aboriginal Heritage Act 1972.

Pursuant to section 45 of the Environmental Protection Act 1986 (EP Act), it has been agreed that the proposal, as described in Section 3.1 of this Plan and subject to changes approved under Section 43A of the EP Act on March 20th 2020, February 10th 2021, and May 13th 2021 may be implemented subject to the implementation conditions and procedures detailed within MS 1180.

All Ministerial Statement (1180) Conditions relating to or with the potential to relate to the construction program of works have been summarised in Appendix A –Approval Conditions Compliance Table of this Plan. The CONTRACTOR have noted that not all of these conditions apply to the CONTRACTOR scope of work, and the execution of many conditions sit with the OWNER.

Conditions associated with the EPBC Approval 2018/8383 have also been included in Appendix A of this Plan, where they apply to the CONTRACTOR scope of works being carried out during construction.

The CONTRACTOR will maintain a Compliance Obligations Register (COR) (via electronic system) to ensure that environmental conditions of all licenses, permits and approvals are recorded and updated as required. The Compliance Register will provide details of where or how that condition or commitment is being met.

Table 3-2 Environmental Project Conditions

Project Conditions		
Aspect	**Objective**	**Management Actions**
Compliance with EPBC Act Approval Conditions (EPBC 2018/8383)	The CONTRACTOR is to comply with relevant conditions of the EPBC Approval 2018/8383	The CONTRACTOR must ensure that any activities being carried out during construction under the CONTRACTOR control are undertaken in compliance with Approval EPBC 2018/8383. The CONTRACTOR shall maintain and provide the OWNER Environmental & Heritage Manager with accurate records substantiating all activities within its control associated with or relevant to the conditions of EPBC 2018/8383, including measures taken to implement the Approved Plans under Ministerial Statement 1180, to the extent they are required to be implemented under the EPBC 2018/8383 Approval. The CONTRACTOR will advise the OWNER Environmental & Heritage Manager of any actual or potential contravention of the conditions of EPBC 2018/8383 immediately and provide all information and do all things reasonably required by the OWNER Representative to rectify the actual or potential contravention and comply with conditions of EPBC 2018/8383. Within two months of every 12-month anniversary of commencement (as defined in EPBC 2018/8383) during construction, the CONTRACTOR should provide the OWNER's Representative with all information required by the OWNER Representative to allow the OWNER to compile and publish the report required by condition 17 of EPBC 2018/8383.

Project Conditions		
Aspect	**Objective**	**Management Actions**
Compliance with EP Act Approval Conditions (Ministerial Statement 1180)	The CONTRACTOR is to comply with relevant aspects of Ministerial Statement 1180.	The CONTRACTOR must ensure that the CONTRACTOR construction activities that are undertaken are done so in compliance with Ministerial Statement 1180, granted under section 45 of the Environmental Protection Act 1986 (WA) and dated 24 January 2022. Without limitation the CONTRACTOR shall comply with Condition 1 of the MS 1180. The CONTRACTOR must advise the OWNER Representative of any actual or potential non-compliance with the conditions of Ministerial Statement 1180 immediately and provide all information and do all things reasonably required by the OWNER Representative to rectify the actual or potential non-compliance and comply with conditions within Ministerial Statement 1180. The CONTRACTOR shall provide the OWNER Representative will all information required by Perdaman Representative in relation to the previous 12 months regarding non-compliances so that the OWNER can compile and submit the Compliance Assessment Reports for the Project as required by condition 15 of the Ministerial Statement 1180. The CONTRACTOR must to the extent which they apply to the construction phase of the Project, comply with the following the OWNER Confirmed Management Plans. • Flora Management Plan required by condition 4 of MS 1180 • Fauna Management Plan required by condition 5 of MS 1180 • Threatened Species Management Plan required by condition 5 of MS 1180 • Surface Water Management Plan as required by condition 8 of MS 1180

Project Conditions		
Aspect	**Objective**	**Management Actions**
		• Cultural Heritage Management Plan required by condition 9 of MS 1180 • Light Management Plan as required by condition 10 of MS 1180. In the event a threshold stated in one of the above confirmed plans is exceeded, the CONTRACTOR must immediately notify the OWNER to allow the OWNER to conduct appropriate investigation and reporting of the exceedance to the applicable regulatory body, including: EPA (DWER), DCCEEW. In the event that non-achievement of a management action or target within the Cultural Heritage Management Plan, the CONTRACTOR will immediately notify the OWNER to allow the OWNER to conduct appropriate investigation and reporting of the non-achievement to the applicable regulatory body, including EPA (DWER), DCCEEW, MAC, DPLH and Registrar of Aboriginal Sites.
Compliance with EP Act clearing provisions	The CONTRACTOR is to comply with s51C of the Environmental Protection Act 1986 (WA)	The CONTRACTOR must not undertake any clearing outside the authorised extents specified within conditions 1, 4-1 and 5-1 of the MS 1180.
Compliance with the *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act)	The CONTRACTOR is to comply with relevant provisions of the RIWI Act	The CONTRACTOR must obtain and comply with all authorisations required under the RIWI Act for works under their scope including: Bed and banks permit under s 11 of the RIWI Act.
Compliance with the *Biodiversity Conservation Act 2016* (WA) BC Act) and Regulations	The CONTRACTOR is to comply with relevant provisions of the BC Act.	The CONTRACTOR must obtain and comply with all authorisations required under the BC Act for construction works under the scope: Authorisation to Take or Disturb Threatened Fauna, s40 of the BC Act. License to Take Fauna (Relocation), Regulation 28 BC Regulations.

Project Conditions		
Aspect	**Objective**	**Management Actions**
Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act)	The CONTRACTOR is to comply with relevant provisions of the AH Act	The CONTRACTOR must ensure that all actions and construction activities carried out by the CONTRACTOR, or its sub-contractors is undertaken in compliance with the Section 18 Consent under the Aboriginal Heritage Act 1972.
Compliance with the *Environmental Protection Regulations 1987*	The CONTRACTOR is to comply with relevant provisions of the Environmental Protection Regulations.	The CONTRACTOR must ensure that all actions and construction activities carried out by the CONTRACTOR, or its sub-contractors are undertaken in compliance with the relevant prescribed premises of the Environmental Protection Regulations 1987.
Condition MS 1180 Commitments	**Flora & Vegetation**	The CONTRACTOR must not clear more than: 73.05 ha of native vegetation within the development envelope. 0.16 ha of vegetation community identified as Priority 1 (P1) Priority Ecological Community (PEC) - Burrup Peninsula Rock Pile Communities
	Terrestrial Fauna	The CONTRACTOR must not clear more than: • 0.16 ha of fauna habitat type identified as Rocky Outcrops • 49.17 ha of fauna habitat type identified as Hummock Grasslands on Mid-slopes • 11.97 ha of fauna habitat type identified as Samphire Shrublands / Supratidal flats • 2.7 ha of fauna habitat type identified as Drainage Lines The CONTRACTOR must not impact short-range endemic fauna species, unless the CEO confirms in writing that the species occurs in self-sustaining population outside the development envelope. The CONTRACTOR must minimise direct and indirect impacts to the northern quoll, Pilbara olive python and the ghost bat within the development envelope during construction activities.

Project Conditions		
Aspect	**Objective**	**Management Actions**
	Surface & Groundwater	The CONTRACTOR must carry out construction activities in a manner that minimises the project attributable impacts on groundwater quality, flow direction and/or depth to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected. The CONTRACTOR must carry out construction activities in a manner that maintains the hydrological regimes and the quality of surface water so that environmental values are protected.
	Acid Sulfate Soils	In the event that acid sulfate soils are disturbed during construction works, the CONTRACTOR shall treat and manage acid sulfate soils in accordance with the requirements of the Department of Water and Environmental Regulation's guideline on the Treatment and management of soil and water in acid sulfate soil landscapes (DER, 2015).
	Aboriginal Heritage Project must be undertaken in accordance with Section 18 Consent (REF: MIN-2021-0354) (dated 27 Jan 2022) under the Aboriginal Heritage Act 1972. There must be no disturbance to any Aboriginal heritage site outside of that approved under Section 18 of the AH Act. Minimise impacts to unknown Aboriginal heritage sites.	During construction the CONTRACTOR must carry out works in a manner that: Avoids, where possible, and otherwise minimise direct and indirect impacts to social, cultural, heritage, and archaeological values within and surrounding the development envelope. Allows ongoing Traditional Owner and Custodian access to enable traditional activities and connection to culturally significant areas within and surrounding the development envelope. Avoids, where possible, and otherwise minimises direct and indirect impacts to visual and amenity impacts to social and cultural places and activities

3.4 Port Approvals

Pilbara Ports Authority (PPA)'s is a Government Trading Enterprise under the Port Authorities Act 1999 (WA), jurisdiction and environmental management over the Dampier Port is determined by a range of State and Commonwealth legislation, including (not limited to) the Environmental Protection Act 1986, which is administered by the Western Australian Environmental Protection Authority (EPA). As such all its lessees, licenses, service providers, contractors and other port users are all required to comply with the Environmental Protection Act 1986 (WA) and any associated conditions placed on the Dampier Port.

All statutory approvals required for the construction of the wharf at the port will be managed by the PPA under a separate approvals process. Once constructed by the PPA, the OWNER will place its storage and ship loading infrastructure on the new wharf on PPA managed land.

3.5 Environmental Legislative Requirements

Some of the existing State and Federal legislation which the Project is required to adhere to in relation to environmental management is listed in Table 3-3 below.

Table 3-3 Environmental Legislative Requirements

Legislation	Scope of Legislation	Relevance to Project Scope
Aboriginal Heritage Act 1972 (WA)	Protection of known sites of Aboriginal Heritage significance, and those unknown. Section 18 (s.18) consent is being applied for under the Aboriginal Heritage Act, for construction works being carried out by the CONTRACTOR. PPA has received a range of approvals under the Aboriginal Heritage Act in relation to works at the Dampier port	High Relevance – Any works conducted at the Port are subject to the Approvals PPA has gained under the Aboriginal Heritage Act. In addition, the OWNER is subject to its own consent (s.18) approval conditions under the Act (TBC).
Aboriginal Heritage Regulations 1974 (AH Regs)	Regulatory framework for the protection of sites of Aboriginal Heritage significance.	High Relevance – As above
Biodiversity Conservation Act 2016 (WA)	Protection of biodiversity; particularly threatened species and threatened ecological communities	High Relevance
Biosecurity and Agriculture Management Act 2007 (WA)	Provides for the control of certain organisms, the use of agricultural chemicals, identification, and attainment of standards of quality and safety for certain products and	High Relevance

Legislation	Scope of Legislation	Relevance to Project Scope
	substances, the establishment of declared pests.	
Contaminated Sites Act 2003 (WA)	Regulates matters relating to the identification, assessment, recording, management, and clean-up of contaminated sites.	Low Relevance
Contaminated Sites Regulations 2006	Regulates matters relating to the identification, assessment, recording, management, and clean-up of contaminated sites	Low Relevance
Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth)	Protection of Environmental matters if national significance. Impacts on commonwealth land. Approvals are required to conduct work in some areas and approvals and conditions set for specific projects. PPA currently holds a range of approvals under the EPBC Act across its operational port in Dampier.	High Relevance – Any works conducted by the CONTRACTOR are subjected to the approvals held by the PPA under this Act.
Environmental Protection Act 1986 (WA)	Prevention, control and abatement or pollution and conservation protection and enhancement of environment. Project CERES will be applying for Part V and are waiting Part IV approvals. Pilbara Port Authority is the licensee for the export of bulk minerals from the Utah Bulk Handling Facility and East Side operations at the Port of Port Hedland under Part V.	High Relevance – Part IV and Part V approvals at the Project site and within the Dampier Port area.
Heritage Act 2018 (WA)	Provides for and encourages the conservation of places (natural or constructed) which have significance to the cultural heritage of the state.	High Relevance
Rights in Water and Irrigation Act 1914 (WA)	Governs water resource management and allocation in Western Australia ensuring water resources are comprehensively and appropriately managed.	Moderate Relevance
Environmental Protection (Controlled Wastes) Regulations 2004	Manages the transportation and disposal of controlled wastes.	High Relevance – The Project will be required to dispose of various controlled wastes including (but not limited to); oils, waste soils, solvents,

Legislation	Scope of Legislation	Relevance to Project Scope
		sewage, paints etc.
Environmental Protection (Unauthorized Discharge) Regulations 2004	Prevention of the releasing of contaminants into the environment.	High Relevance – Use of substances that if incorrectly disposed of, have the potential to damage the sensitive surrounding environment
Environmental Protection (Noise) Regulations 1997	Regulates noise emissions within the State to prevent significant impact on neighbouring communities and receptors.	Low Relevance
Clean Energy Act 2011	Ensures the reduction of GHG's by using cleaner energy solutions where practicable.	Moderate Relevance – During Construction Many aspects of Project work will include the use of fossil fuels generating GHG emissions, oils, greases and solvents etc in daily operations of vehicles, machinery and plant. In addition, some Project activities (requiring Part V approvals) may be producing GHGs during construction program.
National Environmental Protection Measure (Diesel Vehicle Emissions).	Reduce the exhaust emissions from diesel vehicles by facilitating compliance with in service emissions standards for diesel vehicles.	High Relevance
National Greenhouse and Energy Reporting Act 2007 (Cwth) & Regulations	Requires Data be recorded accurately and reported as per Act. Corporations emitting more than 50kT of carbon dioxide equivalent units are required to register and report their Scope 1 and Scope 2 emissions for all	High Relevance – Chemicals will be used and other materials (i.e. concrete)

Legislation	Scope of Legislation	Relevance to Project Scope
(2008)	Facilities in which they have Operational Control. Facilities emitting more than 25kT of carbon dioxide equivalent units must register and report Scope 1 and Scope 2 emissions.	The OWNER and the CONTRACTOR corporate will require the reporting. NGERS reporting will include accurate usage of scope 1 and 2 emissions (fuels, waste, oils and greases, solvents and additional information required.
Main Roads Act 1930	This act allows for the construction and maintenance of highways, main roads, secondary roads and other roads, the control of access to roads and for other purposes.	High Relevance – Project must conform to Main roads rules and restrictions when carrying out works on the Hearson Cove Road realignment.
Port Authorities Act 1999 (WA)	Defines a clear role for all port authorities and establishes lines of accountability and reporting requirements to the State Government. Under the Port Authorities Act, PPA has a duty to act on commercial principles, and is afforded the power to perform defined functions	High Relevance – construction works including the conveyor, ship loader and storage shed will be carried out by the CONTRACTOR and these works will be managed by PPA.
Environment Protection (Sea Dumping) Act 1981 (Commonwealth)	The loading and placement of dredged material at sea is regulated under this legislation. PPA is required to apply for a sea dumping permit for dredging activities in PPA's ports, where dredged material is to be placed at sea. PPA currently holds a 5-year Sea Dumping Permit for maintenance dredging in each of its operational ports in Ashburton, Dampier and Port Hedland.	Moderate Relevance – Construction works within the Port are subject to any approval conditions associated with Dampier Port. The PPA will be responsible for the conduction of dredging activities.

3.6 Review Legislation

Legislation will be reviewed and updated regularly and as necessary. Where changes to the applicable environmental State and Commonwealth legislation are identified, this CEMP and all relevant sections shall be amended to reflect changes.

4. KEY ENVIRONMENTAL VALUES

A brief overview of the key environmental aspects and values is presented in Sections 4.1 to 4.7 of this Plan. A comprehensive summary of the key environmental values and the supporting surveys and investigations that have been carried out to date is available within the EPA Assessment Report 1705 (EPA, 2021) and the Environmental Review Document for the Project CERES (Cardno, 2020). To comply with ISO 14001 requirements, an aspects and impacts register has been included as Appendix C of this Plan.

The EPA has assessed the preliminary environmental factors for the proposal to be;

- Coastal processes
- Marine environmental quality
- Inland waters
- Flora and vegetation
- Terrestrial Fauna
- Air Quality
- Social Surrounds

These factors must be considered throughout the life of the project in order to remain compliant with environmental legislation and requirements. In addition, protected marine fauna are to be considered throughout the proposal even though they were not deemed a key environmental factor at the conclusion of its assessment by the EPA.

4.1 Flora & Vegetation

No flora species listed as threatened under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) are known to occur on the Burrup Peninsula, or within 100 km of the study area for the project. No flora species listed as threatened under the Biodiversity Conservation Act 2016 (BC Act) have been recorded on the Burrup Peninsula. No Threatened Ecological Communities (TEC) listed under the EPBC Act, or the BC Act are known to occur on the Burrup Peninsula (Cardno 2021a). However, vegetation associations of conservation significance have been previously identified in the Project area, and high conservation value for vegetation in Hearson Cove Valley has been prescribed due to the occurrence of uncommon floristic variation in comparison to the rest of the Peninsula.

The surveys conducted for the Project area recorded two (2) flora species of conservation significance; Terminalia supranitifolia (Priority 3) and Rhynchosia bungarensis (Priority 4) within the study area and the development envelope. The Burrup Peninsula rock pile community PEC (Priority 1) was recorded in numerous locations within the development envelope, and several of these sites are located within the disturbance footprint for the proposal (Cardno 2021a). A total of 0.16ha of the P1 Priority Ecological Community - Rockpiles of the Burrup Peninsula will be cleared, potentially impacting significant associated vegetation. The surveys also recorded 23 locally significant vegetation communities within the development envelope.

The Project will directly disturb 21 of these locally significant communities during construction works (Cardno 2021a). The construction activities of clearing and site preparation for the

project will include the disturbance of approximately 73.05 ha. of native vegetation, including 64ha in 'Good to Excellent' condition.

Additional conservation efforts to be enacted throughout the construction period includes avoiding the spread and proliferation of introduced plant species. Introduced species known to occur within the study area that shall be appropriately managed include;

- *Cenchrus ciliaris (Buffelgrass)*
- *Aerva javanica (Kapok Bush)*
- *Passiflora foetida (Passion vine)*
- *Malvastrum americanum (Spiked Malvastrum)*

Details of management measures relevant to the protection of flora and vegetation are included in the OWNER Confirmed Flora Management Plan (FMP) PCF-PD-EN-FMP and management specific to construction activities within the CONTRACTOR Flora & Vegetation Management Sub-Plan (Attachment B).

4.2 Terrestrial Fauna

There are four main fauna habitats within the development envelope. These habitats are Rocky Outcrops, Hummock Grasslands on Mid-slopes, Samphire Shrublands / Saltplains, and Drainage Lines (Cardno 2020).

There are 99 conservation significant terrestrial fauna species identified with the potential to occur in the project area, with 28 species (26 migratory / marine bird species and 2 bat species) recorded during the surveys. Of the 26 migratory and/or marine bird species many have common habitat preferences (Cardno 2020).

The two bat species identified in surveys are the ghost bat, a threatened fauna species listed as Vulnerable under both the EPBC Act and the BC Act, and the North-Western Free- Tailed Bat is listed as a Priority 1 species under the BC Act (Cardno 2020).

The northern quoll (D. hallucatus) and the Pilbara olive python (Liasis olivaceus barroni), which are threatened fauna species listed as Vulnerable and Endangered respectively under the EPBC Act, were not recorded during the fauna surveys despite having the potential to occur in the region (Cardno 2020).

The Project could potentially impact the recorded terrestrial fauna species via the clearing of up to 64 ha of 'Good to Excellent' condition foraging and roosting habitat for species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the Biodiversity Conservation Act 2016. Clearing of 49.33 ha (0.16 ha of rocky outcrop and 49.17 ha Hummock Grasslands on Mid Slopes) of northern quoll and Pilbara olive python habitat in 'Good to Excellent' condition. Clearing of 2.7 ha of ghost bat drainage line habitat in 'Good to Excellent' condition. Clearing of 11.97 ha of EPBC Act listed Migratory / marine bird habitat in 'Good to Excellent' condition.

In February and March 2022, a Short-Range Endemic invertebrate fauna survey was undertaken by Bennelongia in accordance with the Environment Protection Authority's Technical Guidance: Sampling of Short-Range Endemic Invertebrate Fauna. A total of 424 specimens belonging to at least 28 species of SRE groups were collected. Groups

represented include trapdoor spiders (one species), pseudoscorpions (12 species), scorpions (one species), centipedes (two species), millipedes (three species), isopods (six species) and snails (three species).

Twenty-one species are considered to be potential SREs, one an unlikely SRE, and six species are widespread. At least 19 of the 21 potential SRE species are only known from the Project area. They comprise 11 species of pseudoscorpion, six species of isopod, one centipede species and one millipede species. While a species of land snail belonging to the Burrup Peninsula rock pile Priority Ecological Community are present, the probable species is widespread.

Based on the size of the Project area, what is known of the biology of the SRE Groups and the continuous connections of habitat inside the development envelope with similar habitat outside, it is likely that all species have distributions that extend beyond the Project. Therefore, it is unlikely that the Project development will have significant detrimental effect the conservation status of any short-range endemic species.

Details of management measures relevant to the protection of terrestrial fauna are included in the OWNER Confirmed Fauna Management Plan (FaMP) PCF-PD-EN-FaMP, OWNER Confirmed Threatened Species Management Plan (TSMP) PCF-PD-EN-TSMP and management specific to construction activities within the CONTRACTOR Native Fauna Management Sub-Plan (Attachment C).

4.3 Marine Fauna

The Project CERES Environmental Scoping Document (Cardno, 2019) identifies introduction of marine pests, accidental discharges, underwater noise during construction and artificial light as potential impacts and risks to marine fauna from the Project. Activities that could result in introduction of marine pests, accidental discharges to the marine environment or underwater noise emissions are those associated with construction of shipping berths which are not within the scope of the OWNER's approvals and are not discussed further. Artificial light associated with the onshore facilities (production plant and port facilities) has the potential to impact marine fauna, most notably protected turtle species known to utilise nearby and adjacent beaches.

Six species of marine turtle occur in the Dampier Archipelago, although no significant rookeries or potential nesting habitat near site gives reason to expect little impacts towards protected turtle species.

The National Conservation Values Atlas (DoEE, 2015) maps the waters directly adjacent to Dampier Port as a Biologically Important Area (BIA) for some marine turtle species protected under the EPBC Act. The following turtle species have Biologically Important Areas (BIAs) (internesting) identified at proximity of the Dampier Port:

- *Natator depressus* (Flatback Turtle)
- *Chelonia mydas* (Green Turtle)
- *Eretmochelys imbricate* (Hawksbill Turtle)

- *Caretta caretta* (Loggerhead Turtle)

Because of the presence of protected turtle species in surrounding BIAs, the Department considers impacts on these species, or their habitat as a result of Project activities, as significant; and special care will be taken to consider protected species throughout the life of the Project.

As a result of precautionary considerations for protected turtle species occurring in marine areas surrounding the Project, the CONTRACTOR engaged Pendoley Environmental (PENV) to undertake benchmark artificial light monitoring to establish current light pollution levels, create a baseline for light modelling and future light monitoring surveys.

vesselThe survey goal for Pendoley's assessment was to capture all-sky imagery from 3 primary locations (as specifically identified by the DWER conditions) and any additional locations identified after consultation with Murujuga Aboriginal Corporation (MAC), as per the EPA Recommended Conditions (EPA Report 1705, Assessment number 2184) Condition 10, regarding light management.

The existing lighting environment is very bright, and all the monitoring locations were heavily influenced by surrounding artificial light sources from Burrup industrial sites, the King Bay Port facilities, LNG plant gas flares, town of Dampier and the Karratha airport and townsite. Existing light pollution has degraded the natural night sky to that of a suburban equivalent, where many stars are no longer visible to the naked eye and the milky way is only partially visible.

In consideration of light spill management and comments from the DCCEEW; the EPA considers it is unlikely that the proposal would have a significant impact on Marine Fauna and that the impacts to this factor are manageable. Accordingly, the EPA did not consider marine fauna to be a key environmental factor at the conclusion of its assessment.

Details of management measures relevant to the protection of marine fauna (turtles) are included in the OWNER Confirmed Fauna Management Plan (FaMP) PCF-PD-EN-FaMP, OWNER Confirmed Threatened Species Management Plan (TSMP) PCF-PD-EN-TSMP and management specific to construction activities within the CONTRACTOR Native Fauna Management Sub-Plan (Attachment C).

4.4 Inland Waters

There are no permanent surface water bodies (including wetlands) located within the development envelope. Surface water flow occurs along ephemeral creek lines mainly during significant rainfall events. During periods of heavy rain and extreme spring tides, the supratidal flats between sites C and F are subject to inundation (Cardno 2020).

Groundwater beneath the development envelope is expected to be hypersaline and found at shallow depth (up to 2 mBGL) due to the level of the site in relation to the tide. Groundwater is reported (Cardno 2020) to have been encountered at approximately 0.1 - 1.0 mBGL within the tidal flats area (Astron Environmental 1999). Site C groundwater investigations reported groundwater levels ranged from 0.7 m to 2.8 m below the ground surface (Soil and Rock

Engineering 2000). A Detailed hydrogeological study was undertaken by Tetra Tech Coffey (Coffey), between December 2021 and March 2022 to quantify baseline groundwater quality, groundwater flow directions, and the depth to groundwater beneath Sites C and F at the proposed Project prior to construction commencing. The CONTRACTOR have refined several design elements, including the causeway and civil works associated with Site C and F, which has eliminated the need for dewatering across the majority of the site. However, several deep trenches within other areas of the Site will potentially intercept groundwater and dewatering will likely be required.

It is important to understand the hydrology and hydrogeology of the development envelope so as to properly manage surface and groundwater flows causing erosion, sedimentation and potential contamination of the surrounding environment.

Potential impacts to surface water quality from stormwater run-off, leaks from holding ponds, chemical and fuel spills, sediment transport and sediment deposition and other runoff from project infrastructure, are likely to occur during the Project activities. In addition, impacts to groundwater during dewatering, discharges to the Water Corporation's Multi-User Brine Return Line (MUBRL) and where Acid Sulfate Soils are disturbed may also impact surface and groundwater quality.

These potential impacts on inland waters may also affect other elements of the environment including, but not limited to, impacts to flora and vegetation and terrestrial fauna through changes to the water regime and availability, and impacts to marine environmental quality through changes to water quality and flow in supratidal and intertidal areas. Disturbances to inland waters may also change the relationship indigenous peoples hold with country.

Details of management measures relevant to the protection of inland waters are included in the OWNER Confirmed Surface Water Management Plan (SWMP) PCF-PD-EN-SWMP and management specific to construction activities within the CONTRACTOR Water Quality, Erosion & Sediment Control Sub-Plan (WQESCMP) (Attachment A). In addition, the Project has developed an Acid Sulfate Soil Management Plan in accordance with condition 6 of the MS 1180 prior to ground disturbance.

4.5 Acid Sulfate Soils

The ERD (Cardno 2020) indicates that the possible presence of acid sulfate soils in the southern portion of Site C and the adjacent supra-tidal flat area has been reported. This area is categorised as Class 1 with a high to moderate risk of acid sulfate soils occurring within 3 m of the natural soil surface. Further, the ERD (Cardno 2020) indicates that the potential for acid sulfate soils to occur or develop within Site F is minor as it has been previously disturbed for construction laydown purposes. The CONTRACTOR on behalf of the OWNER, had Coffey carry out a detailed and intrusive Acid Sulfate Soil investigations in January 2022. The investigation findings comprised:

- No actual acidity exists in the form of S-TAA indicating that there is no soluble and exchangeable acidity within the soil profile.
- Analysis for maximum peroxide 'oxidisable' sulfur present in the soil (SPOS) exceeded the DER ASS guideline of 0.03 %S in nine samples, and

- Potential Acid Sulfate Soils have been confirmed, however are located within the Supratidal zones (refer to figures in the CONTRACTOR WQESC Plan – Attachment A).

Several deep trenches are likely to intercept ASS during the construction works, and therefore in accordance with the MS 1180 Condition 7, an Acid Sulfate Soil Management Plan (ASSMP) has been prepared by the CONTRACTOR to manage, treat, and monitor ASS in accordance with the requirements of the Department of Water and Environmental Regulation's guideline on the treatment and management of soil and water in acid sulfate soil landscapes (DER, 2015). The Acid Sulfate Soils Management Protocol (Appendix L) provides further detail on management.

4.6 Coastal Processes

A range of coastal processes occur across the Dampier / Karratha area which act to shape the coastal landform in the region. Coastal dynamics in this region are recognised to be a complex interaction between rock features, fluvial systems, and coastal floodplains (Eliot et al. 2013).

A mangrove community is located at King Bay, to the west of Burrup Road. The community is supported by tidal movements that provides sedimentation, seawater recharge to maintain prevailing salinity fields, nutrient delivery, and recruitment of benthos (Semeniuk 1994). The intertidal flats surrounding the Burrup Peninsula are a locally significant habitat for marine birds and waders.

The EPA considers that the impacts to this factor are not significant and are likely to be consistent with the EPA's objective, provided there is implementation of the OWNER's proposed causeway design. The EPA has recommended Condition 1 of MS 1180 include that the causeway ensure culvert flow velocities of less than 1.0 m/s to ensure the environmental outcomes of this design are achieved.

4.7 Cultural Surrounds

4.7.1 Cultural Values

Murujuga is the traditional Aboriginal name for the Dampier Archipelago and surrounds, including the Burrup Peninsula and Murujuga National Park. Murujuga has been listed on Australia's National Heritage List under the Dampier Archipelago (including Burrup Peninsula) by the Australian Government since 2007 (see Figure 2-2). Portions of the National Heritage Listing Area forms the Murujuga National Park (EPA Report, 2021).

Murujuga has numerous important values including more than one million petroglyphs in an area of more than 37,000 ha, representing one of the most dense and diverse collections of petroglyphs in the world. In addition, the Dampier Archipelago comprises 42 islands, islets and rocks, all within a 45 km radius of Dampier having exceptional natural beauty, high conservation values and outstanding heritage.

The Ngarluma, Yindjibarndi, Yaburara, Mardudhunera and Wong-Goo-Tt-Oo groups, collectively known as the Ngurra-ra Ngarli, are represented by MAC who are the custodians of Murujuga. Murujuga is sacred to the Ngura-ra Ngarli. It is a place where everything is

connected, through the Ancestral Beings - the land, the sky, the plants, the animals, the Lore and the spiritual world. This is the belief system that underlies life on Murujuga today.

The OWNER Confirmed Cultural Heritage Management Plan (CHMP) identifies sites of cultural heritage value that have been recorded within the proposal development envelope east of Burrup Road and which include:

- A man-made structure / engraving located within Site F which is a National Heritage Listed Place (NHP) (Site ID 9439) and is considered a matter of national environmental significance (MNES) under the EPBC Act.
- An engraving and grinding patches / grooves located in Site C which is NHP (Site ID 9599).
- Nine sites identified in consultation with MAC within Site C and F comprising Midden/Artefact assemblages, engravings and artifact scatters, four of the nine sites are gender restricted.
- An additional 24 sites of cultural heritage value are recorded by the Department of Planning Lands and Heritage across Site C and F with include artefacts, scatters engravings, grinding patches/grooves and middens/scatters. Seven of the 24 sites are gender restricted.

The cultural heritage values identified that are potentially impacted by the CONTRACTOR project works are as follows:

- Three Aboriginal heritage sites located in Site C (Site IDs 18615, 19239, and 19874) will be salvaged and relocated during construction of the proposed urea plant as agreed with MAC and under the direction of both MAC and a qualified archaeologist.
- Deep Gorge (now known as Ngajarli), which is located about 1.5 km east of Site F and includes rock art, a boardwalk and interpretive signage to educate visitors about its cultural significance to the Traditional Owners. The Gorge may be impacted through the Projects proposed lighting, adding to the existing nightglow. This nightglow may also impact the Hearson Cove.
- The Fish Thalu Aboriginal heritage site situated in the King Bay / Hearson Cove supratidal to intertidal flat area to the north-east of Site F is located outside the project development envelope and is therefore unlikely the construction works will cause impacts to this site, however due to its proximity has still been considered as part of the cultural significance of the area.
- Eight recorded Aboriginal Heritage Sites are located adjacent to the development envelope.

Details of management measures relevant to the protection of cultural values are included in the OWNER Confirmed Cultural Heritage Management Plan (CHMP) PCF-PD-EN-CHMP and specific to construction activities within the CONTRACTOR Heritage Management Sub-Plan (Attachment D).

4.7.2 Land-Use & Visual Amenity

The Burrup Peninsula is a popular tourist and recreational destination characterised by coastline, rocky outcrops, lowlands. The Burrup Peninsula also features several large industrial facilities located within the Burrup Strategic Industrial Area (BSIA).

Industrialisation began on the Dampier Archipelago in the 1950s. These facilities include the Karratha Gas Plant, Pluto LNG Plant, Yara Pilbara Fertilisers Pty Ltd Ammonia Plant, and the Yara Pilbara Nitrates Pty Ltd Technical Ammonium Nitrate Production Facility.

Hearson Cove is located about 2.2 km to the east of the development envelope and Hearson Cove beach is a popular recreational area with a strong social value for residents and visitors. The Hearson Cove foreshore is zoned as 'Conservation, Recreation and Natural Landscapes' in the City of Karratha Local Planning Scheme No. 8 (DPLH 2020). Hearson Cove is currently accessed via Hearson Cove Road which transects Site F. Hearson Cove Road also enables the public and tourists to access Ngajarli.

Due to sharing land-use with visual amenity and tourism values, it is important to avoid the disturbance of heritage sites, ensure access to surrounding cultural heritage sites and obey access limitations (i.e., gender restrictions) to uphold such values.

Details of management measures to protect land-use and visual values relevant to indigenous culture are included in the OWNER Cultural Heritage Management Plan (CHMP) PCF-PD-EN-CHMP and the OWNER Light Management Plan (LMP) PCF-PD-EN-LMP. Specific to construction management measures have been identified within the Light Management Protocol (Appendix O) and the CONTRACTOR Heritage Management Sub-Plan (Attachment D).

5. LEGAL OBLIGATIONS & OTHER REQUIREMENTS

A list of the Environmental Legislative requirements has been provided in Table 3-3 of this Plan. The high-level governance framework for this Project has been detailed in Section 3 of this Plan. Project and activity specific license, permits and approvals are outlined in the issue specific environmental management plans and in Section 3.1 of this plan. A copy of all relevant permits, licenses and development approvals relevant to the Project construction works will be maintained via an electronic system.

5.1 Groundwater Management

Under the *Rights in Water and Irrigation Act 1914* (RIWI 1914), a 5C Licence (Groundwater abstraction) will be required from the Department of Water and Environmental Regulation (DWER) before dewatering can commence, if required.

A 5C licence allows the licence holder to abstract water from a watercourse, wetland or underground source. Construction water will be sourced through licenced groundwater abstraction wells.

A 26D licence is issued under the provisions of Section 26D of the RIWI 1914 to construct or alter wells. Whilst groundwater monitoring and dewatering using spears does not necessarily require a 26D licence, it is advised to consult with the DWER prior to submission of the licence application.

A Section 11 permit will be required where the Hearson Cove Road realignment works over the intertidal flats are to interfere or obstruct the bed and/or bank of a watercourse or wetland.

Non-compliances with the conditions of above licences/permits will be documented and addressed through the CONTRACTOR HSSE Data Management System (InControl) (refer to section 18 of this Plan).

5.2 Wastewater Discharge Approval

The Project will utilise the Water Corporation's Multi-User Brine Return Line (MUBRL) ocean outfall for discharge of wastewater during construction. The CONTRACTOR will require approval from the Water Corporation to utilise this system. In addition, the CONTRACTOR shall comply with Ministerial Statements 567 and 594 from 2001 and 2002 respectively that specifically detail conditions regarding the MUBRL.

The licensing of dewatering discharge into the MUBRL offsite by Department of Water and Environmental Regulation will also be required under Part V of the EP Act. This license will ensure that the water disposal shall meet the disposal water quality criteria.

All industries utilising the MUBRL are required to meet the requirements of the Water Corporation's Technical Compliance Advice Bulletin Ref. PM20992155 (22 February 2019).

5.3 Planning & Development Approval

The Project requires development approval from the City of Karratha under the Planning and Development (Local Planning Schemes) Regulations 2015 (WA). The Hearson Cove Rd realignment is required to meet certain design guidelines which will be assessed by the City of Karratha (CoK) under the Planning and Development (Local Planning Schemes) Regulations 2015. At the time of preparing this CEMP, the CONTRACTOR were preparing the documentation for the CoK to obtain the necessary permits and approvals.

5.4 Pilbara Port Authority

The Port Authorities Act 1999 (WA), defines a clear role for all port authorities and establishes lines of accountability and reporting requirements to the State Government.

Under the Port Authorities Act, PPA has a duty to act on commercial principles, and is afforded the power to perform defined functions, including:

- The maintenance and preservation of property vested in the ports; and
- The protection of the ports' environment and minimisation of the impact of port activities on that environment.

As part of its Environment and Cultural Heritage Policy commitment to deliver its services and activities in an environmentally sustainable and responsible manner, PPA maintains an Environmental Management Plan (EMP) in which construction related elements will be included in this CEMP. The Port Authorities Act also requires PPA to develop an EMP for its ports. The EMP is maintained under PPA's Integrated Management System (IMS) and complies with ISO 9001:2015 (Quality), and ISO 14001:2015 (Environment).

Section 3.4 discusses regulatory approvals required for the Project for works within the PPA jurisdiction. The CONTRACTOR has prepared this CEMP to include the requirements within the PPA EMP (2021-2022).

The “PPA aims to reduce the impact of operations on the surrounding environment and manage the effects of the environment on infrastructure and operations”. The CONTRACTOR will continue to liaise with PPA prior to construction to obtain any further project specific environmental management and reporting requirements to support PPA in meeting its environmental approvals once they have been obtained and overall objectives for the environmental protection surrounding the Port.

5.5 Burrup Strategic Industrial Area (BSIA)

The BSIA is a WA State designated area for industrial development. The Department of Jobs, Tourism, Science and Innovation (JTSI) is the lead agency for the development of the BSIA and Development WA (formerly LandCorp) is the estate manager. JTSI has provided approval to the OWNER to utilise land in the BSIA, subject to development approvals from the City of Karratha.

5.6 BMIEA Obligations

As part of the Ngarluma-Yindjibarndi Native Title Determination, Number WAD6017/1996, the Federal Court determined Native Title no longer existed over the Burrup Peninsula. However, prior to this determination, the State executed the Burrup Maitland Industrial Estates Agreement (BMIEA). The various claimants to the application under the Native Title Act have Future Act Right to Negotiate provision. The BMIEA agreed to extinguish Native Title and grant freehold title over the developable industrial sites. Locations are subject to agreed leaseback to Development WA (formerly LandCorp). The BMIEA are represented by MAC, who are custodians of Murujuga.

The BMIEA provides a variety of benefits to local Indigenous people through financial compensation; establishment of various employments; training; educational support; establishment of a Rock Art Study to monitor the industries emissions; and the development of a Roebourne Enhancement Scheme.

The OWNER has a Commercial Agreement with Murujuga Aboriginal Corporation (MAC) which, subject to financial close, identifies it as a future OWNER under the BMIEA. Accordingly, the OWNER will have certain prescribed financial and social obligations to MAC and the contracting parties, as a result of its activities on land within the Burrup Strategic Industrial Area (BSIA).

5.7 Ground Disturbance Permit

A Ground Disturbance Permit (GDP) is a permit issued to Project personnel, enabling Works within defined battery limits which will impact native vegetation, heritage or other

environmentally sensitive values. The GDP will be issued through a standalone process developed for the Project.

A Ground Disturbance Permit Request Form must be completed and submitted as per the Clearing and Ground Disturbance Plan (0000-ZA-E-02858). The Clearing and Ground Disturbance Plan addresses all information regarding the GDP Process for the project, how to fill out the request form and the roles and responsibilities of the CONTRACTOR and sub-contractors.

Activities include, but are not limited to, clearing and grubbing, grading open ground, cut and fill, movement of plant, equipment and vehicles and any other activity which will disturb or damage soil, waterways, habitat and, or vegetation.

The Projects Confirmed Cultural Heritage Management Plan includes management actions to minimise the impacts to heritage sites and cultural heritage values, one of which includes obtaining a GDP under the AHA before undertaking any works that involves ground disturbance. This request must include an assessment of the potential; for works to impact on Aboriginal Heritage Aspects, including the unearthing of buried archaeological sites, objects or burials and to shift surface isolated artefacts from probable impact by the works. In addition, actions to consider additional monitoring by a qualified and experienced archaeologist, for the moderate and high-risk areas and all areas within the proximity of extant Aboriginal cultural heritage sites.

It is the responsibility of the CONTRACTOR or person undertaking the ground disturbing activity, to ensure they submit to the CONTRACTOR Environmental Lead an application via the online portal at least two weeks prior to requiring access to the area being the subject of the GDP or in a timeframe agreed upon with the Environmental Lead.

The Subcontractor is responsible for ensuring the clearing/disturbance request area is within the approved clearing boundary and does not impact avoidance areas.

A GIS file supplied as a MapInfo Tab file in GDA MGA94 Zone50 co-ordinates of the clearing/disturbance request area is to be submitted with Section 1 of the GDP.

The CONTRACTOR acknowledges that Ground Disturbing Activities cannot commence until the CEO (EPA) has confirmed in writing that various Management Plans (“Confirmed Plans”) required under the Conditions stated in MS 1180 have been approved and satisfied.

5.8 Works Approvals and Licences (EP Act Part V)

The Project scope includes “Prescribed Activities” from ‘Prescribed Premises’ in accordance with the categories outlined in Schedule 1 of the Environmental Protection Regulations 1987.

The EP Act requires a works approval (under Part V) to be obtained before constructing a prescribed industrial premises and makes it an offence to cause an emission or discharge unless a licence or registration is held for the premises. There are various works approvals and licenses required under Part V for the construction of the Project to commence.

Table 5-1 of this Plan provides an overview of the Part V works approvals and associated licenses that will be applied for by the CONTRACTOR. Any requirements or conditions

pertaining to the Part V approvals and licenses will be included within the relevant management protocols (refer to Section 12).

Table 5-1 Environmental Works Approval & Licenses

Approval/Agreement	Purpose	Agency / Jurisdiction
EP Act 1986 - Part V - Works Approval & Licence - Cat 12. Screening plant	For establishment and operation of screening plant.	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat 31. Chemical manufacturing.	Chemical manufacturing (Operations).	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat 52. Power generation	For construction and operation of electric power generation using fuel.	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat 73. Chemical storage	For construction and operation of bulk storage of chemicals.	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat 85 Sewage facility	For construction and operation of sewage facility with discharge to land or waters.	DWER
EP Act 1986 - Part V - Works Approval & Licence - Cat 58. Material loading.	For construction and operation of bulk material loading onto vessels by material loading system.	DWER

5.9 Traditional OWNER & MAC Requirements

The OWNER is required in accordance with the Ministerial Statement (1180) to invite the relevant Traditional Owners to observe any Ground Disturbing Activities and other times during construction (where required) and take reasonable steps to facilitate the observation of those activities by those persons. Conditions 4-7 (3); 5-3 (4) and 9-2 (3) of the MS 1180, specify these requirements relating to inviting Traditional Owners to observe and the CONTRACTOR will comply and support the OWNER in inviting and making welcome these relevant Traditional Owners.

The Confirmed Cultural Heritage Management Plan includes a framework for consultation with Traditional Owners and Custodians via the Murujuga Aboriginal Corporation and other relevant stakeholders during the life of the proposal (Condition 9-2 (2)) and the CONTRACTOR will ensure compliance with this condition during construction works.

In addition, in accordance with the Ministerial Statement (1180), the CONTRACTOR must implement the Project by taking into consideration the Consultation framework and ensure that MAC is consulted when preparing, reviewing and revising any required management plans on behalf of the OWNER. The Conditions 3-3, 4-3, 5-3, 6-3, 8-2, 9-2 and 10-2 specify this requirement.

5.10 Guidelines & Publications

- Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality
- Department of Water and Environment Regulation (DWER 2018) Landfill Waste Classification and Waste Definitions 1996 (as amended December 2018) - Perth, WA
- Government of Western Australia Department of Environment Regulation (DER Revised June 2015) Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes
- Government of Western Australia Department of Environment Regulation (DER Revised June 2015) Treatment and Management of Soils and Water in Acid Sulfate Soil Landscapes. Acid Sulfate Soils Guideline Series - Perth, WA
- Water Corporation's Technical Compliance Advice Bulletin Ref. PM20992155 (22 February 2019).
- AS 4282-1997: Control of Obtrusive Effects of Outdoor Lighting Guidelines.

5.11 Reference Documents

The CONTRACTOR has referenced and will comply with the following Management Plans and/ or associated documents throughout this Plan.

- OWNER Project Environmental Management Plan - PCF-PD-EN-PEMP
- Confirmed Surface Water Management Plan – PCF-PD-EN-SWMP
- Confirmed Flora Management Plan – PCF-PD-EN-FMP
- Threatened Species Management Plan - PCF-PD-EN-TSMP
- Confirmed Fauna Management Plan - PCF-PD-EN-FaMP
- Confirmed Cultural Heritage Management Plan - PCF-PD-EN-CHMP
- OWNER Air Quality Management Plan - PCF-PD-EN-AQMP
- Confirmed Greenhouse Gas Emissions Management Plan - PCF-PD-EN-GHGMP
- OWNER Weed Management Plan – PCF-PD-EN-WMP
- OWNER Solid Liquid Waste Management Plan – PCF-PD-EN-SLWMP
- OWNER Pest Management Plan – PCF-PD-EN-PMP
- OWNER Emergency Response Management Plan – PCF-PD-EN-ERMP
- Confirmed Light Management Plan - PCF-PD-EN-LMP
- Acid Sulfate Soils Management Plan – PCF-PD-EN-ASSMP
- Environmental Review Document, Cardno – Rev 3.1 March 2020
- Environmental Protection Authority Report 1705 – Perdaman Urea Project, September 2021.
- Ministerial Statement 1180 – Perdaman Urea Project – 24 January 2022
- EPBC Approval Final Decision 2018/8383 – March 2022
- Pilbara Port Authority (PPA) Environmental Management Plan (EMP), 2021 – 2022.
- S. 18 Notice Letter (MIN-2021-0354)
- Part V Works Approval W6630

6. ENVIRONMENTAL MANAGEMENT SYSTEM

The CONTRACTOR will implement the Clough Environmental Management System (EMS) to achieve Environmental excellence as part of an integrated element of the overarching

CONTRACTOR HSEQ Management System for the Project. The Clough EMS is certified to AS/NZS ISO 14001 'Environmental Management Systems - Requirements with Guidance for Use' and sits within the overarching Clough Management System (CMS) and is defined within the Clough HSSE Management Manual (CORP-HSE-MN-G-0001). The Clough EMS and procedures included therein will become the overarching framework adhered to throughout implementation of the CEMP and will be adopted as the CONTRACTOR Environmental Management System/Procedures for the purpose of this project.

The EMS establishes common processes and systems that enable it to operate successfully within various legislative and statutory jurisdictions whilst achieving best practice. Through implementation of the EMS, the CONTRACTOR shall undertake all work effectively and consistently, and in accordance with the OWNER and Statutory requirements.

The CONTRACTOR Environmental Procedures specifically relate to environmental management and are externally certified to AS/NZS ISO 14001:2015. The CMS hierarchical approach to Environmental process is shown in Figure 6-1 below.

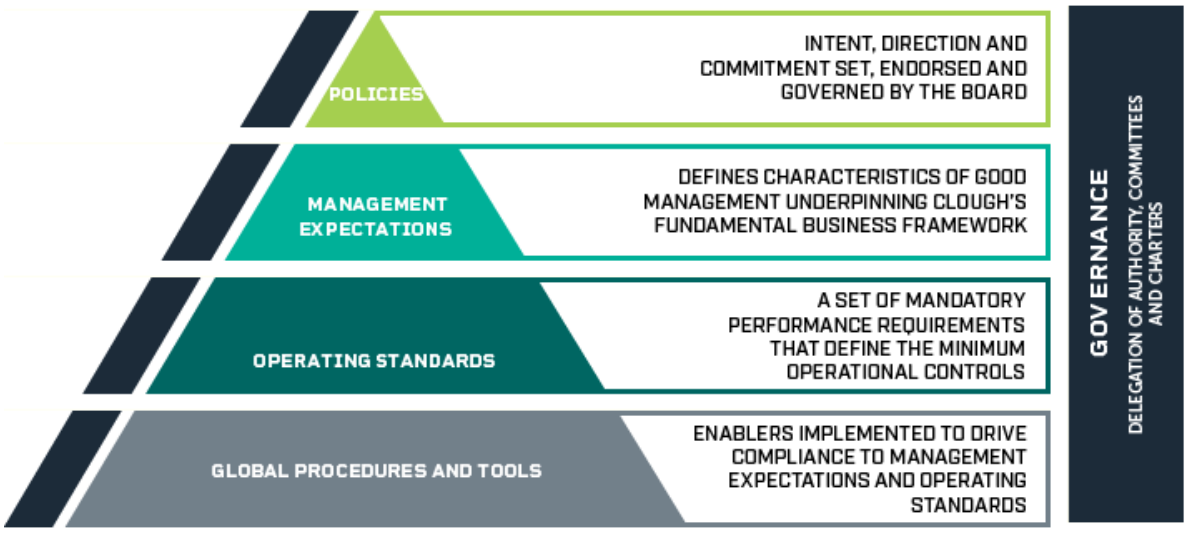

Figure 6-1 CMS Hierarchy

6.1 System Documentation & Records Management

All Environmental documentation generated on the Project, whether hard copy or electronic, will be controlled in accordance with the Project Controls Operating Standard (CORP-PC-OS-G-0003) and Project Quality Assurance and Control Operating Standard (CORP-QM-OS-G-0002) as part of the Clough Environmental Procedures; referred to within this CEMP as the CONTRACTOR Environmental Procedures for the implementation of this project. Environmental documentation and data will be:

- Kept as objective evidence of compliance with environmental requirements.
- Made available to the OWNER representative within 24 hours of request.

7. ENVIRONMENTAL POLICY

An Environmental Policy specific to the Project has been developed by the CONTRACTOR and is presented in Appendix B.

The CONTRACTOR will communicate the policy and commitments to all Project personnel, including subcontractors, to ensure provision of an environmentally safe workplace.

Specific actions relating to communication of the Environmental Policy are outlined in Table 7-1 below.

Table 7-1 Environmental Policy Communication

What	Who	When / how
Communicate Environmental Policy to CONTRACTOR employees	CONTRACTOR Project Manager CONTRACTOR Construction Manager CONTRACTOR Environmental Lead CONTRACTOR Project Environmental Advisors	Project induction On display at CONTRACTOR managed work sites Project training presentation
Communicate Environmental policies to SUBCONTRACTORS	CONTRACTOR Project Manager CONTRACTOR Construction Manager CONTRACTOR HSSE Manager CONTRACTOR Project Environmental Lead CONTRACTOR Project Environmental Advisor	Prior to commencement of operations
Apply CONTRACTOR policies to all activities	All staff	At all times

8. ENVIRONMENTAL MANAGEMENT PERFORMANCE

8.1 Environmental Objectives & Targets & KPI's

The CONTRACTOR is committed to achieving continual improvement in its environmental performance through the selection of Key Performance Indicators (KPI's) and setting of objectives and targets. Each KPI is consistent with the Environment Policy, legislative requirements, environmental approvals and conditions and the OWNER requirements.

Progress towards meeting the KPI's will be monitored and reported monthly, as part of the Monthly Environmental Reporting (see Section 18) and will also be monitored during audits and the Management Review (see Section 16 & 16). Where appropriate, the achievement of KPI's may also be incorporated into individual personal accountability and performance appraisals.

The HSSE Manager, or delegate (i.e. Environmental Lead) will ensure that environmental performance against the defined objectives, targets and KPIs are monitored, reported and communicated.

The Construction Managers will be responsible for supporting the implementation of all targets and objectives on the Project.

Project specific environmental objectives and targets based upon identified environmental risks associated with the scope of works during construction are presented in Table 8-1. This Table includes both the CONTRACTOR and the OWNER Objectives & Targets to ensure that the Project team measure performance against both requirements.

The Project's objectives aim to minimise or avoid the environmental impacts associated with the proposed works.

8.2 Outcome Based Performance

The Ministerial Statement for the Project (MS 1180) provides for outcomes to be achieved for each relevant environmental factor to the Project. In accordance with the statement (MS 1180), the OWNER has developed factor specific Management Plans to meet the requirements within the stated conditions (i.e., Confirmed Flora Management Plan).

A list of the plans developed for compliance to the MS 1180 is presented in section 12 .Each of these "Confirmed Plans" will set out provisions for monitoring and evaluating specific measurable Outcomes that will be typically driven by trigger and threshold criteria. In addition, several of these "Confirmed Plans" will include Management Actions and Targets, relating to the Environmental Protection Authority objectives.

Based on this comprehensive monitoring approach to evaluating performance of the Project against the specific EPA driven environmental outcomes, the CONTRACTOR have prepared stand-alone Management Sub-Plans (Refer to section 12) that will demonstrate the manner in which the construction team will apply and manage the implementation of these "Confirmed Plans" and associated performance provisions. All Management Sub-Plans have been provided as Attachments to this CEMP and are further detailed in Section 12.

Table 8-1 Objectives, Targets & KPI's

Objectives	Targets (must be measurable)		Management Programs (How these targets will be achieved)	Relevant Management Section
	Indicator	Target		
Prevent unplanned impacts to the environment	Environmental incidents resulting in a measurable environmental impact	Zero incidents	Risk Management Incident Reporting Audits and Inspections	Refer to Section 17 Refer to Section 18
To ensure that work is performed in accordance with this Environmental Management System.	Timely reporting of incidents Close out of Actions from Incident Investigations, Inspections and Observations	100% reporting as required 100% within agreed timeframes	Incident Reporting Audits and Inspections	Refer to Section 17 Refer to Section 18
Avoid discharge of contaminated stormwater / discharge water off site.	Incident resulting in measurable discharge of contaminated water leaving site. Timely reporting of incidents	Zero emission of contaminated stormwater / discharge water from site.	Incident Reporting Audits and Inspections Management Protocols Confirmed Surface Water Management Plan	Refer to Section 17 Refer to Section 18 **Confirmed Surface Water Management Plan** Attachment A –Water Quality Erosion & Sediment Control Management Sub-Plan
Minimise erosion within Project area and avoid off	Incident resulting in measurable / visual	Any on site erosion is to not impact traffic and	Incident Reporting Audits and Inspections	Refer to Section 17 Refer to Section 18

Objectives	Targets (must be measurable)		Management Programs (How these targets will be achieved)	Relevant Management Section
	Indicator	Target		
site erosion associated with the Project Works.	impacts to environment, soil and nearby waterways for associated erosion and sedimentation.	pedestrian movement or Works in any way. All off site discharge of storm water to be controlled to avoid offsite erosion.	Erosion, Sediment and Surface Water Management Protocols Erosion and Sediment Control Plan (To be developed when applying for GDP)	Attachment A –Water Quality Erosion & Sediment Control Management Sub-Plan
Minimise impact on native vegetation.	Inspections, observations and audits Incidents resulting in loss of native flora species and/or vegetation. Incidents resulting in vegetation being affected by the spread of weed species.	Maintain clearing within the clearing boundary to a minimum and only clear area essential for Works. Ensure Clearing permits in place Ensure GDP in place.	Incident Reporting Audits and Inspections Management Protocols Confirmed Flora Management Plan	Refer to Section 17 Refer to Section 18 Attachment B –Flora & Vegetation Management Sub-Plan
Minimise impact on native fauna.	Inspections, observations and audits Incidents resulting in loss, injury, displacement of native fauna Habitat destruction	Zero native fauna deaths directly associated with project Works / activities.	Incident Reporting Audits and Inspections Native Fauna Management Protocols Confirmed Threatened Species Management Plan Confirmed Fauna	Refer to Section 17 Refer to Section 18 Attachment C –Native Fauna Management Sub-Plan See reference in Section 5.7

Objectives	Targets (must be measurable)		Management Programs (How these targets will be achieved)	Relevant Management Section
	Indicator	**Target**		
			Management Plan	
Manage the risk of uncontrolled fire within the Project areas.	Inspections, observations and audits Incidents Vegetation loss following fire	Zero uncontrolled fires started within the Project area and/or associated with Project works.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Fire Management Protocol – Appendix G
Avoid any release of hydrocarbons, hazardous substances and other contaminants to ground or waterways.	Inspections, observations and audits Incidents Contamination of soils or waterways	Zero spills to any waterways Zero spills in quantities greater than 50L to ground.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Appendix F – Hydrocarbons & Hazardous Substances Management Protocol
Minimise dust emissions from the Project areas	Inspections, observations and audits Incidents Complaints	Zero community complaints related to verified dust emissions from the Project.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Appendix J – Air Quality Management Protocol
Minimise air emissions during commissioning.	Inspections, observations and audits Incidents	Keep gas emissions below the Project's approval condition	Incident Reporting Audits and Inspections Air Quality Management	Refer to Section 17 Refer to Section 18 See MP references in

Objectives	Targets (must be measurable)		Management Programs (How these targets will be achieved)	Relevant Management Section
	Indicator	**Target**		
	Fines, penalties from regulator	levels.	Protocols Confirmed GHG Management Plan Rock Art Monitoring Strategy	Section 12
Minimise construction noise.	Inspections, observations and audits Incidents	Zero community or personnel noise complaints.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Appendix K – Noise Management Protocol
Avoid impacting any protected heritage areas.	Inspections, observations and audits Incidents Poor relations with MAC	Zero impact on any protected heritage areas.	Incident Reporting Audits and Inspections Heritage Management Protocols Confirmed Cultural Heritage Management Plan.	Refer to Section 17 Refer to Section 18 Attachment D – Heritage Management Sub-Plan
Minimise solid waste from packaging into landfill.	Inspections, observations and audits Incidents	Segregate recyclable and non-recyclable wastes on site prior to removal to corresponding facilities.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Attachment F - Solid Liquid Waste Management Sub-Plan
All liquid waste generated on site during construction is to be removed by a licensed	Inspections, observations and audits Incidents	All liquid waste removed will have waste tracking forms and volumes	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Attachment F - Solid

Objectives	Targets (must be measurable)		Management Programs (How these targets will be achieved)	Relevant Management Section
	Indicator	Target		
controlled waste carrier.		reported monthly.		Liquid Waste Management Sub-Plan
Minimise impact of acid sulfate soils uncovered during Works.	Inspections, observations and audits Incidents	Zero impact from acid sulfate soils on site. No acid drainage plumes off site.	Incident Reporting Audits and Inspections Management Protocols	Refer to Section 17 Refer to Section 18 Appendix L – Acid Sulfate Soils Management Protocol
Potential environmental risks/ impacts are identified, and provisions are made for their prevention, minimisation and management.	Environmental Risk Register has been developed and the OWNER has had an opportunity to review	Prior to mobilisation	Legal and Other Requirements Risk Management	Refer to Section 3 Refer to Section 5 Refer to Section 10 Refer to Appendix C
To ensure that Project personnel are aware of and able to achieve their environmental targets through appropriate training and awareness programs.	Inductions completed	100%	Environmental and Heritage Induction	Refer to Section 14
	Training completed as per training analysis	100%	Training Needs Analysis & Management	Refer to Section 14
	Environmental awareness topics delivered to work group in toolbox sessions	1 environmental topic per month (minimum)	Environmental Awareness program	Refer to Section 14
To maintain and improve the CEMP and associated management plans	CEMS, CEMPs and Sub-management Plans review. Audits and Inspections	On schedule Actual versus scheduled >90%	Incident Investigation Audits and Inspections	Refer to Section 17 Refer to Section 18

Objectives	**Targets (must be measurable)**		**Management Programs (How these targets will be achieved)**	**Relevant Management Section**
	Indicator	**Target**		
To demonstrate the environmental objectives are met.				
To comply with the objectives associated with the PPA EMP for 2021 – 2022 where these apply to the construction activities being carried out by the CONTRACTOR.	Incidents and / or non-conformances associated with Port Works and specific to the PPA requirements. Audits and Inspections, Complaints and incidents.	100% compliance with PPA EMP and requirements.	Incident Investigation Audits and Inspections CEMP	Refer to Section 17 Refer to Section 18

9. ORGANISATIONAL STRUCTURE, ROLES & RESPONSIBILITIES

9.1 Organisational Structure

The key Project roles relating to site activity (construction) are shown in the organisation chart included in Appendix D – Project Organisational Charts. The roles and responsibilities are summarised below.

9.2 CONTRACTOR Roles & Responsibilities

Authorities and responsibilities for all positions are defined and communicated to personnel within job descriptions and project documentation where necessary.

The CONTRACTOR will nominate a HSSE Manager who will directly report to the CONTRACTOR Project Manager and has defined authority and responsibility for implementing the environmental management system operated by the CONTRACTOR in accordance with AS/NZS ISO 14001:2015.

While management of the environment is the responsibility of every employee and subcontractor, the Project Manager has the ultimate responsibility for the management of Environmental issues for the Project construction works.

The CONTRACTOR recognise that visible leadership is a key element to successful environmental management. The Management Team will demonstrate commitment to the principles expressed in the CONTRACTOR Policy for Environment (Appendix B – Environmental Policy) and the expectations for environmental leadership and accountability defined by the CONTRACTOR Environment Management Operating Standard (CORP-HSE-OS-G-0004).

The objectives and targets defined in this document will be demonstrated and met by:

- Delivering a series of leadership engagement and alignment sessions to set project environmental management expectations and ensure that all site personnel are aligned around a common vision and set of objectives.
- Ensuring decisions and practices are aligned with the principles and objectives outlined in the Policy for Environment.
- Ensuring the management team meets on a scheduled basis and provides direction and insight toward achieving a Target Zero Project.
- Providing adequate resources, including personnel, facilities and equipment, to allow all work associated with the Projects to be completed while minimising environmental harm.
- Defining, documenting and communicating specific environmental roles, accountabilities, responsibilities and authorities.
- Participating in environmental audit activities, incident reporting and investigations.
- Identifying, assessing and adequately controlling all foreseeable hazards using risk management processes such as hazard identification (HAZID) workshops, constructability reviews, and Major Hazard Bow Tie Analysis.
- Carrying out remedial action promptly for all identified hazards to reduce the risk of any adverse impact to the environment.

- Ensuring all CONTRACTOR employees, subcontractor personnel and visitors comply with the requirements of the CONTRACTOR EMS (Formerly Clough EMS), Project CEMP, Project Environmental Management Plan (PEMP), Confirmed Environmental Management Plans, Environmental Approvals, the OWNER and legislative requirements.
- Ensuring that environment meetings are conducted and that relevant personnel attend.
- Ensuring emergency response exercises are undertaken in accordance with the Emergency Preparedness & Response Management Plan (EPRMP), the Health, Safety, Security and Environmental Management Plan (0000-ZA-E-09700) and the PEMP.
- Ensuring worksites are regularly visited by senior management from the CONTRACTOR and the outcomes of management visits are recorded in “InControl”.

All personnel undertaking Project Works on site have the following responsibilities:

- Attend a Project Environmental Induction prior to commencing any work on site.
- Ensure they are aware of the Projects environmental requirements as stipulated in the most current version of this CEMP and all supporting documents.
- Report any environmental hazards, incidents, near misses and community complaints to their supervisor.

An overview of the key CONTRACTOR environmental roles and responsibilities throughout project delivery are outlined in the Sections below and represented in Appendix D of this Plan.

9.3 Project Director

The CONTRACTOR Project Director shall be responsible for and shall have authority to:

- Be an emergency contact and available to be contacted by the OWNER’s senior representatives.
- Endorse and support the Global Health & Safety, Security and Environment Policy and this CEMP.
- Provide environmental leadership and ensure adequate resources are provided to effectively implement this CEMP.

9.3.1 Project Manager

The CONTRACTOR Project Manager is accountable for implementation of the CEMP on site. Responsibilities include:

- Ensuring that the requirements of the CEMP are implemented, maintained and communicated.
- Provide environmental leadership and ensure adequate resources are provided to effectively implement this CEMP.
- Participate in investigation of incidents and non-conformances and CEMP reviews.
- Ensure work is planned and executed to ensure compliance with environmental requirements.

9.3.2 HSSE Manager

The CONTRACTOR HSSE Manager is a site based Environmental Representative of the joint venture who has the authority and responsibility for reporting the implementation, compliance and effectiveness of the CEMP to the Management Team. The CONTRACTOR Site HSSE Manager shall:

- Be the formal emergency contact and available to be contacted by the OWNER's senior representatives.
- Communicate the requirements of the CEMP to site personnel.
- Provide documentation and support to construction managers and supervisors.
- Ensure project inductions are undertaken as per the CEMP.
- Review and monitor corrective and preventative actions resulting from audits, incidents and non-conformances.
- Ensure identified risks are analysed and evaluated according to agreed criteria. Regularly review identified risks and controls and maintain a risk register.
- Oversee the implementation and management of the Ground Disturbance Permit (GDP) process.
- Ensure regular inspections, observations, monitoring and audits are conducted to check the effectiveness of controls and that compliance is maintained.
- Review Subcontractors' performance and compliance with site environmental requirements.
- Lead investigation and reporting of environmental incidents, non-conformances and response to complaints.
- Responsible for liaising with the Heritage and Indigenous Relations Manager regarding social grievances specific to heritage values or consultation with MAC and Traditional Owners.
- Inform the OWNER's Environment & Heritage Manager of any non-conformances, environmental incidents or public complaints and assist with regulator liaison, if required.
- Identify and implement corrective and preventative actions after incidents and share lessons learned within the Project team.
- Manage the submission and attainment of additional environmental approvals as per agreement with the OWNER.
- Prepare a monthly Project environment report, presenting an update on key performance indicators, project outcomes, issues and incidents.
- Oversee review of existing and preparation of additional environmental management documentation, as required, such as environmental management protocols for high risk activities.
- Oversee the preparation and review of any Part V Environmental Works Approvals and Licenses required.
- Assure construction personnel's management of construction Works are in accordance with statutory, approval and Contract environmental requirements.
- Attend and participate in regular project meetings.
- Ensure compliance and adherence to CEMP through tools such as audits – internal / external and periodic reviews (see Sections 16, 18 and 19).
- The HSSE Manager has the authority to delegate any of his/her responsibilities to a qualified team member, including another CONTRACTOR Environmental Representative.

9.3.3 HSSE Deputy Manager

The CONTRACTOR HSSE Deputy Manager is a site based Environmental Representative of the joint venture who has the authority and responsibility for supporting the CONTRACTOR HSSE Manager with reporting the implementation, compliance and effectiveness of the CEMP. The CONTRACTOR Site HSSE Deputy Manager shall:

- Be an emergency contact and available to be contacted by the OWNER's senior representatives.
- Support the HSSE Manager in communicating the requirements of the CEMP to site personnel as required.
- Provide documentation and support to construction managers and supervisors.
- Ensure project inductions are undertaken as per the CEMP.
- Review and monitor corrective and preventative actions resulting from audits, incidents and non-conformances.
- Support the HSSE Manager with analysing and evaluating any identified risks according to agreed criteria. Regularly review identified risks and controls and maintain a risk register in consultation with HSSE Manager as required.
- Support the HSSE Manager in overseeing the implementation and management of the Ground Disturbance Permit (GDP) process.
- Support the HSSE Manager in ensuring that the Environmental Team are conducting regular environmental inspections, observations, monitoring and audits are conducted to check the effectiveness of controls and that compliance is maintained.
- Review Subcontractors' performance and compliance with site environmental requirements.
- Assist the HSSE Manager with investigation and reporting of environmental incidents, non-conformances and response to complaints. Where required take the lead in investigations at request of the HSSE Manager.
- Support the HSSE Manager in liaising with the Heritage and Indigenous Relations Manager regarding social grievances specific to heritage values or consultation with MAC and Traditional Owners.
- Identify and implement corrective and preventative actions after incidents and share lessons learned within the Project team.
- Support the HSSE Manager in managing the submission and attainment of additional environmental approvals (i.e., Part V) as per agreement with the OWNER.
- Support the HSSE Manager by preparing data and the monthly Project environment report (as required), presenting an update on key performance indicators, project outcomes, issues and incidents.
- Consult with Environmental Lead as required to carry out any responsibilities or duties assigned to the HSSE Deputy Manager.
- Support the HSSE Manager and the Environmental Lead to review existing and preparation of additional environmental management documentation, as required, such as environmental management protocols, management plans and monitoring schedules for high risk activities.
- Assure construction personnel's management of construction Works are in accordance with statutory, approval and Contract environmental requirements.
- Attend and participate in regular project meetings with the HSSE Manager as required.
- Ensure compliance and adherence to CEMP through tools such as audits – internal / external and periodic reviews (see Sections 16, 18 and 19).

- The HSSE Deputy Manager will work closely with the HSSE Manager and the Environmental Lead to ensure the implementation of this CEMP and supporting plans, onsite environmental management and the Project environmental compliance requirements are identified, communicated, monitored and reported throughout the Project.

9.3.4 Environmental Lead

The CONTRACTOR Environment Lead is a site based Environmental Representative of the joint venture responsible for:

- Coordination of the Ground Disturbance Permit (GDP) process on site including preparing GDPs in consultation with the relevant Construction Manager, issuing and releasing GDPs, verifying clearing boundaries, monitoring clearing works, and closing out GDP permits.
- Presenting Project environmental inductions to all CONTRACTOR site personnel and Subcontractor Environmental Advisors.
- Conduct regular inspections and audits in accordance with this CEMP.
- Consolidate data provided by Subcontractors in their Monthly Environmental Report into a single summary report.
- Verify rehabilitation works have been completed in accordance with the Rehabilitation Management Protocol.
- Provide environmental advice and information to the Project management teams.
- Support the HSSE Manager with environmental incident investigations.
- Providing advice to the HSSE Manager about implementing, maintaining and reviewing this CEMP and associated documents.
- Fulfilling and supporting the responsibilities of the HSSE Manager when they are on leave from site or as required at the HSSE Managers request.
- Provide environmental leadership and support to the CONTRACTOR Environmental Advisor.

9.3.5 Environmental Advisor

The CONTRACTOR Environmental Advisor is a site based Environmental Representative for the Joint Venture responsible for:

- Providing support to the Environmental Lead in performing the day to day activities and duties required by the Environmental Team.
- Providing advice to the construction team during activities with environmental risks.
- Assisting with environmental toolboxes and Project inductions as required.
- Supporting the Environmental Lead with monitoring requirements (including daily, weekly & monthly environmental inspections)
- Supporting the Environmental Lead with collating and analysing monitoring data and reporting requirements for the Project.
- Supporting the Environmental Lead with non-conformance and corrective action recording, reviewing and close-out.
- Attending daily pre-starts to provide environmental input or advice where high-risk activities are being carried out (i.e. trenching, clearing etc) or where daily weather events may impact works (i.e. heavy rains, high winds).
- Assist and support the Environmental Lead with collecting and auditing the Sub-contractor environmental inspections and associated non-conformances.

- Support the sub-contractors by collating their environmental data from internal and external reporting requirements.

9.3.6 Heritage & Indigenous Relations Manager

The CONTRACTOR Heritage & Indigenous Relations Manager reports to the Project Director and the following responsibilities that intersect with environmental management during construction:

- Consulting and liaising with the OWNER, MAC and Traditional Owners in regard to approvals and heritage matters during construction.
- Extending official invitation to Traditional Owners to be present for ground disturbing activities specified within the MS 1180 Conditions. (i.e. Condition 4-7 (3) and 9-2 (4))
- Providing advice to the HSSE Manager regarding heritage issues and concerns directly related to environmental scope (i.e. fauna, flora and vegetation, emissions etc).
- Consulting with the HSSE Manager in regard to heritage management requirements and monitoring of heritage sites as required by the OWNER, MAC, environmental approvals or section 18 consent conditions.
- Providing cultural awareness and inductions on heritage values within and surrounding the Project.

9.3.7 Construction Manager

The CONTRACTOR Construction Managers are accountable for implementation of the CEMP on site. Their responsibilities include:

- Planning construction Works in a manner that avoids or minimises impact to environment in line with this CEMP.
- Ensuring a GDP application is submitted, and a GDP Permit is issued in a timely manner prior to the commencement of any ground disturbing works or activities being undertaken.
- Ensuring any ground disturbing works or activities undertaken are within the limits specified in the Works specific GDP.
- Providing environmental leadership and ensuring adequate resources are allocated to effectively implement this CEMP.
- Stopping all work immediately if an unacceptable impact on the environment is likely to or has occurred.
- Ensuring that the appropriate level of induction and training has been provided to all site staff to minimise environmental impacts from Project works.

9.3.8 Construction Superintendent

The CONTRACTOR Construction Superintendent is responsible for:

- Incorporating the requirements of this CEMP into project specific procedures, including SWMS's, JHA's, and toolbox meetings.
- Implement appropriate actions to address any environmental incidents.
- Ensure suppliers and Subcontractors comply with environmental requirements;
- Stopping all work immediately if an unacceptable impact on the environment is likely to or has occurred.
- Regularly liaise with the Construction Manager and Environmental Representatives regarding environmental aspects and impacts.

9.3.9 Construction Supervisor

The CONTRACTOR Construction Supervisor is responsible for:

- Ensuring appropriate mitigation and management measures are implemented and maintained on site.
- Ensuring regular inspections and monitoring requirements are undertaken to check effectiveness of environmental controls.
- Reporting environmental hazards, incidents, near misses and community complaints immediately to a site Environmental Representative.
- Implementing appropriate actions to address any environmental incidents or non-conformances.
- Regularly liaise with the Construction Superintendent and Environmental Representatives regarding environmental aspects and impacts.

9.3.10 Environmental Representatives

Any qualified personnel working within the HSSE Team for the Joint Venture acts as a site-based Environmental Representative for the CONTRACTOR. These may include; HSSE Manager, HSSE Deputy Manager, H&S Advisors, Environmental Lead and Environmental Advisors.

The CONTRACTOR Environmental Representatives coordinate the management of environmental requirements within this CEMP, its supporting documentation or other environmental requirements for the Project and relative to the Joint Ventures scope of works.

The CONTRACTOR Environmental Representatives may be required to represent the environmental team during consultation with the OWNER's Environmental & Heritage Manager.

The OWNERs Environment & Heritage Manager will act as a site Environmental Representative for the OWNER (see Section 9).

A Subcontractor engaged by the CONTRACTOR, who has an Environmental Advisor or HSSE Advisor or equivalent, will act as an Environmental Representative for the Subcontractor (see Section 9).

9.3.11 Community and Stakeholder Engagement Manager

The CONTRACTOR Community and Stakeholder Engagement Manager reports to the Project Director and the following responsibilities that intersect with environmental management during construction:

- Accountable for the overall implementation of the communications across all focus areas.
- Sets the strategic direction for communications and engagement across the lifecycle of the Project, including early, enabling and main works.
- Develops a proactive and multi-faceted approach to engage and empower the community and stakeholders along Project alignment throughout the life cycle of the Project.
- Manages communications and engagement programs, including processes and collateral.

- Actively identify local business and employment opportunities and drive local content on the Project.
- Oversees management and maintenance of stakeholder database and reporting requirements.

9.4 Sub-Contractor Resourcing & Responsibilities

Any subcontractors engaged by the CONTRACTOR shall provide adequate, tertiary qualified (in environmental management or similar qualification) and experienced site-based personnel on site to coordinate the management of environmental issues for the Project, relative to their scope of Works. These persons engaged by the subcontractor to carry out environmental responsibilities, will act as an Environmental Representative for the Sub-contractor.

The Subcontractor shall demonstrate that responsibility for achieving sound environmental outcomes rests with senior Project and construction management personnel with support from a suitably qualified Subcontractor Environmental Advisor. Prior to mobilisation, an organisation chart and position responsibilities shall be provided as part of the Subcontractor's Environmental Management Plan.

The environmental performance of subcontractors will be monitored during site inspections, and they will also be required to partake in the environmental inductions for the Project.

Subcontractor inspection data will be collected by a CONTRACTOR Environmental Representative to include in internal CONTRACTOR and external (OWNER & Regulatory) reporting.

9.5 Owner Environment & Heritage Manager

The OWNER is responsible for engaging a OWNER based Environment & Heritage Manager or equivalent. In accordance with the OWNER PEMP, the Environment & Heritage Manager will act as a site based Environmental Representative for the OWNER. The Environment & Heritage Manager has the authority and responsibility of overseeing and reporting the implementation, compliance and effectiveness of the OWNER PEMP to the OWNER Senior management team.

The Environment & Heritage Manager will liaise with the CONTRACTOR Environmental Representatives, including the HSSE Manager, Deputy Manager, Environmental Lead and the Environmental Advisors to ensure implementation, management and compliance of all Project environmental documentation (CEMP, PEMP and Confirmed Management Plans) and environmental approval conditions is being achieved during the Project construction works.

The Environment & Heritage Manager will attend the Project meetings with the CONTRACTOR senior management team during construction (i.e., Project Manager, HSSE Manager, HSSE Deputy Manager, Environmental Lead) to ensure environmental issues and risks are communicated, captured and addressed.

The OWNER Environment & Heritage Manager will be responsible for overseeing and assuring that Project activities being carried out by the CONTRACTOR team are in accordance with statutory, approval and Project environmental & heritage requirements.

10. ENVIRONMENTAL RISK IDENTIFICATION & MANAGEMENT

10.1 Environmental Risks, Aspects and Impacts Register

The environmental Risks, Aspects and Impacts Register is the foundation on which management and continual improvement reviews are based. During the Project construction phase this register will include relevant environmental opportunities. The Register is a product of several factors, some of which are discussed below in Sections 10.2 through to 10.9.

Each environmental risk consists of an environmental aspect or activity and the potential impact related to construction.

- An aspect is defined as a service or activity under the CONTRACTOR's scope of works and control that may or will interact with the environment.
- An impact is defined as any potential change to the environment, either directly or indirectly resulting from the services and activities under the CONTRACTOR scope of works and control.
- An opportunity is defined as a beneficial impact or effect that the CONTRACTOR may have on the environment values within or surrounding the PDE, based on their services or activities being conducted during construction.

The approach to risk identification and management is described below and has been adopted from the CONTRACTOR CEMS. The Risks, Aspects & Impacts Register is an environmental and heritage-based register and does not consider safety or health impacts. The Sections below, however, do summarise a holistic HSSE approach of risk identification and assessment, as it reflects the CONTRACTOR HSSE system.

10.2 Risk Identification

The CONTRACTOR approach to risk identification and management is risk-based, systematic and responsive to change. Project relevant environmental aspects have been identified through the review of relevant legislation, environmental documents, surveys, impact assessments and the documentation associated with the EP Act Part IV assessment.

Environmental risks (Major Accident Event Hazards) are specific to the environmental setting of the Project and the construction SOW. The review process of environmental risk is identified and included within the Project risk assessment process - Major Accident Prevention Program and Hazard Assessment. The reviews will include an assessment of the current environmental aspects located at and adjacent to the Project to determine a risk

rating and the required mitigation measures. Refer to HSSE Risk Management Procedure (0000-ZA-E-02942).

The objective of the risk review and control measures is to eliminate or reduce residual hazards and risks to as low as reasonably practicable (ALARP). Risk evaluations will include discussion of State and Federal requirements regarding environmental aspects while controls will incorporate requirements of relevant legislation, standards and codes of practice provides a summary of the construction risks, impacts and applicable management measures to mitigate the risks relevant to environmental issues.

The Project risk and hazard management processes will be evaluated for effectiveness by the CONTRACTOR using the CONTRACTOR Assurance Procedure (CORP-RA-PR-G-0003) and Project specific audits, reviews and inspections.

All Environmental hazard analysis processes are based on ISO 31000:2009 Australian Standard Risk Management, including steps to:

- Define the scope to be assessed;
- Identify Hazards and current controls;
- Assess the risks;
- Plan and implement control strategies;
- Review and monitor the effectiveness of control strategies.

A guide to the CONTRACTOR risk management process, purpose, methodologies used and the stage in the Project lifecycle to which they apply is provided in Appendix C of this Plan.

10.3 Hazard Management

Aspects, impacts and opportunities are investigated during the risk assessment (refer to 10.1 for definition of these relating to the CONTRACTOR). The Risk Assessment, Aspects & Impacts Register specific to the construction activities being carried out by the CONTRACTOR is included within of this Plan. This register will be updated regularly and will be updated following receipt of environmental Conditions included within the Ministerial Statement (pending). The register will also be updated prior to mobilisation and as the construction sub-contractors and methodologies are further refined.

For the higher risk aspects that have been identified through the environmental approval assessment process and the CONTRACTOR risk identification process, a stand-alone Management Sub-Plan (e.g., Flora & Vegetation Management Plan) has been prepared by the CONTRACTOR that complies with the applicable “Confirmed Environmental Management Plans” issued by the OWNER and approved by the EPA.

Medium and Lower Risk items have been addressed in Management Protocols, to ensure compliance with the OWNER Management Plan Framework and the OWNER management

Protocols communicated within the PEMP. Section 12 provides further context and details in relation to management of the identified risks for the construction works. Management measures for potential risks and related impact have been summarised in Appendix C of this Plan.

10.4 Risk Assessment Competency

All team-based risk assessments will be conducted by a Project team, led by a facilitator who is competent in the risk management assessment method.

All personnel who undertake field work will be trained to undertake Job Hazard Analyses and Take 5 risk assessments in regard to environmental aspects on-site and specific to their work activities.

10.5 Major Accident Prevention

The CONTRACTOR Major Accident Prevention (MAP) Program will be implemented on the Project to ensure that all Major Accident Event (MAE) Hazards associated with the Project Areas are identified and controlled in accordance with the MAE Hazard Management Procedure (0000-ZA-E-02941).

MAEs are those events which have the potential to result in major or catastrophic consequences as defined in the CONTRACTOR HSSE Risk Matrix (0000-ZA-E-02990), such as contaminating a protected ecological community (PEC) adjacent to site.

The MAP Program provides a structured and systematic approach to the identification of MAE Hazards, the communication and implementation of Mandatory Controls that prevent MAEs and protect personnel from the consequences of them, as well as the monitoring and verification of the implementation of those Mandatory Controls on the Projects.

During the planning phase, the CONTRACTOR MAE Hazards are reviewed to determine those applicable to the activities which make up the CONTRACTOR Scope of Works. These MAE Hazards are recorded in the Project Major Hazard Profile and included in the Risk and Opportunity Register (TBD).

10.6 Hazard Assessment – Project Planning Phase

The Project hazard profile is reviewed and updated where necessary to accurately reflect the current Works included in the Project Scope. The HSSE Manager, HSSE Deputy Manager or Environmental Lead may also identify additional environmental risk assessments to be completed for the Project in preparation for execution. The nominated risk assessments are included in the HSSE Project deliverables and are described below.

10.6.1 Project Map Register

The CONTRACTOR MAE Project Assurance Register Template (CORP-HSE-TPL-G-0034) will be developed and approved for the Project during the Project planning phase in

accordance with the MAE Hazard Management Procedure (0000-ZA-E-02941). The MAP Register is a project specific document that records:

- Each of the MAE Hazards applicable to the Project scope of work
- The preventive and mitigating Mandatory Controls applicable to each MAE Hazard
- The assurance and verification checks that will be conducted on the Project for each Mandatory Control
- The project specific document references that define the requirements for each Mandatory Control.

Once the MAP Register and project targets for the conduct of MAE Verification Checks are approved, MAE Verification Check Template (CORP-HSE-TPL-G-0035) will be prepared for use in the field during the execution phase.

10.6.2 Managing Design Environmental Risks

Environmental risks arising from design and engineering of plant are managed in accordance with the Safety in Design Management Procedure (CORP-ENG-PR-G-0023). The Project HSSE Manager, or nominated delegate will define the assessments to be conducted for the Project scope which should include:

- HAZOP
- HAZID for design
- Constructability, Operability, Maintainability reviews.

The CONTRACTOR's Project Environmental professionals will participate in the assessment workshops or as a minimum review the risk analysis and controls with the engineering lead to identify hazards and controls to be carried into the field execution phase of the Project. The identified environmental hazards and controls to be carried into the field execution phase of the Project will be documented in the Project Hazard Register and incorporated into the Project execution phase CEMPs and Sub-management Plans, as applicable.

10.6.3 Hazard Identification Workshops

HAZID workshops will be conducted for all high-risk activities and will include environmental aspects and impacts. HAZID workshops will be coordinated and facilitated by a member of the CONTRACTOR HSSE Team, and personnel from each relevant Project function will be present (HSSE HAZID Work Instruction 0000-ZA-E-02928).

HAZID workshops will address particular elements of the scope of work, and will typically be arranged as follows:

- Project HAZID to review and identify high level Project HSSE risks.
- Construction Package Risk Assessment, assessing a particular package or method statement.
- Subcontractor Risk Assessment, assessing the scope of work allocated to a subcontractor.

Each HAZID workshop will identify hazards, control actions and person(s) responsible for close out of the actions and document these in the Project Hazard Register. The actions will be closed out prior to the works commencing (HSSE HAZID Work Instruction 0000-ZA-E-02928) and identified controls will be included in all applicable project procedures, engineering documentation or work method statements.

No work except emergency response activities will commence without suitable and sufficient documented hazard identification and risk assessment processes being completed.

10.6.4 Location / Threat Specific Hazard Assessments

Threat specific environmental hazard assessments are conducted where the residual risk of an activity, location or environment is high or very high (e.g., conservation significant flora, fauna or habitat including EPBC listed species).

These assessments will take into consideration the output of Environmental Baseline Surveys, Environmental Review Documents and Public comments, risk items discussed through the approvals, permitting, licensing and consent process relevant to the Project and the associated Environmental Management Plans.

Sub-management Plans will be developed for all threatening environmental aspects (as discussed in Section 10.2), however, the requirement to develop Sub-management Plans to mitigate environmental risks through specific controls are also proposed in Project plans, investigations, environmental approvals / licenses and the Basis of Design document.

During the planning phase of the Project or where a development arises in the SOW, the Site Manager will, in consultation with the HSSE team, identify threat specific HSSE hazard assessments and management measures to be carried out and documented. For the Project, these specific environmental hazard assessments should include:

- OWNER Environmental Review Document
- EPA Report
- Environmental Investigation or survey, and / or
- Sub-management Plan.

10.7 ENVID Workshop

The CONTRACTOR will undertake a Project Specific Environmental Identification Summary (ENVID) Workshop to identify and then evaluate the potential environmental risks associated with the construction phase prior to mobilisation and following the construction team refining and identifying the construction methodologies and program for the Project. The CONTRACTOR have implemented the ENVID process due to the complexity of the Project and associated Project approvals and licenses.

The ENVID will allow identification of the following:

- Potential environmental fatal flaws (unacceptable environmental risks)
- Environmental risks that require further information to adequately assess impact; and
- Environmental risks that will require specific monitoring and management to ensure that the risks are effectively mitigated.

In addition to identification of environmental risks, the ENVID is used as an early evaluation and screening tool to determine the aspects or activities of the construction phase which pose a significant risk of compromising the Environmental Objectives of the MS 1180.

The ENVID will be undertaken in three stages:

- Initial population of the ENVID risk assessment template based on desktop study (conducted by the CONTRACTOR Environmental Team).
- An ENVID workshop facilitated by the CONTRACTOR Environmental Team, which will include both representatives from the OWNER and the CONTRACTOR management and HSSE Teams. This workshop stage will review and evaluate the risks of construction specific activities impacting on the environment.
- A subsequent review of the residual risks and any further outcomes or management required, or further investigations required will be undertaken by the CONTRACTOR Environmental Team.

The aim of the ENVID is to:

- Collectively review, evaluate and align environmental risks.
- Rationalize reasonable and achievable monitoring and management actions proposed to be applied to the construction phase.
- Identify any gaps, further investigations, plans, procedures, resources or approvals that may be required during construction.

The participants of the ENVID should include key project team members, HSSE Team, OWNER Representative, MAC representative (where required) and construction sub-contractors.

Once complete, the ENVID will be included as Attachment H to this Plan.

10.8 Hazard Assessment – Project Execution Phase

The adequacy of the planning phase risk management activities will be reviewed and confirmed through kick off meetings and scope reviews.

The outcomes of the risk assessment processes undertaken during the Project planning phase are communicated to the workforce through Sub-management Plans, the inclusion of controls in work method statements, inductions, procedures and engineering documents. These are supplemented by the following risk assessment activities utilised during the Project execution phase:

- Project MAP Register reviews.
- Management of Change.
- Job Hazard Analysis.
- Hazard Cards.
- Take 5.

Environmental hazards identified from these programs will be assessed using the HSSE Risk Matrix (0000-ZA-E-02990) and documented as described in the relevant plan, procedure or work instruction.

Hazards having a high or very high residual risk level will be recorded in the Project hazard register and a detailed risk management plan will be developed and implemented specific to the Environmental hazard identified.

10.9 Management Of Change

Hazards and risks associated with temporary and permanent change that relate to; design, standards, regulations, work methods, procedures, facilities, materials, equipment and the Project organisation and personnel, will be identified and assessed by personnel competent in risk management and the CONTRACTOR Management of Change processes (Management Expectation: Management of Change CORP-EXE-MS-G-0005).

All significant changes will be documented and tracked. All affected personnel will be kept informed of the implications and progress of such change. The implication of the change will be assessed by reviewing the original risk assessment.

The CONTRACTOR will revise the original Hazard Register / Risk Assessment and implement any actions to mitigate the risk(s) resulting from the change. This information will then be disseminated to the workforce through internal communications.

11. OPERATIONAL PLANNING & CONTROLS

11.1 General

Specific operational controls to manage environmental issues are defined in either of or all of the following:

- Risk assessments – Appendix C-1 – Environmental Risk Assessment Process & Risk Matrix, Appendix C-2 – Risk Assessment, Aspects & Impacts Register.
- ENVID Summary (Attachment H)
- Section 12 Environmental Management Protocols and associated appendices
- Construction Sub-Plans have been prepared by the CONTRACTOR to incorporate the approval conditions, the OWNER Management plans against the applied construction methodologies.
- Specific Confirmed Management Plans have been developed as required through the Environmental Assessment conditions and should be read in conjunction with this CEMP.
- Significant environmental issues are identified through review of the environmental background information specific to the scope of work and receiving environment. Refer to Section 10 Environmental Risk Identification and Management.
- Additional controls and criteria will be established and maintained where the absence of action could result in the Environmental Policy, objectives and/or targets not being met.

11.2 Planning

An Environmental Documentation Deliverables Schedule has been developed to identify all Project documentation and environmental approvals required for the delivery of Project CERES. The schedule has been developed to comply with the requirements of the OWNER, the Environmental Protection Authority (EPA), Department of Agriculture, Water and Energy (DCCEEW), City of Karratha (CoK), Department of Planning, Lands and Heritage (DPLH), Department of Water and Environmental Regulation (DWER) and other regulatory bodies and be made available to the OWNER upon request. This list will be reviewed by the HSSE

Manager or Environmental Lead periodically to ensure it is complete and all documentation is issued for use during execution.

11.3 Design

The Project is a design and construct contract in which the CONTRACTOR, more specifically Saipem is responsible for the design functions of the Processing Plant and associated elements. The CONTRACTOR shall work collaboratively to ensure the environmental conditions and local sensitive receivers are understood and accommodated through those design elements which can be altered or adapted. The CONTRACTOR acknowledges that certain elements of the design parameters and extents are fixed. The Urea Plant will use the latest commercially available technology packages to maximise the urea production from natural gas feedstock and minimise environmental impacts.

The areas of the design that can be and will be altered to accommodate environmental issues include the following:

- Utilise efficient technology for ammonia (NH3) production and urea production to reduce air emissions (including greenhouse gas (GHG) emissions) when compared to other available technology.
- Design the project footprint to avoid Priority Ecological Communities (PECs) and conservation significant flora, and selected the northern Hearson Cove Road realignment option to avoid high quality vegetation located near the southern perimeter of Site F.
- Locate a significant portion of the urea product conveyor within the existing East West Service Corridor which has already been cleared thereby reducing native vegetation clearing.
- Avoid rocky outcrops and drainage lines and avoided disturbance to watercourses, riparian vegetation, and flood plains.
- Use an elevated causeway with large culverts across the King Bay / Hearson Cove supratidal to intertidal flat area to reduce impacts on tidal water movements.
- Reduce the size of the development envelope to avoid:
  - the Yatha Aboriginal heritage site;
  - direct impacts to 30 of the 33 identified Aboriginal heritage sites and cultural
  - values in the development envelope east of Burrup Road (seven) all sites of cultural heritage value (Site IDs 18706, 9063, 21753, 9062, 19794, and 19793) in the Dampier Port area
- continue to consult with the Murujuga Aboriginal Corporation (MAC), and with their approval, propose to relocate Aboriginal heritage sites within Site C.
- how to meet environmental conditions, codes, regulations, and other requirements.

These issues will be considered, while considering the practicalities and economic realities of the project site. The specific design parameters and elements have been communicated within the BOD.

11.4 Erosion And Sediment Control Plan

As per requirements summarised in Section 5.7 of this Plan, it is the responsibility of the CONTRACTOR or person undertaking any ground disturbing activity, to ensure they submit to the CONTRACTOR Environmental Lead or HSSE Manager an application form requesting a GDP at least two weeks prior to requiring access to the area being the subject of the GDP.

When applying for ground disturbance permits, an Erosion and Sediment Control Plan is to be developed and implemented in all areas requiring ground disturbing activities as per approval conditions and requirements of the Water Quality, Erosion and Sediment Control Management Sub-Plan.

11.5 Hold Points

Environmental hold points have been identified by the CONTRACTOR, whereby if certain aspects are not achieved, the Project activities related to the aspect will be suspended until it is safe to resume or carry out the project work in an environmentally safe manner. The activities outlined in the Table 11-1 are not to proceed without objective review and approval from the nominated authority, otherwise they are hold points.

Table 11-1 Environmental Hold Points

Item	Process Held	Acceptance Criteria	Approval Authority
Ministerial Statement No. 1180	Project and its Construction	State approval of the Project through MS No. 1180	CEO of the OEPA
EPBC 2018/8383	Project and its Construction	Federal approval of the Project through the EPBC	Minister of DCCEEW
Section 18 Approval	Project and its Construction	Aboriginal heritage approval with conditions to disturb sites within the Project Envelope	Minister of Aboriginal Affairs
Invitation to Traditional Owners to observe activities	Ground Disturbing Activities and Construction activities	Invitation must be extended to relevant Traditional Owners in accordance with the MS 1180 for ground disturbing activities. Conditions 4-7 (3); 5-3 (4) and 9-2 (3).	Traditional Owners MAC OWNER
Environmental Management Plans (condition based) (OWNER)	Construction and Site set-up	Management plans to mitigate specific environmental impacts and resonate targets and objectives of the EPA.	Project Management (OWNER) EPA MAC
Construction Environmental Management Plan	Construction and Site set-up	Site specific CEMP has been developed, reviewed and approved by the OWNER and MAC – CEMP based on construction methodology of the CONTRACTOR.	Project Management (OWNER) MAC
Environmental Management Sub-Plans	Construction and Site set-up	Management sub-plans to mitigate specific environmental impacts and resonate targets and objectives of the OWNER, EPA and MAC.	Project Management (OWNER) MAC

Item	Process Held	Acceptance Criteria	Approval Authority
Construction Environmental Management Protocols	Construction and Site set-up	Management Protocols to mitigate specific environmental impacts and resonate targets and objectives and monitoring requirements during the construction program being carried out by the CONTRACTOR and sub-contractors. Plans will state both CONTRACTOR specific criteria and the OWNER and EPA specific requirements to be implemented during construction.	Project Management (OWNER) MAC CONTRACTOR HSSE Management Environmental Lead CONTRACTOR Project Management
Site Clearing activities	Commencement of site clearing or vegetation removal	All management controls in place Fauna trapping and translocation Flora pre-clearance survey Clearing permits Clearing pegging boundaries clearly marked and in accordance with the design extent parameters approved by the MS 1180 Ground Disturbance Permit	CONTRACTOR Construction manager Environmental Lead HSSE Manager
Dangerous Goods	Storage of Dangerous Goods	Verification that bunded storage is provided and that any offset distances from sensitive receivers (water drains) are maintained, spill equipment is available at storage sites. Refer to Schedule 1 of the Dangerous Goods Safety (Storage and handling of non-explosives) Regulations 2007.	CONTRACTOR Construction Manager
Controlled / Hazardous Waste	Transport of Controlled / Hazardous Wastes from site	Verification that the waste has been classified in accordance with the guidelines, transport licensing in place and landfill can lawfully receive the waste. Materials are tracked and recorded.	CONTRACTOR Environmental Team and HSSE Manager
5C license	Dewatering and Groundwater for construction water	Approved license relative to works prior to works commencing	Department of Water and Environmental Regulation (DWER)

Item	Process Held	Acceptance Criteria	Approval Authority
26D license	Construct or alter a well may require altering the well	Approved license relative to works prior to works commencing	DWER
Section 11/17/21A	Interference with Bed or Banks of a watercourse	Approved license relevant to works at Hearson Cove Road Realignment over the intertidal flats shall be in place.	DWER
Ground Disturbance Permit	Earthworks, Clearing etc.	No earth works or clearing to commence unless permits have been issued as per Section 5.7 of this Plan.	CONTRACTOR Construction Manager OWNER
Part V Works Approvals and Licenses	Construction and mobilisation of elements related to the construction of the urea plant.	Part V works approvals and associated licences to be issued for any “prescribed activity” causing emissions and discharges (i.e., Mobile Screening and Crushing & Wastewater Treatment Plant).	DWER
Soil movement	Transfer of soil within the construction footprint	Verification of soil re-use and storage. Soil categorised from source location and managed accordingly with regard to weeds; contamination; ASS. Soil / spoil is tracked and recorded.	CONTRACTOR Construction Manager
Acid Sulfate Soils	Excavations in areas where ASS is expected to occur	Management in accordance with the guidelines and actions specified in the ASSMP	CONTRACTOR HSSE Manager Environmental Lead

11.6 ARCGIS Mapping

The Project will implement the use of an online GIS Mapping tool (geospatial system using ArcGIS) for proposed environmental control measures, monitoring requirements and areas of concern. It will be utilised in project inductions, site set-up and construction work packages, reviewing ongoing environmental performance, and included as information in tender documents for subcontractors where applicable and to support ancillary environmental approvals (if applicable). The GIS Maps will be included within the relevant environmental sub-plans and / or Management Protocol (Section 12) that the CONTRACTOR will prepare for the construction works.

The aspects that will be mapped using the system will include (but are not limited to):

- Heritage areas
- Surface water
- Flora and vegetation
- Fauna habitat and location of conservation or threatened species
- Location of PASS/ASS
- Groundwater monitoring wells
- Prescribed premises or activity locations (i.e. Crushing and Screening locations)
- Site offices, laydowns, entries
- Chemical storage locations
- Refuelling locations

11.7 Procurement & Supply Chain

The supply of goods and/or services by suppliers and subcontractors will be carefully controlled and monitored through the CONTRACTOR internal processes. The following aspects are to be considered:

- Suppliers of Dangerous Goods and hazardous substances will be required to submit SDS's with delivery or prior to products arriving at site. Prior approval to use products on site will need to be obtained internally from the HSSE function so as to maintain the Project's Hazardous Materials Register
- The subcontractors on-site will be required to work under the CONTRACTOR CEMP and, if required, Sub- Plans or in certain cases depending on their scope of work be required to prepare their own CEMP that pertains to their scope of work.

11.8 Material Tracking System

A material tracking system (MTS) will be developed and maintained on-site by the CONTRACTOR and will be available to the OWNER by request. All material (soil) brought to site, excavated on-site, and transported off-site will be recorded quantitatively, quantifiably, and spatially. These items include all stockpiling and placement of materials (clean or contaminated) on-site or those being removed off-site.

The management requirements for all excavated soil, imported materials and internal movements of material are listed below:

- Paperwork indicating the environmental condition and positive suitability of any delivered soil/mulch.

- Details of soil origin (including weed classification), actual volumes, dimensions, and date removed.
- Details of location where material (soil) is stored and details of location and volume of where the material has been placed.
- Details of any treatment or identification undertaken on-site.
- If material is disposed of to landfill or treatment facility, weighbridge dockets and receipts from the landfill facility.
- Reference to analytical results, including quality control results and waste classification category if available (where required and applicable).

11.9 Heritage Unexpected Finds Procedure

The CONTRACTOR unexpected finds procedure for archaeological and skeletal remains is detailed within the CONTRACTOR Heritage Management Sub-Plan (Attachment D to this CEMP).

11.10 Plant & Equipment

Plant and equipment owned by the CONTRACTOR Team will be maintained in a safe and serviceable manner. The plant and equipment will come to site weed and seed free.

12. ENVIRONMENTAL MANAGEMENT PLANS & PROTOCOLS

The Environmental framework and supporting plan structure for the Project is complex. See Figure 2-1 for an overview of the environmental framework during the construction stage.

In accordance with the conditions associated with Ministerial Statement 1180, the OWNER has developed several confirmed management plans. In addition, the OWNER has prepared several other environmental management plans including Pest Management Plan, Solid & Liquid Waste Management Plan and Weed Management Plan.

A list of the “Confirmed Plans” that have been prepared by the OWNER, that the CONTRACTOR will comply with and where relevant to construction works implement management measures include:

- Fauna Management (PCF-PD-EN-FaMP)
- Threatened Species Management Plan (PCF-PD-EN-TSMP)
- Flora Management Plan (PCF-PD-EN-FMP)
- Cultural Heritage Management Plan (PCF-PD-EN-CHMP)
- Surface Water Management Plan (PCF-PD-EN-SWMP)
- Ligh Management Plan (PCF-PD-EN-LMP)
- Acid Sulfate Soils Management Plan (PCF-PD-EN-ASSMP)

Confirmed Plans which apply to the Project but not necessarily to the construction are as follows:

- Air Quality Management Plan (PCF-PD-EN-AQMP)
- Greenhouse Gas Management Plan (PCF-PD-EN-GHG)

To support the construction team during the construction stage of the Project, the CONTRACTOR has prepared a suite of environmental management plans and protocols specific to the CONTRACTOR scope of works and construction methodology, which are supplementary to the OWNER prepared plans.

Environmental management sub-plans have been prepared for the higher risk aspects during construction. These include:

- Water Quality, Erosion & Sediment Control Management Sub- Plan (Attachment A)
- Flora & Vegetation Management Sub-Plan (Attachment B)
- Native Fauna Management Sub-Plan (Attachment C)
- Heritage Management Sub-Plan (Attachment D)
- Pest Management Sub-Plan (Attachment E)
- Solid & Liquid Waste Management Sub-Plan (Attachment F)
- Weed Management Sub-Plan (Attachment G)
- Project Emergency Preparedness Response Plan (0000-ZA-E-09711)

These construction-based CONTRACTOR sub-plans are stand-alone plans that provide the construction team and sub-contractors with specific requirements and conditions within the MS 1180, EPBC 2018/8383, Section 18 Approval, Part V works approvals/licenses and any other applicable approvals and commitments required during the construction program.

Environmental management protocols apply to the low-medium risk items and have been reviewed to ensure conformity with the Ministerial Conditions applied to the Project under Part IV Environmental Protection Act 1986 (WA), and in addition, will be reviewed following other Project specific planning, and construction approvals, permits and conditions. These protocols will continue to be updated following the various Part V approvals and licenses under the EP Act being provide to the Project.

Environmental Management Protocols have been prepared by the CONTRACTOR for the Project as follows:

- Hydrocarbon and Hazardous Substances Protocol (Appendix F)
- Fire Management Protocol (Appendix G)
- Drill and Blast Near Rock Protocol (Appendix H)
- Asbestos and Fibrous Materials Protocol (Appendix I)
- Air Quality Management Protocol (Appendix J)
- Noise Management Protocol (Appendix K)
- Acid Sulfate Soils and Dewatering Protocol (Appendix L)
- Concrete Batching Protocol (Appendix M)
- Rehabilitation Management Protocol (Appendix N)
- Lighting Management Protocol (Appendix O)
- Greenhouse Gas Management Protocol (Appendix P)

The CONTRACTOR has adopted these management protocols as the primary procedures for management of these low-medium risk aspects during construction from the OWNER Environmental Management Plan and associated Protocols (refer to Section 12). However, the CONTRACTOR has included additional management actions / requirements based on

their scope of works during construction and their specific construction methodologies, in addition, the CONTRACTOR have incorporated the Part IV approval condition requirements for each aspect (if relevant) and in relation to the construction works being performed. Where the management requirement is CONTRACTOR specific, the management protocol will state as such.

A brief description of the management sub-plans and protocols and the related impact during construction is included below with a copy of each included as an Appendix or an Attachment to this document. Where a contradiction may occur between this CEMP, the PEMP, the Confirmed Management Plans, the OWNER issue specific management plans and the individual management protocols, the most current version of the relevant management plan(s) that has been approved by EPA, DCCEEW and MAC (if required) will take precedence.

The Confirmed Management Plans and the issue specific environmental plans will take precedence over the management protocols and will be considered the most up to date version of management requirements in line with environmental approvals (MS 1180).

Any management protocol or sub-plan prepared for construction by the CONTRACTOR will be submitted to the OWNER for approval prior to use onsite. See Figure 2-1 for the CONTRACTOR Plan Framework for further information.

12.1 Water Quality, Erosion & Sedimentation Management

The CONTRACTOR Water Quality, Erosion & Sediment Management Sub-Plan (WQESMP) (Attachment A) has been developed primarily to communicate the construction requirements and management obligations under the OWNER Confirmed Surface Water Management Plan. The OWNER has developed the Confirmed Surface Water Management Plan (SWMP) (PCF-PD-EN-SWMP) in compliance with the EP Act Part IV approval conditions (Condition 8 – MS 1180). In addition, it provides detailed management strategies, triggers, thresholds, reporting and monitoring methodology to demonstrate compliance with the Conditions within MS 1180 and the OWNER procedures and systems. The WQESMP captures requirements stated within the OWNER Protocols for Erosion, Sediment & Surface Water Quality Management.

The WQESMP must be read in conjunction with the confirmed Surface Water Management Plan.

Soil erosion mitigation measures will be adopted during construction activities carried out by the CONTRACTOR and subcontractors to minimise the severity of surface flow, limit erosion and avoid negatively impacting adjacent waterways and drainage structures.

Erosion protection measures will be undertaken to manage stormwater within and entering all Project areas during construction. The WQESMP outlines the controls to be implemented and managed by the CONTRACTOR to meet these objectives.

Further description of the aspects and associated impacts to surface waters and coastal processes have been captured within Appendix C-2 – Risk Assessment, Aspects & Impacts Register.

Erosion and Sediment Pollution Control Plans (ESCP's) as described in the Confirmed Surface Water Management Plan and the Ground Disturbance Permit Process will be developed to further manage the risks associated with erosion, sediment and water quality during construction.

12.2 Flora & Vegetation Management

The CONTRACTOR Flora and Vegetation Management Sub-Plan (FVMP) (Attachment B) primarily details the construction-based requirements and obligations communicated within the OWNER Confirmed Flora Management Plan. The Confirmed Flora Management Plan (FMP) (PCF-PD-EN-FMP) required under the Part IV approval conditions (Condition 4 – MS No. 1180) provides detailed management strategies, triggers and thresholds, reporting and monitoring methodology specific to flora and vegetation management to demonstrate compliance with the Conditions of MS 1180 and the OWNER systems and processes.

The FVMP includes the management, monitoring and reporting that the CONTRACTOR are obligated to carry out during construction works to remain compliant with the aforementioned plans and protocols.

The FVMP must be read in conjunction with the Confirmed Flora Management Plan and has been included as Attachment B to this CEMP. It is a stand-alone Plan, that can be reviewed and updated independently of this CEMP.

In addition to the above, the FVMP includes the CONTRACTOR specific procedures and systems to manage flora and vegetation, including clearing onsite during all construction activities and has been developed and reviewed to align with the CONTRACTOR proposed construction activities and associated methodology.

The CONTRACTOR and its subcontractors shall ensure the requirements for flora protection, site clearing and grubbing, as well as disposal of the materials produced by clearing and grubbing are within the limits specified by the plans and approval conditions for the Project.

Description of aspects and their associated impacts to flora and vegetation are included in Appendix C.

The CONTRACTOR shall implement the requirements within the most recent version of the Confirmed Flora Management Plan until otherwise advised by the OWNER and/or the CEO of the EPA. When the Confirmed Flora Management Plan is updated, the CONTRACTOR FVMP will be amended to reflect these changes where they will impact the CONTRACTOR obligations during construction.

12.3 Native Fauna Management

The CONTRACTOR Native Fauna Management Sub-Plan (NFMP) (Attachment C) has been prepared to communicate the construction requirements and obligations detailed within the OWNER Confirmed Fauna Management Plan (FaMP) (PCF-PD-EN-FaMP) that was prepared in accordance with the Part IV approval conditions (Condition 5 – MS 1180) and the Confirmed Threatened Species Management Plan (TSMP) (PCF-PD-EN-TSMP).

The NFMP provides construction-based management actions, monitoring methodology and reporting specific to native fauna and local threatened species to demonstrate compliance with the Confirmed FaMP and TSMP and the Conditions of MS 1180 and EPBC 2018/8383.

The Native Fauna Management Sub-Plan must be read in conjunction with the Confirmed Fauna Management Plan and the Confirmed Threatened Species Management Plan.

The NFMP is a stand-alone plan that can be read and updated independently of this CEMP. Description of the aspects and their associated impact to terrestrial fauna are included in Appendix C-2 – Risk Assessment, Aspects & Impacts Register.

The CONTRACTOR shall implement the most recent versions of the Confirmed Fauna Management Plan and Confirmed Threatened Species Management Plan until otherwise advised by the OWNER and/or the CEO of the EPA. If these Confirmed Plans are update, the CONTRACTOR will ensure that the NFMP is updated to reflect any changes that impact management of fauna during construction.

12.4 Cultural Heritage Management

The CONTRACTOR Heritage Management Sub-Plan (Attachment D) (HMP) includes management requirements of the OWNER Confirmed Cultural Heritage Management Plan (CHMP) (PCF-PD-EN-CHMP) that has been developed by the OWNER to further detail the of the Heritage Management Procedure and to comply with Condition 9 within MS 1180, the EPBC Approval 2018/8383 and the s. 18 consent (MIN-2021-0354).

The OWNER Confirmed CHMP provides detailed management strategies, reporting and monitoring methodology specific to the significant heritage matters to the site and local area to demonstrate compliance with the Conditions of MS 1180 and the OWNER procedures and systems. The Heritage Management Sub-Plan provides clarification to the CONTRACTOR and its subcontractors in relation to their responsibilities when managing known heritage sites and unidentified finds during the construction activities. In addition, it provides the regulatory compliance (under EP Act, EPBC Act and AH Act), monitoring and reporting requirements that the CONTRACTOR are obligated to implement during construction.

The CONTRACTOR HMP can be read and reviewed independently of this CEMP, however it must be read in conjunction with the Confirmed CHMP and the CONTRACTOR shall comply with the most recent version of the Confirmed Cultural Heritage Management Plan until otherwise advised by the OWNER and/or the CEO of the EPA that it is no longer required in writing. There is certain information obtained from the Traditional Owners and MAC during the consultation process which is sensitive, and this information will not be made available to the Public in any CONTRACTOR reports or plans associated with cultural heritage matters.

Specific protocols detailed in the HMP will need to be followed should an unexpected heritage find occur. This includes the discovery of skeletal remains, artefacts and rock art not previously identified.

Description of the aspects and their associated impact to social surroundings are included in Appendix C-2 – Risk Assessment, Aspects & Impacts Register.

It should be noted that impacts to rock art are a key environmental element to protect during the proposal, however; the aspects relating to impacts to rock art are most notable during project operation, as air emissions during construction will be negligible.

12.5 Pest Management

The Project has the potential to introduce and spread various pest species onto the Project site and within the surrounding environment. Pests may cause adverse impacts to local native flora and fauna species significant to the Burrup Peninsula ecosystem function. The Pest Management Sub-Plan included in Attachment E details management requirements for pests on the Project. The CONTRACTOR has included relevant construction scope and risks relating to the adopted construction methodologies into the Pest Management Sub-Plan. The Pest Management Sub-Plan summarises management actions, requirements, and controls relevant to the construction activities on the Project.

The Pest Management Sub-Plan must be read in conjunction with the OWNER Pest Management Plan and where it intersects with the Confirmed Fauna Management Plan and the Confirmed Threatened Species Management Plan.

12.6 Solid And Liquid Waste Management

The objective of waste management on the Project is to minimise generation of solid and liquid wastes and maximise opportunities to reuse or recycle material in preference to disposal.

The management measures which will be employed during the construction phases will ensure no contaminated liquid wastes such as black / grey water, trade waste and dewatering discharge are released to the environment.

The Solid Liquid Waste Management Sub-Plan included in Attachment F addresses the Project's key responsibilities including the stockpiling and storage of wastes, reuse and recycling, management of controlled wastes, and wastewater.

The OWNER Solid Liquid Waste Management Plan (SLWMP) (PCF-PD-EN-SLWMP) was prepared by the OWNER and has been reviewed and updated by the CONTRACTOR to include relevant construction related wastes.

The Solid Liquid Waste Management Sub-Plan must be read in conjunction with the OWNER Solid Liquid Waste Management Plan.

12.7 Weed Management

The CONTRACTOR and its subcontractors must ensure construction activities do not result in the introduction of new weed species or spread of existing weed species within the Project work areas. The Weed Management Sub-Plan included in Attachment G summarises requirements and controls relating to weed hygiene and management of weed affected soil and vegetative matter.

The Weed Management Sub-Plan includes relevant construction risks and management specific to the CONTRACTOR construction methodology. A list of the relevant weed species within the Project area is provided within the Weed Management Sub-Plan.

The Weed Management Sub-Plan must be read in conjunction with the Confirmed Flora Management Plan.

12.8 Hydrocarbon And Hazardous Substances Management

Environmental management practices for the transport, storage and use of chemicals associated with the Project must ensure no uncontrolled releases to the environment and ensure compliance with relevant legislation, regulations and guidelines. This includes managing exposure to and release of naturally occurring fibrous materials which may occur on the site.

The Hydrocarbons and Hazardous Substances Management Protocol included in Appendix F details the responsibilities of the CONTRACTOR and its subcontractors for the storage, segregation, transport and administration of hydrocarbons and hazardous substances.

Under Part V of the EP Act, the CONTRACTOR will be applying for a Works Approval and Licence for bulk storage of chemicals (Cat 73). The management procedures within the Hydrocarbons and Hazardous Substances Management Protocol will comply with any conditions and requirements of the applicable approvals and licenses issued and will, in addition, be included in the compliance matrix in Appendix A – Approval Conditions Compliance Table of this plan once received by the regulatory authority (DWER).

12.9 Fire Management

The objective of the Fire Management Protocol included in Appendix G is minimise the risk of fire events related to Project activities. The key responsibilities of the CONTRACTOR outlined in the Fire Management Protocol include the development of emergency management plans, permit procedures, fire control, training and equipment maintenance.

The Confirmed Fauna Management Plan (PCF-PD-EN-FaMP) includes provisions to avoid where practicable and otherwise minimise impacts to significant terrestrial fauna species, including short-range endemic fauna and migratory birds, including, impacts from fire.

In addition, the Confirmed Flora Management Plan (PCF-PD-EN-FMP) includes provisions to manage impacts from fire.

The OWNER has prepared an Project Emergency Preparedness Response Plan (0000-ZA-E-09711) which the CONTRACTOR have amended to include construction related emergencies and required preparedness.

The Fire Management Protocol should be read in Conjunction with the Project Emergency Preparedness Response Plan, Confirmed Fauna Management Plan and Confirmed Flora Management Plan.

12.10 Drill And Blast Activities Near Rock Art Management

The protection of rock art is a priority for the Project. MAC has been consulted throughout the planning and environmental assessment phases of the Project in regard to the culturally significant rock art.

The Drill and Blast Near Rock Art Management Protocol in Appendix H addresses the CONTRACTOR's and its subcontractors' responsibilities including development of blast management plans, training and pre-blast inspections.

This management protocol shall be reviewed and updated following concerns or consultation between the OWNER and MAC and following the pending results of the Western Australian Rock Art Monitoring Program.

12.11 Asbestos And Fibrous Materials Management

Though considered to be of low likelihood, the exposure of personnel to asbestos and other fibrous materials remains a priority for the Project. The Asbestos & Fibrous Materials Management Protocol in Appendix I addresses the CONTRACTOR's and its subcontractors' key responsibilities including training, site investigation and management of in situ and excavated materials.

12.12 Air Quality Management

Air quality impacts such as dust emissions during construction, and both controlled and uncontrolled gas emissions during commissioning will be managed to minimise their impact on workers, neighbouring properties and the environment. The Air Quality Management Protocol included in Appendix J addresses the CONTRACTOR and its subcontractors' responsibilities including commissioning parameters, onsite dust management and monitoring during construction.

In accordance with the MS 1180 Conditions (Condition 2) an Air Quality Management Plan shall been prepared to manage emissions during the operations of the Urea Plant.

The Air Quality Management Protocol includes the CONTRACTOR specific management procedures for air quality onsite during the construction works (i.e., Dust minimisation from earthworks and crushing and screening activities).

12.13 Noise Management

Intrusive noise issues associated with the Project will be managed in compliance with relevant statutory standards and to ensure they do not negatively impact on workers and neighbouring noise sensitive receptors, including native bats, turtles and other fauna.

The Noise Management Protocol included in Appendix K, provides guidance on how the CONTRACTOR and its subcontractors will minimise noise emissions from a range of sources including construction equipment, drilling, blasting, piling and commissioning of plant, the conveyor and ship loader.

The CONTRACTOR may develop a stand-alone Noise Management Plan which will include the details provided in the protocol and any specific requirements of the Part V approvals in relation to noise emissions. This Noise Management Plan will in addition provide relevant details and controls for works being carried out, outside of the allowed construction hours and in accordance with the Environmental Protection (Noise) Regulations. The Noise Management Plan will also consider the requirements to protect heritage values and fauna during construction activities.

12.14 Acid Sulfate Soils Management & Dewatering

The objective of the Acid Sulfate Soils Management Protocol is to minimise the risk of generating acid leachate from acid sulphate soils (ASS) and the managing ASS unexpectedly exposed during the Project.

The Acid Sulfate Soils Management Protocol included in Appendix L outlines the CONTRACTOR and its subcontractors' responsibilities including identifying ASS risk areas, development of an ASS and dewatering management plan, containment, treatment and reuse, and groundwater management.

The CONTRACTOR design may intercept ASS and groundwater, therefore the CONTRACTOR will likely be required to prepare stand-alone ASS Treatment Plans for the applicable work areas being impacted. In addition, the CONTRACTOR has prepared an ASSMP in accordance with the relevant DER Guidelines (2015).

12.15 Concrete Batching Management

The objective of the Concrete Batching Management Protocol in Appendix M is to minimise the environmental impacts of operating the temporary concrete batch plant. The protocol addresses the Project's requirements for minimising dust emissions, spills to open ground, wastewater management, storage, containment and handling of materials, and the reuse or disposal of solid wastes.

12.16 Rehabilitation Management

At the conclusion of the Project the site will be handed back to the OWNER for operation. Prior to handover the CONTRACTOR will demobilize all construction equipment from the site and rehabilitate all disturbed areas not required for operational purposes. The Rehabilitation

Management Protocol included in Appendix N, addresses the CONTRACTOR and its subcontractors' key responsibilities including the minimum rehabilitation standards and close out of all outstanding actions.

12.17 Light Management

Light management is a priority issue on the Project due to the potential to impact Hearson Cove and Deep Gorge (Ngajarli) night visits (Cultural Significance) and local Marine Fauna (marine turtles). The Project shall ensure that the best practices technology and mitigation measures are implemented during construction to minimise the impacts to the sensitive locations identified.

The MS 1180 Condition 10 states the requirements around light management during construction. In accordance with the MS Conditions, a Confirmed Light Management Plan (LMP) (PCF-PD-EN-LMP) has been developed to demonstrate compliance and to implement the management strategies, applicable technologies, reporting and monitoring methodology specific to light management.

The CONTRACTOR shall implement the most recent version of the Confirmed Light Management Plan until otherwise advised by the OWNER and/or the CEO of the EPA.

The CONTRACTOR has prepared a Light Management Protocol specific to construction that shall comply the Confirmed Light Management Plan. This Protocol will also include the CONTRACTOR specific procedures and systems to manage lighting issues that are applicable to the CONTRACTOR proposed construction activities and associated methodology and incorporate the Confirmed Light Management Plan. The Light Management Protocol must be read in conjunction with the Confirmed Light Management Plan.

The Light Management Protocol (LiMP) is presented in Appendix O.

12.18 Greenhouse Gas Emissions

Depending on the amount of GHG's being emitted and the amount of energy used during the construction process, it is likely that the CONTRACTOR will be required to accurately record and report these under the National Greenhouse and Energy Reporting Scheme (NGERS) established under the National Greenhouse and Energy Reporting Act 2007 and Regulations 2008. The likely data the CONTRACTOR will collate, and report is the usage of scope 1 and 2 emissions: fuels, waste, oils/grease and solvents as well as energy consumption.

The CONTRACTOR will implement the Greenhouse Gas Emissions Management Protocol (Appendix P) during the construction program. The CONTRACTOR will comply with the Confirmed GHG Management Plan (PCF-PD-EN-GHGMP) where it intersects with the construction activities.

13. EMERGENCY PREPAREDNESS & RESPONSE MANAGEMENT

The Project's Emergency Preparedness Response Plan shall be implemented by the CONTRACTOR onsite, addressing health, safety and environmental issues. The plan will include methods for managing major environmental incidents, including but not limited to, large scale release of hazardous materials or gases, fire, cyclone and flood events. The ERMP has been developed as a supporting plan to the CEMP. Refer to Project Emergency Preparedness Response Plan (0000-ZA-E-09711) for details.

14. TRAINING AWARENESS & COMPETENCE

All CONTRACTOR and Subcontractor personnel shall be aware of and competent to implement the environmental requirements of this CEMP and supporting sub-plans when performing their individual tasks. A competent person is a person who is qualified, because of knowledge, training and experience, to organise the work and its performance.

14.1 Project Inductions

All personnel working on the Project will undertake an environmental induction prior to commencing any work on site. The environmental induction developed by the CONTRACTOR Environmental Team, will be delivered to Subcontractor personnel by the Environmental Lead. Where the Subcontractor has an on-site Environmental Advisor, the Advisor shall conduct the CONTRACTOR Induction to the subcontractor personnel.
The Induction and shall include, but not be limited to the following:

- Project approvals (EP Act, EPBC Act, RIWI Act, AH Act)
- Key legal obligations
- Regulatory penalties and impacts of non-compliance.
- Process for authorizing ground disturbance
- Land access restrictions
- Aboriginal heritage sites and cultural awareness (Murujuga Rock Art Strategy & MAC involvement in Project)
- Dust management
- Identification of weeds, management measures and reporting requirements
- Protection of fauna, identification of protected fauna species and reporting requirements (sightings and injuries)
- Identification of feral fauna species and reporting requirements
- Water management and water use efficiency
- Fire risk management and response
- Erosion systems and management
- Hazardous materials storage and use
- Spill management including use of spill kits
- Waste management
- Asbestos materials management
- Emissions management
- Incident and hazard reporting
- Noise management
- Any special requirements relevant to specific work locations e.g.: Port related aspects and impacts, concrete batching.

Those completing the environmental induction will undergo a written assessment. Personnel performing tasks which can cause significant environmental impacts will be competent on the basis of appropriate education, training and/or experience.

The HSSE Manager and Environmental Lead will identify the training needs for personnel onsite and establish a schedule of environmental training. An outline of the proposed training is provided in Table 14-1. The training shall be scheduled to reflect the different stages of the construction program but will also relate to current site events. The HSSE Manager or Environmental Lead will maintain the training records and competency records for all onsite employees onsite to ensure compliance with this schedule.
All personnel will be subject to continuous environmental training throughout the project life via regular toolbox talks (refer to Section 15.6) that contain specific environmental management issues for the site or works being carried out at the time. The environmental issues can also be tailored to a specific work group carrying out a task that is associated with significant environmental risk. Environmental management issues and reminders will also be reiterated to personnel during pre-start meetings.

Table 14-1 Proposed Personnel Training

Training Inclusion	Personnel Required	Timing/ Frequency/Means
Biodiversity, and areas of ecological significance		
• Fauna and flora of project and surrounds • Ground Disturbance Permits • Condition (MS 1180) requirements specific to Flora, terrestrial fauna and threatened fauna. • Stop work and reporting protocols for injured wildlife. • Significant and Threatened flora/fauna species and ecological areas including sensitive surface water. • Measures to reduce and manage feral animals and pests • Weed species	Construction Personnel	Project Induction Project Toolbox Talks Information posted on message boards Potential for fauna and flora ID booklets and fauna/vehicle interaction procedure for vehicles. Potential for environmental mapping available for personnel in the field
Cultural Heritage		
• Areas of cultural significance to local setting, Aboriginal people and the country. • Conditions (MS 1180) requirements • Importance of relationship with MAC • Murujuga Rock Art Monitoring Strategy • Rock Art importance and significance	Construction Personnel	Project Induction Project Toolbox Talks
Light Management		

Training Inclusion	Personnel Required	Timing/ Frequency/Means
• Condition Requirements (MS 1180) • Technological and management measures	Construction Personnel	Project Induction Project Toolbox Talks Pre - starts
Surface Water & Groundwater		
• Condition Requirements (MS 1180) • License conditions (RIWI Act licenses and permits)	Construction Personnel	
Acid Sulfate Soils (ASS) & Dewatering		
• Standard ASS awareness • ASS and Dewatering Management Plan, including treatment and management and which locations are more likely to encounter ASS.	Construction Personnel	Project Induction Project Toolbox Talks
Community and Stakeholder Awareness		
• Local community and nearby industry, sensitive receptors and project involvement • Relevant Project stakeholder • MAC involvement and consultation • Accepted behaviours • No construction personnel consulting or communicating with regulatory bodies or media without the **OWNER** approval in writing • Approved hours of work.	Construction Personnel	Project Induction Project Toolbox Talks Coordinate with Community and Stakeholder personnel on all training, particularly MAC.
Environmental legal obligations and environmental incidents		
• Overall Project Compliance and Governance Framework. • Relevant notifiable incidents and reporting requirements and timeframes. • Environmental Protection Act and EPBC Act, and other project requirements • AH Act requirements • RIWI licenses and Approvals • Part V Works Approvals and License conditions for schedule 1 categories. • Fauna Handling licenses • Applicable fines and prosecutions. •	Construction Personnel	Project Induction Project Toolbox Talks Project Pre-starts (Daily).

14.2 Training Records

Training records shall be maintained and recorded on a Training Attendance Form and the information on these forms transferred to the Project Training Register (Site HSSE Inductions Work Instruction 0000-ZA-E-02901). This register will be made available to the OWNER environmental representative on request.

As a minimum the following will be recorded and maintained:

- Records of training attendance e.g.: induction training, toolbox meetings.
- Copies of training materials.
- Competency assessments (where relevant).
- Training matrix.

14.3 Supervisor Training and Mentoring

Further to Project inductions and general training requirements, the CONTRACTOR will provide a field supervisor mentoring program to allow for ongoing support, training and mentoring, which will assist in the implementation of the CONTRACTOR Target Zero Management Plan. Which will incorporate the following:

- Supervisory leadership
- Effective communication and issue resolution
- HSSE responsibilities and accountability
- Legislative Requirements
- Environmental and Heritage requirements
- Project HSSE expectations.

15. COMMUNICATION & CONSULTATION

15.1 Employee Engagement

The CONTRACTOR will implement a process for ensuring personnel involvement in the development of site-based environmental management and associated procedures specifically related to construction activities. This will include:

- Participation in HAZID workshops;
- Participation in ENVID workshop;
- Participation in risk assessments;
- Communicating HSSE alerts and presentations;
- Delivering environmental training;
- Hazard Reporting; and
- Actively communicating this CEMP to the workgroup.

15.2 Health, Safety and Environment Reference Material

Project management will ensure appropriate environmental resources are provided at the work site and are available to all personnel in hard copy or electronically.

15.3 Environmental Notice Boards

Environmental notice boards will be displayed in prominent positions around the site. The notice boards will display the information shown in Table 15-1.

Table 15-1 HSSE Reference Material for Notice Boards

Material	Maintained by	When
Environmental Policy	Environmental Team	As updated
Environmental Advice and Alerts	Environmental Team	As received
Environmental Incident Information and Statistics	Environmental Team	Weekly
Target Zero Observations	Environmental Team	Weekly
Topical Environmental information	Environmental Team	Minimum monthly
Meeting minutes	Environmental Team	Weekly

15.4 Environment Meetings

Environment meetings are used as a communication tool for the workforce to identify environmental issues, plan upcoming events and communicate environmental concerns. The meetings shown in Table 15-2 will be undertaken.

The Table below outlines the requirements in relation to the formal communication and consultation methods and schedules used on the project and will be updated prior to mobilisation to site to ensure all meetings are captured.

Table 15-2 HSSE Meetings

Communication Process	Schedule	Participants	Responsible Person
Pre-Start Meeting	Daily	All site-based employees including subcontractors	Construction Superintendent or Supervisor
Toolbox Meeting	Weekly	All site-based employees including subcontractors	Construction Superintendent, Supervisor, Project Environmental Lead
Monthly OWNER Progress Meeting	Monthly	All environmental representatives from site by location (i.e., the OWNER Environment & Heritage Manager, HSSE Manager or Delegate) *NB: See Section 9 for Environmental Representative Definition.* Project Management Sub-contractors' representatives	Project Environmental Management (HSSE Manager, Environmental Lead)

Communication Process	Schedule	Participants	Responsible Person
		OWNER Management	

Minutes of all environmental meetings will be kept and circulated to the CONTRACTOR Project Leadership Team. The CONTRACTOR Project Manager will review the meeting minutes to ensure that items raised are appropriately responded to and added to the agendas of subsequent meetings.

The minutes of the environmental meetings will be posted on site notice boards.

15.5 Pre-Start Meetings

In accordance with Pre-Shift HSSE Briefing (0000-ZA-E-02994) prior to the commencement of any shift, the responsible Supervisor for each discipline and work group will initiate a pre-shift meeting that will involve all personnel under their control for the duration of the shift.

Pre-shift meetings will be documented and recorded, allowing for review throughout the shift if required. The meetings will allow for discussion of all expected activities for that shift and outline or discuss any applicable environmental hazards and risks and the required precautions to be implemented.

All leaders who are required to conduct prestart meetings will receive training as part of their role development.

15.6 Toolbox Meetings

Work Group Supervisors, with support of the CONTRACTOR Environmental Management team and subcontractor environmental advisors will conduct weekly toolbox meetings with the teams. A series of structured environmental campaigns will be delivered in toolbox meetings to educate and raise awareness on the risk and controls associated within their scope of work and specific to the local environment and high-risk aspects.

One environmental based Toolbox is to be conducted per month. Toolbox meetings will be conducted by supervisors with support from the HSSE Manager and will be documented and recorded using the Attendance Record Form, with copies of the record available at site locations. Toolbox talks will be displayed on the site HSSE noticeboards.

15.7 Internal & External Communication

Refer to 140436-000-30PL-0013 - Project Coordination Plan for the Project's internal and external communication protocols.

Other forms of internal communication that can occur on the Project are as follows;

- Management reports.
- Site inspection reports.

- Environmental Control Plans – GIS based mapping tool to support compliance, interfaces and enhance visibility of spatial environmental issues.
- Audit reports.
- Incident reports.
- Site meetings.

Other forms of external communication that can occur on the Project are as follows;

- Weekly project meetings with the OWNER.
- All significant incidents notified to the OWNER.
- Project reports to the OWNER at progress meetings.
- Reporting of incidents to the OWNER as detailed within the CEMP and associated management plans.
- Monthly Environmental Performance Report.
- Meetings and correspondence with interested parties (e.g., Local Government Authorities/ Community groups/Stakeholders) as necessary.
- Discussions with adjoining landowners/neighbours and the community who may be affected by the Project as required and with the OWNER approval.

15.8 External Incident Notification

Only the OWNER, is authorised to notify external regulatory agencies of environmental incidents.

15.9 MAC Consultation Requirements

In accordance with the Ministerial Statement No. 1180, extensive consultation with MAC is required throughout the Project. Consultation is particularly required during the preparation of environmental management plans that are conditional within the Ministerial Statement (MS 1180). Each of the Confirmed Management Plans required under the MS 1180 requires the consultation of MAC. These Conditions which provide for this requirement include; 3-3, 4-3, 5-3, 6-3, 8-2, 9-2 and 10-2.

The MS 1180 specifies that a framework for consultation with Traditional Owners and Custodians via the Murujuga Aboriginal Corporation and other relevant stakeholders during the life of the proposal (Condition 9-2 (2)) is established and implemented and the CONTRACTOR will ensure compliance with this Condition during construction works.

The CONTRACTOR will comply with the above stated provisions, by ensuring the consultation framework for the consultation with Traditional Owners and MAC is adhered to. The CONTRACTOR will only engage with MAC with the prior approval from the OWNER.

16. MONITORING & COMPLIANCE

Scheduled and regular workplace inspections will be undertaken in accordance with the CONTRACTOR HSSE Workplace Inspection Work Instruction (0000-ZA-E-02929) to identify potential environmental hazards and to initiate corrective actions to ensure compliance with this plan. Site visits by the CONTRACTOR Corporate Leadership teams will be completed in accordance with the CONTRACTOR Management Site Visit Guideline (0000-ZA-E-02949).

Loss Prevention Inspections (LPIs) will be used by the CONTRACTOR as an inspection and monitoring tool for the project for those items not captured by the MAP Program. Inspection requirements apply to all project personnel including sub-contractors. Inspections will be carried out by the HSSE Team onsite.

The Project will utilise the Target ZERO application to carry out environmental inspections during construction. The sub-contractors working under the CONTRACTOR will be required to utilise the same system to ensure uniformity and efficient tracking of non-compliances across the project areas.

The inspections that will take place are outlined in Table 16-1 below.

Table 16-1 Planned Project Inspections

Type	Frequency	Responsible Person	What is Inspected
Daily workplace inspections. *With Environmental & Heritage issues included.*	Daily	Supervisors.	Immediate work area and equipment in work area
Weekly environmental inspections.	Weekly	Project Environmental Lead or delegate. Any Environmental Representative for the CONTRACTOR.	Project Wide
Sub-contractor Environmental Inspections	Weekly	Sub-contractor HSSE Team	Applicable Sub-contractor work area / activities
Pre-start equipment inspections	Daily	Equipment / Plant Operators. Supervisors to check in their Daily Inspections.	The equipment / machinery being used
Monthly Environmental Inspections	Monthly	Project Environmental Lead or delegate. Any Environmental Representative for the CONTRACTOR.	Project Wide

Type	Frequency	Responsible Person	What is Inspected
Monthly Environmental Inspections (Sub-contractor audit)	Monthly	Project Environmental Lead or delegate. Any Environmental Representative for the CONTRACTOR.	Environmental Team to inspect Subcontractor work areas / activities at least monthly.
Environmental walkthroughs (Informal)	Weekly	Environmental Management / HSSE Management. OWNER Environmental Representative. CONTRACTOR Construction Manager.	Project Wide
Management Site Visit Inspections	Monthly (as a minimum) after the monthly management meeting	CONTRACTOR and subcontractor Environmental Representatives. OWNER Environmental Representative. Corporate Senior Management	Project Wide

16.1 Environmental Inspections

Using the Target ZERO application, environmental inspections will assess the Projects compliance with environmental approvals and conditions and / or contract requirements as well as the following:

- Environmental site conditions;
- Compliance to relevant conditions and licenses;
- Review of relevant legislative requirements, approvals and conditions;
- Incident and non-conformances;
- Project environmental objectives and targets;
- Management measures of environmental aspects detailed within the issue specific environmental management plans;
- Hazardous materials storage and handling;
- Dust management;
- Refuelling activities;
- Land clearing and rehabilitation;
- Groundwater usage;
- Trench management;
- Subcontractor inspection regime and non-conformance management;

- Noise management;
- Stormwater management including sediment basins and ponds;
- Spills, leaks and contaminated ground;
- Topsoil management;
- Waste management (liquid and solid); and
- Leading indicators (audits and inspections, and training undertaken and planned).

16.2 Daily Workplace Inspections

The CONTRACTOR has incorporated environmental and heritage aspects into the daily workplace inspection specific to the Project that will allow supervisors to monitor their work environments for potential non-compliance with this Plan, the OWNER requirements and regulatory approval conditions and plans (MS 1180 and EPBC 218-8383).

The Project will be utilising the Target Zero App onsite to track non-compliance and raise awareness of potential issues with environmental controls on the Project site.

Site visits by the CONTRACTOR Leadership team shall be completed in accordance with Management Site Visit Guideline (0000-ZA-E-02949).

All non-conformances identified will be managed through the Project's non-conformance management process outlined in Section 16.13 of this Plan.

16.2.1 Weekly Environmental Inspections

The CONTRACTOR HSSE Team shall undertake weekly environmental inspections of all Project work areas and activities of their personnel and subcontractors. Weekly inspections will capture the higher risk activities or conditions for environmental and heritage issues that require monitoring more regularly and will include the review and auditing of various registers and daily workplace inspections in order to identify trends and early warning indicators, prior to environmental impacts being triggered. These inspections will aid the CONTRACTOR team in capturing data that may be required for the OWNER reporting under the MS 1180 and EPBC 2018-8383 approvals. The Project will be utilising the Target Zero App onsite to track non-compliance and raise awareness of potential issues with environmental controls on the Project site.

The CONTRACTOR environmental personnel will prepare corresponding environmental inspection reports that will be made available to the OWNER upon request.

All non-conformances identified will be managed through the Project's non-conformance management process outlined in Section 16.13 of this Plan.

16.2.2 Monthly Environmental Inspections

Monthly Inspections will serve as small scale audits and include a more detailed inspection checklist for environmental and heritage aspects. These monthly inspections will ensure management actions and monitoring requirements stated within any confirmed management plans under the environmental approvals are captured and carried out during construction.

These inspections will aid the CONTRACTOR team in capturing data that may be required for the OWNER reporting under the MS 1180 and EPBC 2018-8383 approvals.

Additionally, the CONTRACTOR Environmental Team will inspect any sub-contractor works / activities at least monthly using a monthly checklist, to ensure the Sub-contractor has been capturing all risks, non-conformances and data required for any reporting and monitoring.

All non-conformances identified will be managed through the Project's non-conformance management process outlined in Section 16.13 of this Plan.

16.2.3 Subcontractor Environmental Inspections

Sub-contractors working under the CONTRACTOR supervision may be required to engage their own environmental personnel or HSSE personnel with appropriate qualifications in environment to monitor the sub-contractors work environment, activities and environmental impacts to ensure compliance with this CEMP, the OWNER requirements and regulatory approval conditions and plans (MS 1180 and EPBC 218-8383). The Environmental person employed by the sub-contractor will act as an environmental representative.

The CONTRACTOR will include specific requirements in the sub-contractors work packs and scope of works around monitoring and inspections, which will be dependent on the work they will be carrying out and the potential environmental risks their activities may pose.

To streamline the process of capturing data and reporting to the OWNER, particularly to ensure data relating to environmental approvals is captured, the Sub-contractor environmental representative will utilise the CONTRACTOR inspection checklists (provided on the Target Zero App).

The Sub-contractor supervisors may be required to carry out a daily workplace inspection and the sub-contractor environmental representative may be required to conduct weekly inspections of their activities. Access to the Target Zero App will be provided to the sub-contractors.

It is the Subcontractors' responsibility to ensure their HSSE personal, and any other required attendees are available to accompany the CONTRACTOR's Environmental team on any inspections or audits undertaken in their Project work area.

All non-conformances identified will be managed through the Project's non-conformance management process outlined in Section 16.13 of this Plan.

16.2.4 Owner Environmental Inspections

In accordance with section 14.1.1 of the OWNER Environmental Management Plan, the OWNER will undertake weekly environmental inspections of all Project work areas and activities.

These inspections will be specific to the work area and include relevant environmental aspects such as, but not limited to:

- Hazardous materials storage and handling;
- Dust and other emissions management;
- Refuelling activities;

- Land clearing and rehabilitation;
- Groundwater usage;
- Trench management;
- Noise management;
- Stormwater management including sediment basins and ponds;
- Spills, leaks and contaminated ground;
- Topsoil management;
- Waste management (liquid and solid); and
- Environmental incidents and corrective action close out.

16.3 PPA Monitoring and Reporting

PPA has implemented a range of environmental monitoring programs across its regional ports, including the Dampier Port. Monitoring programs at the Port of Dampier have been implemented either due to:

- Legal requirements: where PPA is bound to undertake monitoring and audits under statutory approvals issued to the organisation under environment and/or cultural heritage legislation; and/or
- Best practice: where the aspects and impacts of delivering PPA's services and activities have been analysed through the Environmental Risk Register and a monitoring program has been established to characterise and monitor the quality of the environment in response to these.

PPA's current environmental monitoring programs are listed within the PPA's Environmental Monitoring Plan, and the implementation of programs likely to be relevant in quantifying potential impacts from construction will include;

- Mangroves
- Groundwater
- Marine Sediment
- Marine Pests
- Vertebrate Pests
- Exotic Pest Species
- Marine Environmental Quality
- Coastal Process Monitoring

The CONTRACTOR could be required to monitor and report as per the PPA EMP, and the Monitoring Programs listed above. This Section of the CEMP will be updated prior to mobilisation and construction works at the site commencing, to capture all PPA required reporting by CONTRACTOR during construction.

16.4 Ministerial Statement 1180 Monitoring

The CONTRACTOR will be required to monitor environmental impacts during construction in relation to compliance with trigger and threshold criterion, implementation of trigger actions and contingency actions and compliance with management actions and targets where applicable for aspects requiring this stated within the MS 1180. Specifically, Conditions 4 Flora management, Conditions 5 Fauna Management, Conditions 6 Hydrogeological

Management, Conditions 7 Acid Sulfate Soils, Conditions 8 Surface Water Management, Conditions 9 Cultural Heritage and Conditions 10 Light Management.

Where the OWNER monitoring is required under these Conditions, the CONTRACTOR shall comply with the methodology and requirements stated within the associated Confirmed Management Plan as it relates to each aspect and construction activities being carried out by the CONTRACTOR (i.e., monitoring compliance with Condition 4-1 Flora outcomes during clearing activities). Despite the OWNER being accountable for all monitoring specified within the Confirmed Management Plans, during construction the CONTRACTOR will be responsible for several aspects to monitor (i.e., surface water quality) implement the OWNER's monitoring program and report back to the OWNER the monitoring results.

The CONTRACTOR have captured monitoring to be conducted during construction within the Environmental Inspection framework, as detailed in section 16.1 of this plan.

Each management protocol (Appendices) and construction sub-plan (Attachments) includes any conditional monitoring or reporting required under the regulatory approvals MS 1180 and EPBC 2018-8383.

16.5 Emissions Monitoring and Reporting

The CONTRACTOR will be applying for several Part V works approvals and licenses for the construction program. It is likely that these approvals and licenses will have conditions relating to emissions, discharges and associated monitoring and reporting to DWER.

Upon receiving these Part V works approvals, the CONTRACTOR shall include specific reporting requirements for each Schedule 1 approval and licence within this Section in a table format.

In addition, the CONTRACTOR shall record and report all Scope 1 and 2 emissions and energy consumption and production in accordance with the NGER Act 2007 to the CONTRACTOR Corporate Management Team and to the OWNER where required. The emissions threshold during construction for facilities and corporate is not expected to be exceeded, however emission data will be captured and maintained during construction. SCJV will use the NGERs reporting tool as per WeBuild/Clough NGER Annual Assessment.

16.6 Internal Environmental Audit

Auditing of the CONTRACTOR's Environmental Management System will be carried out in accordance with the Project internal audit schedule and the OWNER requirements stated within contract.

The environmental audit will be structured against the Project EMS and will include the auditing of subcontractors working under the CONTRACTOR. The audit shall be provided to the OWNER representative for approval prior to the commencement of works onsite. A

qualified and suitably experienced Environmental Auditor must conduct the Environmental Audits required during the Project works.

The CONTRACTOR Environmental Management representatives, in consultation with the CONTRACTOR Leadership Team will decide the scope and timing of project audits. The Audits must be carried out quarterly, with the first audit within four weeks of commencement of related works.

Audit schedules will reflect the status, importance and level of risk associated with the activity. The audit will evaluate compliance with the CEMP, EMS (ISO 14001), environmental approvals, environmental conditional confirmed plans (where they apply to construction) and associated documents, contracts and legislation.

16.7 Subcontractor Audits

The CONTRACTOR shall conduct environmental audits of individual Subcontractors' Works packages quarterly. These will be undertaken to establish whether activities and environmental management processes conform to planned arrangements and whether the CEMP has been properly implemented. The key requirements to be reviewed should include:

- Performance against targets, objectives and policy statements;
- Adequacy of resources and training
- Adequacy of controls; and
- Complaints and non-conformance management.

The audit schedule will be developed in consultation with the Subcontractor's Environmental Advisor within the first two weeks of their mobilisation to site. The CONTRACTOR will give the Subcontractor, in writing, a minimum of two weeks advance notice of planned audits and required attendees. Results of all audits will be communicated and discussed at management review meetings.

16.8 Independent External Audits

The CONTRACTOR will support auditing programs implemented by the OWNER and the relevant regulatory bodies who may be required to audit the Project. These external body audits could be carried out or on behalf of the following agencies:

- Pilbara Port Authority
- Environmental Protection Authority
- Department of Climate Change, Energy, Environment and Water
- Department of Water and Environmental Regulation
- Department of Jobs, Tourism, Science and Innovation

The CONTRACTOR Environmental representatives will provide the OWNER with any environmental compliance data that may be required to comply with EPBC approval (2018-8383) condition 20 and 21.

16.9 Demobilisation Audit

A demobilisation audit and associated report will be conducted on the conclusion of the Project by the CONTRACTOR Environmental Management Representative and provided to the OWNER representative.

16.10 Owner Environmental Audits

The OWNER will conduct audits of the CONTRACTOR work areas via an integrated audit schedule. The Key requirements will include:

- Performance against licensing and approvals conditions, project targets, objectives, and policy statements.
- Adequacy of resources and training.
- Adequacy of controls.
- Complaints and non-conformance management.

The audit schedule will be developed in consultation with relevant internal stakeholders and the CONTRACTOR. Results of all audits will be communicated and discussed at management review meetings.

16.11 Audit Reports

Audit Reports will be issued to the CONTRACTOR Project Management for review and endorsement. Non-conformances will be recorded as per the EMS and Project CEMP. The OWNER representative will be issued a copy of the Audit Report with supporting information once actions have been closed.

16.12 Compliance

The requirements stated in this CEMP are considered a minimum standard and compliance is mandatory. The audit and inspection regime conducted by the CONTRACTOR will monitor compliance with these requirements. Subcontractors will be responsible for managing their own audit and inspection schedule which is not to be undertaken in parallel with the CONTRACTOR's.

As per Condition 15-1 of MS 1180, the OWNER has prepared a Compliance Assessment Plan (CAP) that defines the method, approach, timing, and frequency of compliance reporting to the regulator. The CONTRACTOR shall provide supporting information to the OWNER to meet its requirements as per the CAP.

The Project approvals under various legislation including the Environmental Protection Act 1986, Environmental Protection and Biodiversity Conservation Act 1999 (EPBC) and the Aboriginal Heritage Act 1972 contain conditions that must be satisfied prior to the commencement and throughout Project construction.

Non-compliance with these Conditions could result in fines and penalties being levied against individuals and companies. The CONTRACTOR and all Subcontractors shall understand their legal obligations in relation to their scope of work and implement systems to monitor and ensure compliance with these requirements.

16.13 Non-Conformance Management & Corrective Actions

Non-conformances can be identified from a number of sources, including but not limited to incident investigations, audits, inspections and management reviews. Corrective actions will be systematically implemented and reviewed to ensure they adequately resolve the issue and minimise the risk of reoccurrence of the incident.

The CONTRACTOR will provide its own non-conformance tracking system for the Project. All Project corrective actions shall be entered into this system to enable close out of the incidents.

The CONTRACTOR Management Team is responsible for monitoring action items, ensuring that all corrective and preventative actions have been implemented and that there is systematic follow-up to ensure effectiveness.

The CONTRACTOR HSSE Data Management system (InControl) will be used to record, monitor and follow-up on action items. The Project shall also log all hazards into InControl, ensuring that the hazard is risk assessed and appropriate controls and any actions are assigned to manage the hazard.

All corrective actions arising from incidents, audits and inspections conducted by the CONTRACTOR will be tracked in the CONTRACTOR's non-conformance tracking system. The Subcontractor is required to implement the action and close them out by the specified date. Corrective actions where the initial risk level is high or extreme must be prioritised and closed in a timely manner.

Close-out of high and medium severity actions will be approved by the Project Manager. An Action Tracking Report will be developed that will include:

- Number of actions closed in the last period (month);
- Total number of actions added;
- Total number of actions;
- Number of actions overdue for closure.

Any changes to project systems and procedures as a result of corrective and preventive actions are managed according to the work site Management of Change Procedure.

The Subcontractor is responsible for managing its non-conformances and corrective actions within this system. A corrective actions register must be maintained by the Subcontractor and shall record all corrective actions identified and implemented including review of corrective actions and close out details. This register must be maintained on site by the Subcontractor. The close out details shall include the date closed and the name of the person verifying completion of the required action.

Where relevant, corrective actions identified should be included in periodic revision of the CEMP.

17. ENVIRONMENTAL INCIDENT MANAGEMENT

An environmental incident on the Project is any situation where a non-compliance with the MS 1180 and the EPBC 2018/8383 approval condition occurs, an adverse impact is caused

to the surrounding environmental values or where a gas, liquid or solid emission release occurs that does or could pose a threat to environmental values or be a breach of a Project approval or regulatory requirement. As a guide, this could include:

- Spill to open ground, waterway or marine system of a known or potentially contaminating liquid or solid material.
- Clearing or grubbing vegetation outside an approved area.
- Release of gas or vapours to atmosphere.
- Injury or death of fauna.
- Damage to rock art, aboriginal artefacts or other heritage values.
- Introducing weed contaminated soil or vegetation into uninfected areas.
- Erosion or deposition of sediment outside the Project's battery limits.
- Any uncontrolled fire.
- Uncovering naturally occurring hazardous or contaminating materials such as asbestos and other fibrous materials and acid sulphate soils.
- Excessive dust generation.
- Excessive noise emissions resulting in worker or community complaints.
- Wastes not being disposed of at an appropriately licensed facility.

The immediate response to all incidents is to make the area safe and undertake measures to prevent further environmental harm.

17.1 Project Notifiable Incidents

In context of the Project a notifiable incident is any incident where a non-compliance of the MS 1180 conditions or EPBC 2018/8383 conditions occurs. The CONTRACTOR is required to notify the OWNER immediately or as soon as practicable to ensure regulatory compliance can be adhered to the OWNER.

Any Sub-contractor working under the CONTRACTOR must report to the CONTRACTOR HSSE Deputy immediately where a notifiable incident occurs under their work package / area. All relevant information and data must also be provided to the CONTRACTOR as soon as practicable to ensure regulatory reporting can occur.

Notifiable incidents for the Project are included within Table 17-1. Regulatory reporting timeframes and the reporting and investigation process has been detailed in section 17. All notifiable incidents will be classified as Moderate to Catastrophic and the reporting of any incident which could be considered "notifiable" should be reported to the OWNER as per the Table 17-1.

Table 17-1 Notifiable Incidents

Condition (s) / Approval / License	Notifiable Incident	CONTRACTOR to provide Notification to:	Reporting to Regulator timeframe (OWNER Responsibility)	Further Reporting to Regulator
MS 1180	Any non-compliance with any conditions in MS 1180	OWNER Environmental & Heritage Manager who will notify DWER.	Written notification within seven Days	NA
EPBC 2018/8383	Any incident or non-compliance with the conditions; or non-compliance with the commitments made in plans (TSMP, AQMP, CHMP).	OWNER Environmental & Heritage Manager immediately who will notify DCCEEW.	Written notification within seven Days	Provide supporting information for the OWNER to provide to DCCEEW within seven days.
Condition 4-8 (MS 1180)	Where the following **flora outcomes** are not achieved or exceeded: ○ the extent of native vegetation clearing within the development envelope shall not exceed 73.05 ha ○ the extent of clearing within the vegetation community identified as Priority 1 (P1) Priority Ecological Community (PEC) - Burrup Peninsula Rock Pile Communities shall not exceed 0.16 ha	OWNER Environmental & Heritage Manager who will notify DWER and DCCEEW.	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance

Condition (s) / Approval / License	Notifiable Incident	CONTRACTOR to provide Notification to:	Reporting to Regulator timeframe (OWNER Responsibility)	Further Reporting to Regulator
Condition 4-8 (MS 1180)	Any Exceedance of threshold criteria specified in a Confirmed Flora Management Plan	OWNER Environmental & Heritage Manager who will notify DWER and DCCEEW	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance
Condition 5-6 (MS 1180)	Where the following **fauna Outcomes** are not achieved or exceeded: ○ clearing in the fauna habitat type identified as Rocky Outcrops shall not exceed 0.16 ha. ○ clearing in the fauna habitat type identified as Hummock Grasslands on Mid-slopes shall not exceed 49.17 ha. ○ clearing in the fauna habitat type identified as Samphire Shrublands / Supratidal flats shall not exceed 11.97 ha. ○ clearing in the fauna habitat type identified as Drainage Lines shall not exceed 2.7 ha: and ○ impacts to short-range endemic fauna species are avoided, unless it is demonstrated, and the CEO	OWNER Environmental & Heritage Manager who will notify DWER and DCCEEW	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance

Condition (s) / Approval / License	Notifiable Incident	CONTRACTOR to provide Notification to:	Reporting to Regulator timeframe (OWNER Responsibility)	Further Reporting to Regulator
	confirms in writing that the species occurs in a self-sustaining population outside the development envelope			
Condition 5-6 (MS 1180)	Any Exceedance of threshold criteria specified in the Confirmed Fauna Management Plan or Confirmed Threatened Species Management Plan	OWNER Environmental & Heritage Manager who will notify DWER and DCCEEW	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance
Condition 6-7 (MS 1180)	In the event that monitoring required by condition 6-6 indicates an exceedance of trigger levels.	OWNER Environmental & Heritage Manager who will notify DWER	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance
Condition 8-5 (MS 1180)	In the event the following environmental objective is not achieved: ○ maintain the hydrological regimes and quality of surface water so that environmental values are protected	OWNER Environmental & Heritage Manager who will notify DWER	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 21 days of the exceedance
Condition 8-5	Any exceedance of threshold criteria	OWNER Environmental	Written notification within	The CONTRACTOR will

Condition (s) / Approval / License	Notifiable Incident	CONTRACTOR to provide Notification to:	Reporting to Regulator timeframe (OWNER Responsibility)	Further Reporting to Regulator
(MS 1180)	specified in the Confirmed Surface Water Management Plan	& Heritage Manager who will notify DWER	seven Days	provide the OWNER with information required for the OWNER to provide a further report within 21 days of the non-achievement
Condition 9-5 (MS 1180)	Non-achievement of management targets within the Cultural Heritage Management Plan	OWNER Environmental & Heritage Manager who will notify DWER, DCCEEW, MAC, DPLH and the Register of Aboriginal Sites	Written notification within 21 days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 90 days of the exceedance
Condition 9-6 (MS 1180)	Non-achievement of management actions within the Cultural Heritage Management Plan	OWNER Environmental & Heritage Manager who will notify DWER, DCCEEW, MAC, DPLH and the Register of Aboriginal Sites	Written notification within seven Days	The CONTRACTOR will provide the OWNER with information required for the OWNER to provide a further report within 28 days of the non-achievement

17.2 Incident Management & Response

The process outlined in Figure 17-1 Owner Incident Response below will be followed by all the CONTRACTOR and Subcontractor personnel if an environmental incident occurs. It is a OWNER based Incident response and takes precedence over the CONTRACTOR response, unless the CONTRACTOR response is more stringent, in which case the CONTRACTOR response will be applied by the Project team. The Incident Management and Reporting must still follow the Clough CMS to ensure compliance with the CMS and the relevant ISO certifications.

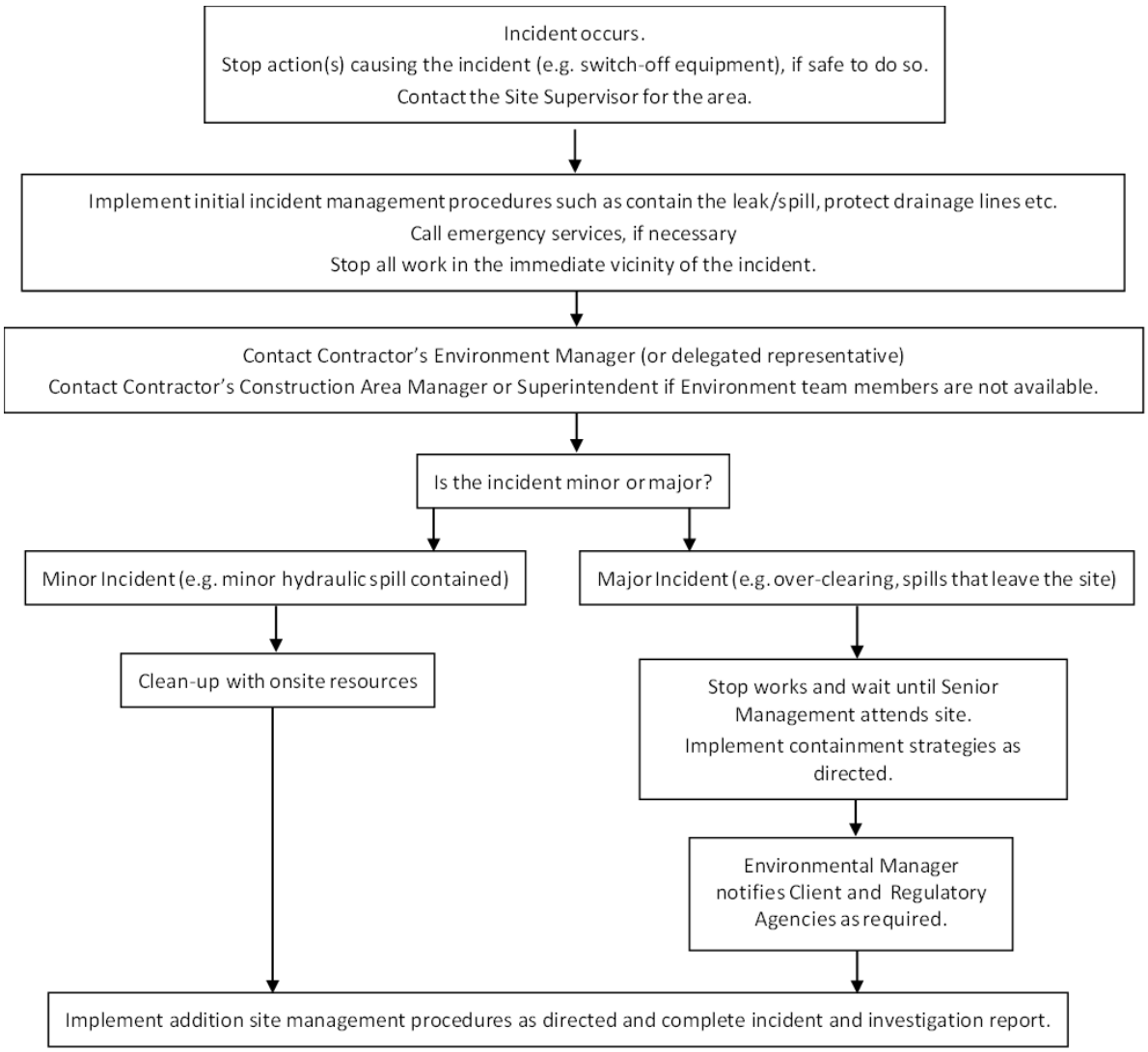

Figure 17-1 Owner Incident Response

All site personnel have a Duty of Care to report all incidents in the workplace. Personnel report these through supervisors, or via direct communication to Project Environmental

personnel. The CONTRACTOR upholds training which enables site personnel to identify and respond quickly to environmental incidents such as hydrocarbon or chemical spills (i.e., Spill Response Training).

17.3 Environmental Incident Notification and Reporting

All environmental incidents and near-misses that occur on the Project, including major non-compliances with Project procedures that have the potential to result in environmental impacts; regardless of its scale or nature, the CONTRACTOR's HSSE Manager (or their representative) is to be notified of the incident as soon as possible. Refer to the Incident Reporting Procedures of HSSE Incident Notification, Investigation and Reporting Procedure (0000-ZA-E-02940) and the HSSE Risk Matrix (0000-ZA-E-02990) included in Appendix C.

Environmental incidents, near misses, and non-compliances with MS1180 are to be reported to the CONTRACTOR HSSE Manager or other Project environmental personnel within one hour of occurrence / detection. The CONTRACTOR HSSE Manager or nominated CONTRACTOR Environmental Representative will inform the OWNER's Environmental Representative of the incident, and actions taken to mitigate impact to the environment.

The OWNER will be notified as soon as practicable where a Moderate to Catastrophic incident has occurred. In the case of minor incidents (Insignificant to Minor) the OWNER will be informed by end-of-shift or at the beginning of the next shift. Reporting to the OWNER must occur within 24 hours.

Formal, documented reporting of incidents will be completed using the Incident Injury Report Form (0000-ZA-E-02989) and InControl (CONTRACTOR's electronic incident management system). An Incident Injury Report Form will be submitted to the OWNER for all environmental incidents. The CONTRACTOR will submit an Incident Injury Report Form within the timeframes specified in Table 17-2 below. Access to InControl can be organised for the OWNER upon request.

In the event that an environmental incident results in the offsite discharge of contaminants to the environment that cannot be satisfactorily rectified within 24 hours, the OWNER, in consultation with the CONTRACTOR HSSE Manager or Environmental Lead, will contact the appropriate regulatory agencies.

Where the incident occurs during the Subcontractor oversight, the Subcontractor is to complete an incident report form and provide it to the CONTRACTOR's HSSE Manager or Environmental Lead as soon as practicable after the incident.

Depending on the nature of the incident, reporting and notification of incidents may need to be provided to external agencies or Regulators.

All incidents will be investigated at a level commensurate with the actual or potential consequence. Incidents with an actual or potential consequence of high and above, including those that breach regulations, licence or contractual conditions will include the CONTRACTOR in the incident's investigation.
Table 17-2 Environment Incident Notification and Reporting to OWNER

Incident severity	Notification	Reporting
Moderate to Catastrophic	As soon as practicable	Within 24 hours of the incident or event occurring
Insignificant to Minor	By end-of-shift / beginning of next shift	Within 48 hours of the incident occurring or having been detected

The Incident Injury Report Form will be modified to include all the following details:

- Description of incident (date, time, location, GPS co-ordinates, factual description of the incident)
- Incident type (Environmental impact, non-compliance, potential incident, community complaint)
- Incident classification
- Incident investigation findings
- Immediate actions taken; and
- Actions planned.

Subcontractors are encouraged to utilise the CONTRACTOR form, where subcontractors have an internal form, they are still required to complete the Incident Injury Report Form to ensure all data required by the Project is captured. All subcontractor environmental incidents are to be reported to the Project Environment Team as soon as practicable after the incident occurs.

The classification, notification and investigation of incidents are conducted in accordance with the CONTRACTOR HSSE Incident Notification, Investigation and Reporting Procedure (0000-ZA-E-02940). The Procedure applies to all the CONTRACTOR operations and activities including those carried out by subcontractors engaged in activities under the CONTRACTOR operational control.

The CONTRACTOR will provide the OWNER with any incident investigation and supporting data, documentation including contingency and management actions applied to the incident, to ensure the OWNER can adequately report to the applicable regulator.

17.4 Regulatory Incident Reporting

Unless otherwise required by legislation or approval and licence conditions, all regulatory reporting (incident related) for the Project will be made through the OWNER, rather than directly to the Regulator. This will include all notifications of reportable environmental incidents (i.e., notifiable incidents) to regulatory bodies. Sub-contractors should report to the CONTRACTOR and provide all relevant information, evidence, investigations etc to the CONTRACTOR to properly report to the OWNER.

The HSSE Manager will be notified of all events relating to a breach of regulatory obligations and will inform the OWNER of the event and the management actions taken.

Where the Project is notified by government agencies of a violation of regulatory requirements the HSSE Manager and the OWNER will be immediately notified.

Where the OWNER requests that the CONTRACTOR acts on their behalf with regulatory incident notification and reporting. The Environmental Management Team and Project Manager shall be responsible for this.

Where reporting or monitoring data is required to support any incident notification to the regulator (i.e., DWER), the CONTRACTOR will provide the OWNER with any relevant information.

17.4.1 Non-Compliance To Ministerial Statement 1180 Conditions and Confirmed Environmental Management Plans.

Non-compliances to Ministerial conditions have been determined in the Confirmed Environmental Management Plans (OWNER) and detailed within the CONTRACTOR's corresponding Environmental Management Sub-Plans. Actual or potential non-compliances with the MS 1180 conditions i.e., exceedances of threshold criteria, management actions or targets not being met, will be immediately reported to the OWNER Environmental & Heritage Manager with all relevant information. All reasonable actions directed by the OWNER Environmental & Heritage Manager to rectify the actual or potential non-compliances are to be undertaken. Within seven-days of a potential non-compliance being known, the OWNER shall report the non-compliance to the CEO of DWER (condition 15-5 of Ministerial Statement 1180) and within two days to the DCCEEW for incidents pertaining to the CHMP, TSMP and AQMP.

17.4.2 Confirmed Environmental Management Plans (Outcome-Based)

In the event that monitoring undertaken in accordance with the Confirmed Surface Water Management Plan (Condition 6 & Condition 8), Confirmed Flora Management Plan (Condition 4), Confirmed Fauna Management Plan and Confirmed Threatened Species Management Plan (Condition 5), and the Confirmed Air Quality Management Plan (Condition 2) indicates an exceedance of any threshold criteria specified within the Confirmed Environmental Management Plan and detailed within the corresponding CONTRACTOR Management Sub-Plans, the CONTRACTOR shall:

- Immediately notify the OWNER's Environmental Representative.
- Provide all information required by the OWNER Environmental & Heritage Manager in a timely manner to allow the OWNER to report the exceedance in accordance with Conditions 4-8, 5-6, 6-7 and 8-5 of Ministerial Statement No. 1180 (i.e., within seven days).
- Comply with conditions 4-8 (2), 4-8 (3), 4-8 (4) and 5-6 (2), 5-6 (3), 5-6 (4) and 6-7 (2), 6-7 (3) 6-7 (4), and 8-5 (2), 8-5 (3) and 8-5 (4) of MS 1180 in consultation with the OWNER, including doing all things required by the OWNER Environmental & Heritage Manager for this purpose.
- Provide all information required by the OWNER Environmental & Heritage Manager in a timely manner to allow the OWNER to prepare and provide a report to the CEO of DWER in accordance with conditions 4-8 (5), 5-6 (5), 6-7 (5) and 8-5 (5) (i.e., report required within 21 days).

17.4.3 Confirmed Environmental Management Plans (Management-Based)

In the event monitoring, tests, surveys or investigations indicate that management actions relating to construction phase and activities, specified in the Confirmed Cultural Heritage Management Plan (Condition 9), are not implemented or that management targets specified

in the Confirmed Cultural Heritage Management Plan are not achieved, the CONTRACTOR Shall:

- Notify the OWNER Environmental & Heritage Manager immediately.
- Provide all information required by the OWNER Representative in a timely manner to allow the OWNER to report the non-achievement in accordance with the conditions of MS 1180.
- Comply with conditions 9-5(2), 9-6 (2) of Ministerial Statement 1180 in consultation with the OWNER doing all things required by the OWNER (during construction) for this purpose.
- In a timely manner provide all information required by the OWNER Environmental & Heritage Manager to prepare and provide a report to the CEO of DWER, DCCEEW, DPLH, MAC and Registrar of Aboriginal Sites in accordance with conditions 9-5 (3) and 9-6 (4) of MS 1180 and condition 5 (b) of the EPBC 2018/8383 approval.

17.4.4 Non-Compliance With the EPBC 2018/8383

The CONTRACTOR must advise the OWNER Environment and Heritage Manager of any actual or potential contravention of the conditions of EPBC 2018-8383 immediately and provide all information and do all things reasonable required by the OWNER Environmental & Heritage Manager to rectify the actual or potential contravention and comply with conditions 18 and 19 regarding reporting of the non-compliance.

Table 17-3 EPBC Compliance Reporting

EPBC 2018-8383 Condition	Reporting non-compliance	Timeframe & Action by CONTRACTOR
18	The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must specify: a. any condition which is or may be in breach; b. a short description of the incident and/or non-compliance; and c. the location (including co-ordinates), date, and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	The CONTRACTOR will notify the OWNER immediately to ensure the OWNER can notify DCCEEW within **two (2) days** of becoming aware of the incident or non-compliance. The CONTRACTOR shall provide the OWNER with the specified information required during the notification to the DCCEEW.

19	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans, specifying: a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b. the potential impacts of the incident or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the approval holder.	The CONTRACTOR will notify the OWNER immediately to ensure the OWNER can notify DCCEEW as soon as practicable and no later than seven (7) business days after becoming aware of the incident or non-compliance. The CONTRACTOR shall provide the OWNER with the specified information required by the DCCEEW.

17.5 Incident Investigation

Incidents will be investigated in accordance with the HSSE Incident Notification, Investigation and Reporting Procedure (0000-ZA-E-02940). The incident investigation will be initiated immediately by the HSSE Manager, and the supervisor of the work group involved.

Responsibility and deadlines as agreed by the incident investigation team for approved close out actions will be clearly identified on the incident and injury investigation report form (0000-ZA-E-02989) managed through InControl (CONTRACTOR's electronic incident management system). The HSSE Manager will ensure the action items are closed out in an efficient and timely manner.

Incident investigation findings will be provided to the OWNER for their regulatory reporting.

17.6 Consequence Management

All personnel's behavioural non-conformances displayed on work sites (including; breaches of regulations, procedures, and processes) will be managed in accordance with Discipline and Termination Procedure (CORP-HR-PR-G-0012). Behavioural non-compliances will be reviewed by the SLT utilising the Incident Review Presentation Template to identify organisational lessons and improvements.

17.7 InControl Data Entry

All incident notifications and investigations will be entered into the CONTRACTOR incident management system (InControl). This system will also act as the Incident Register and allows the Project to monitor and analyse incident trends.

http://inx.australia.corp.clough.com/InControl/Default.aspx

17.8 Public complaints

All complaints received from the public are to be recorded in a complaint register which will record a minimum of the following:

- Contact details of the party raising the concern
- Details of the issue/incident (date, time, location, etc)
- Action taken or required
- Response of the party raising the concern to the action taken
- Actions taken to prevent reoccurrence.

Refer to Section 2 in the ESMS (0000-ZA-E-09072) for additional information and the public complaints register is managed by the Community Stakeholder and Engagement Manager.

Environmental complaints will be notified to the OWNER representative within 24 hours of being received.

17.9 Owner Complaints

A complaints register will be maintained by the CONTRACTOR Project Manager and record the issue or complaint the OWNER has against the CONTRACTOR or one of its Subcontractors.

Owner complaints will be managed by the quality team in accordance with Quality Management Plan (0000-ZA-E-800002).

The CONTRACTOR Project Manager will apply an adaptive approach to ensure that corrective actions are applied, in consultation with the OWNER. This will ensure modifications and improvements occur to the management of any environmental issues resulting from community complaints or OWNER issues with the CONTRACTOR and / or Subcontractors.

18. ENVIRONMENTAL REPORTING

18.1 CONTRACTOR Construction reporting

The CONTRACTOR is responsible for the preparation of overall Project related environmental reports including compiling data submitted by individual Subcontractors.

The CONTRACTOR will collect Environmental KPIs as a way of assessing the performance of the work and will submit site-based KPI reports, in accordance with HSSE Performance Monitoring and Reporting Procedure (0000-ZA-E-02939) and to meet the OWNER and regulator reporting requirements.

The report template should be updated periodically to reflect emerging approval conditions and it is the CONTRACTOR's responsibility to ensure they are using the most current version.

The Monthly Environmental Report should include:

- Description of construction activities undertaken for the month including a summary of current key environmental issues and risks
- An updated Environmental Impacts and Aspects Register
- Environmental Approvals Register, including status and copies of any obtained environmental approvals and associated conditions.
- A summary of spoil type and classification, spoil quantity and disposal locations for the month, ASS treatment and validation results, any unexpected finds and associated management actions (where applicable).
- Dewatering system records of construction progress (wells drilled, pipe installed etc.), a summary of system performance and configuration changes:
- Areas being dewatered.
- Water quality parameters pre and post treatment.
- Dewatering flow rates (instantaneous and cumulative).
- Groundwater levels
- Daily discharges from dewatering system with metering for each discharge point (seer, recharge well, settlement basin).
- Records of:
    - Water usage (potable vs non-potable)
    - Fuel usage (L)
    - Waste tonnage (T) and wastewater volumes (m3) including waste segregation – landfill, recyclables, hazardous wastes, hydrocarbons
    - Chemical usage (L)
    - Land cleared (ha).
- Summary of environmental incidents and corrective actions
- Summary of audit / inspection findings and corrective actions undertaken
- Summary of community and Stakeholder complaints
- Summary of key environmental risks for the next period and proposed mitigation measures
- Summary of environmental monitoring undertaken for the month and a copy of any environmental Reports or data
- Summary of environmental inductions, training or awareness sessions
- Relevant spatial data
- Additional Condition requirements of MS 1180 or other environmental approvals for the Project.
- NGERS data that could be required (i.e. Fuel usage, Energy use etc.)

The CONTRACTOR Environmental Team shall also compile data (as stated above) for a Project Environmental Report each month. This Report will be submitted to Corporate within the CONTRACTOR and forms part of the reporting requirements under the CONTRACTOR Management System (See Section 6), and in addition, this report can be provided to the OWNER to fulfil the OWNER reporting requirements.

Reporting requirements pertinent to construction of the Port is detailed in Section 18.

18.2 Subcontractor Reporting

All subcontractors working under the CONTRACTOR during the construction works, will be required to provide the CONTRACTOR HSSE Deputy or Environmental delegate with a monthly report. The subcontractor report will be provided to the CONTRACTOR on the same template and format that the CONTRACTOR report to the OWNER on (TBC) with all information as stated in section 18.2 that is relevant to the sub-contractor. The Subcontractor reports will be due on the last day of each month to allow the CONTRACTOR to compile relevant data and reports to the OWNER Environment and Heritage Manager within the first week of the new calendar month.

It is the responsibility of the Sub-contractor to notify the CONTRACTOR with all relevant information and data where an incident or non-compliance against a confirmed management plan or a condition within the MS 1180, EPBC 2018/8383 and s. 18 consent occurs. Any exceedance of a threshold as detailed within a confirmed plan or a non-achievement of a management action or target within the confirmed Cultural Heritage Plan must be reported to the CONTRACTOR HSSE Deputy immediately to allow for the required regulatory reporting within the relevant timeframes. For further information refer to the CEMP section 17 and 18.5.

NB: reporting dates will be confirmed prior to construction.

18.3 OWNER Environmental Reporting

The CONTRACTOR shall report Environmental Statistics to the OWNER as required. Refer to the Section 18.1 for reporting data that will be collated for internal reports that can be provided to the OWNER as required.

The CONTRACTOR is responsible for the preparation of overall Project related environmental reports including compiling data submitted by individual Subcontractors. The Subcontractor is responsible for undertaking environmental reporting on a monthly basis.

The report template should be updated periodically to reflect emerging approval conditions and it is the Subcontractors' responsibility to ensure they are using the most current version.

18.4 National Greenhouse Energy Reporting Scheme (NGERS)

By 31 October each year, Australian corporations that meet certain thresholds must report their emissions and energy information under the National Greenhouse and Energy Reporting (NGER) scheme. It is not expected that these thresholds will be exceeded during construction, however the CONTRACTOR shall record, and report data related to GHG emissions, energy production and energy consumption from facilities, plant and equipment during construction activities. The CONTRACTOR shall prepare a data collection and reporting framework and procedure for the works.

The report must include data relating to the following:

- Scope 1 emissions - (direct release of GHG's into the atmosphere as a direct result of an activity) (i.e. Fuel consumption, metal products, wastes).
- The information required should include the source of emission.
- The methods in the NGER Measurement Determination used to estimate the emissions.
- The total amount of GHG emitted from the source.
- Scope 2 emissions - (the release of a greenhouse gas into the atmosphere as a direct result of one or more activities that generate electricity, heating, cooling or steam that is consumed by the facility but that do not form part of the facility).
- Reportable when the electricity is consumed at the main electricity grid of WA.
- Consumed from a network other than the main grid
- Consumed from a direct connection from the producer.
- Energy production (extraction or capture of energy from natural sources and manufacture of energy by the conversion of energy from one form into another and;
- Energy consumption.

18.5 Reporting for Ministerial Statement No. 1180

The CONTRACTOR will be required to report on trigger and threshold non-compliances, implementation of trigger actions and contingency actions and compliance with management actions and targets where applicable for aspects requiring this stated within the MS 1180. Specifically, Conditions 4 - Flora management, Conditions 5 - Fauna Management, Conditions 6 -Hydrogeological Management, Conditions 7 - Acid Sulfate Soils, Conditions 8 - Surface Water Management, Conditions 9 - Cultural Heritage and Conditions 10 - Light Management.

Where monitoring and reporting is required under these Conditions, the CONTRACTOR shall comply with the methodology and requirements stated within the associated Confirmed Management Plan as it relates to each aspect and construction activities.

The following Construction Management Sub-Plans Attachment A – Water Quality, Erosion and Sediment Control Management Plan (Condition 8), Attachment B – Flora and Vegetation Management Sub-Plan, Attachment C – Fauna Management Sub-Plan and Attachment D – Cultural Heritage Management Sub-Plan include the required CONTRACTOR reporting and response actions where a trigger, threshold or management/action and target is not achieved during construction works.

An Acid Sulfate Soils Management Plan has been prepared and includes relevant reporting and response actions where a trigger, threshold or management/action and target is not achieved during construction works (in accordance with conditions 6 and 7).

18.5.1 MS No. 1180 Reporting Summary

Table 18-1 provides a summary of environmental reporting requirements where non-compliance or other reporting specified by the MS 1180. The CONTRACTOR must provide the OWNER Environmental & Heritage Manager with any required information to meet these reporting timeframes and requirements.

Table 18-1 MS No. 1180 Reporting Summary

Condition	Reporting Requirement	Reporting Timeframe
4-8 (1) **5-6 (1)** **6-7 (1)** **8-5 (1)**	Advise the CEO within seven days (7 days) of the non-compliance or the exceedance of trigger or threshold in writing.	The CONTRACTOR will provide data and information relating to the exceedance **within Seven (7 days).**
4-8 (5) **5-6 (5)** **6-7 (5)** **8-5 (5)**	Provide a report to the CEO of the exceedance that includes the points listed above in section 2.4.4 (5).	The CONTRACTOR will provide data and information to enable the OWNER to prepare a report **within 21 days.**
9-5 (1)	Report the non-achievement of management targets in writing to the CEO, the Murujuga Aboriginal Corporation, the DPLH, and the Registrar of Aboriginal Sites.	The CONTRACTOR will provide data and information to enable the OWNER to prepare a report **within 21 days** of the non-achievement being identified.
9-5 (3)	Provide a further report to the CEO, the Murujuga Aboriginal Corporation, the DPLH, and the Registrar of Aboriginal Sites which must include: (a) a description of the cause of management target(s) being exceeded if known, or analysis of likely causes if not known; (b) the findings of the investigation required by condition 9-5(2); (c) details of revised and/or additional management actions to be implemented to prevent non-achievement of the management target(s); and (d) relevant changes to proposal activities.	The CONTRACTOR will provide data and information to enable the OWNER to prepare a report **within 90 days** of the non-achievement being reported as required by condition 9-5(1)
9-6 (1)	Report the failure to implement the management action(s) in writing to the CEO, the Murujuga Aboriginal	The CONTRACTOR will provide data and information to enable

	Corporation, the DPLH, and the Registrar of Aboriginal Sites	the OWNER to prepare a report **within seven days** of identification of a management action not being implemented.
9-6 (4)	Provide a further report to the CEO, the Murujuga Aboriginal Corporation, the DPLH, and the Registrar of Aboriginal Sites, which must include: (a) cause for failure to implement management action(s); (b) the findings of the investigation required by condition 9-6(2); (c) relevant changes to proposal activities; and (d) measures to prevent, control or abate the environmental harm which may have occurred.	The CONTRACTOR will provide data and information to enable the OWNER to prepare a report **within 28 days** of the non-compliance being identified.
15	Provide a Compliance Assessment Report to the CEO addressing the requirements within Condition 15-7.	The CONTRACTOR to provide the OWNER with relevant compliance data and information **annually** to ensure the CAR can be completed as per timeframe below. 24 April 2023 (First CAR due) Annually following submission of first CAR.

18.5.2 Compliance Assessment Reporting

The CONTRACTOR shall supply any relevant environmental data and documentation specific to the Conditions stated within the MS 1180, particularly in accordance with clause 15. The CONTRACTOR recognise that it lies with the OWNER to prepare and submit the Compliance Report in accordance with conditions stated under clause 15 of MS 1180 and the CONTRACTOR will adhere to a supporting role during the preparation of this Report.

The Table 18-2 below sets out the applicable criteria and management actions to construction that the CONTRACTOR will be required to report to the OWNER on, for inclusion in the Annual Compliance Assessment Report. The first compliance Assessment Report is due on the 24 April 2023.

Table 18-2 Ministerial Condition compliance (MS No. 1180)

Flora & Vegetation Condition 4				
Ministerial Condition	**Environmental Criteria**	**Flora & Vegetation Outcomes & Objectives**	**Status justification**	**Status**
4-1 (1)	Trigger Criterion 1 Trigger Criterion 4 FVM 1 FVM 3 FVM 4 FVM 5	The extent of native vegetation clearing within the development envelope did not exceed 73.05 ha	*[Comment as Required]*	Achieved Not Achieved
4-1 (2)	Trigger Criterion 2 Trigger Criterion 3 Trigger Criterion 4 FVM 1 FVM 3 FVM 4 FVM 5 FVM 6 FVM 7 FVM 8	The extent of clearing within the vegetation community identified as Priority 1 (P1) Priority Ecological Community (PEC) - Burrup Peninsula Rock Pile Communities did not exceed 0.16 ha	*[Comment as Required]*	Achieved Not Achieved
4-2 (1)	FVM 1 FVM 2 FVM 5 FVM 9 FVM 10 FVM 11 FVM 13	All direct impacts (other than the direct impacts authorised under Condition 4-1) were avoided, and indirect impacts to native vegetation were minimised.	*[Comment as Required]*	Achieved Not Achieved
Native Fauna & Threatened Fauna Condition 5				
Ministerial Condition	**Environmental Criteria**	**Fauna Outcomes & Objectives**	**Status justification**	**Status**
5-1(1)	FaMP Trigger Criterion 2	clearing in the fauna habitat type identified as Rocky	[Comment as Required]	Achieved

	FaMP Threshold Criterion 2	Outcrops shall not exceed 0.16 ha;		Not Achieved
5-1(2)	FaMP Trigger Criterion 3 FaMP Threshold Criterion 3	clearing in the fauna habitat type identified as Hummock Grasslands on Mid-slopes shall not exceed 49.17 ha;	[Comment as Required]	Achieved Not Achieved
5-1(3)	FaMP Trigger Criterion 4 FaMP Threshold Criterion 4	clearing in the fauna habitat type identified as Samphire Shrublands / Supratidal flats shall not exceed 11.97 ha;	*[Comment as Required]*	Achieved Not Achieved
5-1(4)	FaMP Trigger Criterion 5 FaMP Threshold Criterion 5	clearing in the fauna habitat type identified as Drainage Lines shall not exceed 2.7 ha; and	*[Comment as Required]*	Achieved Not Achieved
5-1(5)	FaMP Trigger Criterion 6 FaMP Threshold Criterion 6	impacts to short-range endemic fauna species are avoided, unless it is demonstrated, and the CEO confirms in writing that the species occurs in a self-sustaining population outside the development envelope.	*[Comment as Required]*	Achieved Not Achieved
5-1(5)	FaMP MT 22 FaMP MT 23	impacts to short-range endemic fauna species are avoided, unless it is demonstrated, and the CEO confirms in writing that the species occurs in a self-sustaining population outside the development envelope.	*[Comment as Required against each MT]*	Achieved Not Achieved
5-2(1)	TSMP Triggers and Thresholds stated within ATTACHMENT C of the TSMP. FaMP MT 2 FaMP MT 3 FaMP MT 4 FaMP MT 5	minimise direct and indirect impacts to the northern quoll, Pilbara olive python and the ghost bat within the development envelope.	[*Comment as Required against each MT*]	Achieved Not Achieved

	FaMP MT 6 FaMP MT 7 FaMP MT 8 FaMP MT 9 FaMP MT 10 FaMP MT 12 FaMP MT 13 FaMP MT 14 FaMP MT 15 FaMP MT 16 FaMP MT 17 FaMP MT 18 FaMP MT 19 FaMP MT 21			
Surface Water Condition 8				
Ministerial Condition	**Environmental Criteria**	**Surface Water Outcomes & Objectives**	**Status justification**	**Status**
8-1 (1)	**Trigger Criterion 1** Presence of backwater or ponding of water from the edge of the development envelope over a period of two consecutive days from the date ponding was identified at distances further than 6 m.	Maintain the hydrological regimes and quality of surface water so that environmental values are protected.	*[Comment as Required]*	Achieved Not Achieved
	Threshold Criterion 1 Presence of backwater or ponding of water from the edge of the		*[Comment as Required]*	Achieved Not Achieved

	development envelope over a period of two consecutive days from the date ponding was identified at distances further than 10 m.			
	Trigger Criterion 2 Surface water quality trigger criteria. (Refer to the Confirmed SWMP).		*[Comment as Required]*	Achieved Not Achieved
	Threshold Criterion 2 Surface water quality threshold criteria. (refer to the Confirmed SWMP).		*[Comment as Required]*	Achieved Not Achieved
	Trigger Criterion 3 Groundwater quality trigger criteria.		*[Comment as Required]*	Achieved Not Achieved
	Threshold Criterion 3 Groundwater quality threshold criteria.		*[Comment as Required]*	Achieved Not Achieved
	Trigger Criterion 4		*[Comment as Required]*	Achieved

	Groundwater level trigger criteria.			Not Achieved
	Threshold Criterion 4 Groundwater level threshold criteria.		*[Comment as Required]*	Achieved Not Achieved

Light Management Condition 10

Ministerial Condition	Environmental Criteria	Light Management Objectives	Status justification	Status
10-1 (1)	LMPT 2 LMPT 5 LMPT 6	Avoid, where possible, and otherwise use best practice technology and risk-based management actions to minimise nightglow and light overspill from the proposal so that the environmental values of amenity at sensitive locations, including, but not limited to Hearson Cove and Deep Gorge, are protected.	[Comment as Required]	Achieved Not Achieved

Cultural Heritage Management Condition 9

Ministerial Condition	Environmental Criteria	Cultural Heritage Management Objectives	Status justification	Status
9-1(1)	CHM T 1 CHM T 4 CHM T 5 CHM T 6 CHM T 7 CHM T 8 CHM T 11 CHM T 12 CHM T 17 CHM T 21	avoid, where possible, and otherwise minimise direct and indirect impacts to social, cultural, heritage, and archaeological values within and surrounding the development envelope	[Comment as Required]	Achieved Not Achieved

	CHM T 23 CHM T 31			
9-1(2)	CHM T 9	allow ongoing Traditional Owners and Custodian access to enable traditional activities and connection to culturally significant areas within and surrounding the development envelope as shown in Figure 2;	[Comment as Required]	Achieved Not Achieved
9-1(4)	CHM T 15 CHM T 16 CHM T 23 CHM T 27	avoid, where possible, and otherwise minimise direct and indirect impacts to visual and amenity impacts to social and cultural places and activities	[Comment as Required]	Achieved Not Achieved

18.6 Reporting For the EPBC Approval 2018/8383

The CONTRACTOR will be required to provide the OWNER Environmental & Heritage Manager with any relevant and accurate records, data, information or documentation during construction substantiating all activities in its control associated with or relevant to the conditions of EPBC Approval 2018/8383 that will support the OWNER's requirement to provide the DCCEEW with an Annual Compliance Report in accordance with Condition 17 of the EPBC Approval 2018/8383.

The first Annual Compliance Report is required by DCCEEW 12-months following the commencement of the Project. The CONTRACTOR should provide the required records within two months of the 12-month anniversary of the commencement of the Project construction (defined as any vegetation clearing or construction of infrastructure, excluding construction fences, signage or geotechnical investigations where no vegetation clearance is required).

The CONTRACTOR will also be required to notify the OWNER Environmental & Heritage Manager immediately where any incident or non-compliance with conditions or commitments made within the Confirmed Management Plans (TSMP, AQMP and CHMP) has occurred, so that the OWNER can notify the DCCEEW within the specified timeframes.

The CONTRACTOR Construction Fauna Management Sub-Plan and the Construction Cultural Heritage Management Sub-Plan detail the response actions and responsibilities of the CONTRACTOR in relation to the EPBC Approval 2018/8383.

Section 18.6 detail reporting of non-compliance and timeframes required under the EPBC Approval 2018/8383.

18.7 S.18 Annual Reporting

The OWNER is required to provide an annual report to the Registrar of Aboriginal sites advising to what extent the Purpose has impact on all or any sites located on the Land. The CONTRACTOR will ensure all relevant information and data is provided to the OWNER to ensure annual reporting can be carried out in accordance with MN-2021-0354-3.

19. PLAN REVIEW & CONTINUAL IMPROVEMENT

Ongoing monitoring of the environmental performance throughout Project construction will be undertaken to ensure environmental concerns are identified and addressed in a timely manner. This includes monitoring the key characteristics of construction and activities that may have significant environmental impacts, such as operational controls, conformance with objectives and periodic evaluation of compliance with legislation and regulations.

Findings of monitoring and measurement processes will be reviewed periodically and reported through monthly reports and a management review twice a year. The monthly reports will provide information to satisfy approval conditions while the management review will be a self-evaluation audit of conformity to corporate environmental management system requirements.

Regular environmental inspections conducted by the CONTRACTOR's Environmental Representatives will provide assurance that Subcontractors are continually addressing environmental issues and are implementing a process of continual improvement.

Additional monitoring may be required by the Subcontractor to understand potential exceedances or non-conformances, such as, but not limited to excessive noise levels at sensitive receivers, weed establishment on site and discharge water quality.

Regular reviews of this CEMP and complimenting procedures shall be conducted at least annually or to comply with the Clough CMS Audit schedule, to ensure system and legislative compliance. However, non-conformances, breaches, contract amendments and environmental approvals may trigger a review and update of this CEMP at any point during the construction program. In addition, a change in scope or risk profile could trigger a review and update of the CEMP. All reviews and amendments to this CEMP will be recorded as per the Clough document control system (Section 6.1). Version history of this document is provided at the front of this CEMP.

19.1 Proposal Changes & Environmental Harm

Where there have been relevant changes to proposal activities and/or environmental harm (as defined in the EP Act 1986) has occurred, the CONTRACTOR shall:

- Immediately notify the OWNER Environmental & Heritage Manager
- Provide all information required by the OWNER Environmental & Heritage Manager in a timely manner to allow the OWNER to report the change / incident to DWER.
- Provide all information required by the OWNER in a timely manner to allow the OWNER to prepare and provide a report to the CEO of DWER in accordance with the conditions 4-8 (4), 5-6 (4), 8-5 (4) (9-5 (3), 9-6 (4), 10-2 (4) MS 1180.

19.2 MS No. 1180 & EPBC Approval 2018/8383 Confirmed Plan Reviews

As this CEMP contains Conditions and requirements that are stated within the various Confirmed Management Plans required under the MS 1180 & EPBC Approval 2018/8383, The CONTRACTOR shall ensure that when these Confirmed Plans are updated, this Plan shall subsequently be updated to reflect changes.

20. DEMOBILISATION

Two demobilisation audits are to be conducted; one three months prior to the completion of demobilisation and one on the planned last day of demobilisation by the CONTRACTOR (pre-demobilisation audits may be arranged between the OWNER and the CONTRACTOR prior to and during demobilisation). These audits are included in Section 16.9 Demobilisation Audit.

21. APPENDICES

APPENDIX A – APPROVAL CONDITIONS COMPLIANCE TABLE

The approval conditions in the below table relate to the construction works only, a full scope of the environmental conditions are included within the OWNER PEMP.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
Compliance with the **EPBC Act** Approval conditions (2018/8383)	The CONTRACTOR will comply with the relevant conditions to the construction phase of the EPBC 2018/8383 Approval and support the OWNER with management, monitoring and reporting requirements as per the contract and where it the conditions apply to the construction activities being carried out by the CONTRACTOR team.	Part A 1.	To avoid and mitigate **impacts** to **protected matters**, the approval holder must not **clear** outside the **disturbance footprint** and must comply with Conditions 1, 4-1 and 5 of the **Western Australian Approval.**	Refer to Attachment B.
		2.	To avoid and mitigate **impacts** to **protected matters**, the approval holder must implement the approved **Threatened Species Management Plan,** or a subsequently revised version approved by the **Minister**.	Refer to Attachment C

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		3.	In the event that the approval holder becomes aware of any exceedance of a threshold criterion specified in the **Threatened Species Management Plan**, the approval holder must: a. Undertake the actions required under condition 5-6 of the **Western Australian Approval** and included an assessment of any **impact(s)** to **protected matters** arising from the exceedance.	Refer to Attachment C. Note: the CONTRACTOR will provide the OWNER with data and exceedance information where an exceedance of a trigger occurs during construction.
		4.	To minimise **impacts** on the **National Heritage listed – Dampier Archipelago (Burrup Peninsula)**, the approval holder must: a. comply with condition 1 of the **Western Australian Approval** to ensure no Aboriginal Cultural Heritage Sites other than the **Three Aboriginal Cultural Heritage Sites** within the **development envelope** are directly **impacted**; b. ensure there are no direct and indirect **impacts** to the **Fish Thalu Aboriginal Heritage Site** from changes in tidal water flow movements within the King Bay / Hearson Cove supratidal to intertidal flat area due to the development and use of the **causeway**; and	Refer to Attachment D.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			c. not **impact** more than 0.97 hectares of the **National Heritage listed – Dampier Archipelago (Burrup Peninsula)**.	
		5.	To minimise **impacts** on the **National Heritage listed – Dampier Archipelago (Burrup Peninsula),** the approval holder must comply with condition 9 of the **Western Australian Approval** to develop and implement a **Cultural Heritage Management Plan**. In addition, the approval holder must: a. provide a complete copy of the **Cultural Heritage Management Plan** to the **Department** within 10 **business days** of the approval of any revised version by the **CEO**; b. provide any reports required to be prepared under conditions 9-5 and 9-6 of the **Western Australian Approval** to the **Department** for review within the same timeframes specified in those conditions; and c. if a non-achievement of a management target or management action, as set out in **Cultural Heritage Management Plan**, is identified: i. submit to the **Department** for the **Minister's** approval a version of the **Cultural Heritage**	Refer to Attachment D. Note: the CONTRACTOR will provide the OWNER with data and exceedance information where an exceedance of a trigger or management action relating to cultural heritage occurs during construction. The CONTRACTOR will comply with the requirements stated within the Cultural Heritage Management Plan.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			Management Plan revised to address the findings of any report provided under conditions 9-5 and 9-6 of the **Western Australian Approval**; and ii. if the **Minister** has approved a revised **Cultural Heritage Management Plan**, implement the **Cultural Heritage Management Plan**.	
		PART B 13.	**Compliance records** 13. The approval holder must maintain accurate and complete **compliance records**.	Refer to Section 16 and 18. The CONTRACTOR will provide the OWNER with relevant compliance data captured during the Construction period, for the OWNER to ensure accurate and completed compliance records are maintained.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		14.	If the **Department** makes a request in writing, the approval holder must provide electronic copies of **compliance records** to the **Department** within the timeframe specified in the request. **Note**: **Compliance records** may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the **Department**'s website or through the general media.	
		17.	The approval holder must prepare an **annual compliance report** for each 12-month period following the date of **commencement of the action**, or otherwise as agreed in writing by the **Minister**. The approval holder must: a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12-month period; b. notify the **Department** by email that a **compliance report** has been published on the **website** and provide the weblink for the **annual compliance report** within 5 **business days** of the date of publication. This notification must include	Refer to Section 16 and 18. The CONTRACTOR will provide the OWNER with relevant compliance data captured during the Construction period, for the OWNER to ensure the annual compliance report can be prepared by the OWNER .

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			documentary evidence of the date of publication of the compliance report; c. keep all **annual compliance reports** publicly available on the **website** until this approval expires; d. exclude or redact **sensitive ecological data** from **annual compliance reports** published on the **website**; and e. where any **sensitive ecological data** has been excluded from the version published, submit the full **annual compliance report** to the **Department** within 5 **business days** of publication.	
		18.	**Reporting non-compliance** The approval holder must notify the **Department** in writing of any: **incident;** non-compliance with the conditions; or non-compliance with the commitments made in **plans**. The notification must be given as soon as practicable, and no later than 2 **business days** after becoming aware of the **incident** or non-compliance. The notification must specify: a. any condition which is or may be in breach; b. a short description of the **incident** and/or non-compliance; and	Refer to Section 16, 17 and 18. The CONTRACTOR will provide the OWNER with relevant non-compliance data captured during the Construction period, for the OWNER to ensure the incidents and non-compliance with

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			c. the location (including co-ordinates), date, and time of the **incident** and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	commitments and conditions in plans is reported by the OWNER.
		19.	The approval holder must provide to the **Department** the details of any **incident** or non-compliance with the conditions or commitments made in **plans** as soon as practicable and no later than 7 **business days** after becoming aware of the **incident** or non-compliance, specifying: a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b. the potential **impacts** of the **incident** or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the approval holder.	Refer to Section 16, 17 and 18. The CONTRACTOR will provide the OWNER with relevant non-compliance data captured during the Construction period, for the OWNER to ensure the incidents and non-compliance with commitments and conditions in plans is reported by the OWNER.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		20.	Independent audit The approval holder must ensure that independent audits of compliance with the conditions are conducted as requested in writing by the Minister.	Sections 16.8 and 16.9 CONTRACTOR shall support the OWNER during the construction activities where the Minister requests independent audits.
Compliance with the s.18 **AH Act** conditions of consent.	The CONTRACTOR Project Team will comply with all conditions applicable to maintaining s.18(3) consent to disturb heritage sites during construction phases of the Project and support OWNER as required by the contract, with consultation, management, monitoring and reporting under the conditions.	1	Develop, in consultation with Murujuga Aboriginal Corporation (MAC), including the MAC Circle of Elders, a Cultural Heritage Management Plan (CHMP) prior to the commencement of ground disturbance works, identifying a clear management strategy for the salvage of Aboriginal sites ID 18615 (DRD 136), ID 19239 (DRD 144), and ID 19874 (Burrup Service Corridor 2), which is to include protection of Aboriginal sites on the Land and monitoring and management of the Aboriginal heritage places and sites during the construction and operation of the Project.	Refer to the Confirmed **Cultural Heritage Management Plan**
		2	Invites in writing, giving 30 days' notice, for two Murujuga Aboriginal Corporation (MAC) representatives from each of the five groups, Ngarluma, Yindjibarndi, Mardudhunera, Wong-Goo-Tt-Oo and Yaburara, to be present for ground disturbing works on the Land where it intersects with Aboriginal sites.	Refer to the Confirmed **Cultural Heritage Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		3	Provides an annual written report to the Registrar of Aboriginal sites advising to what extent the Purpose has impacted on all or any sites located on the Land.	Refer to the Confirmed **Cultural Heritage Management Plan**
		4	Provides a written report to the Registrar of Aboriginal Sites within 60 days of the completion of the Purpose, advising whether and to what extent the Purpose has impacted on all or any sites located on the Land. The final report should include a detailed description of: a). what extent the Purpose has impacted any Aboriginal site on the Land; b). where any Aboriginal site has been impacted, whether such site has been partially or wholly impacted by the Purpose, and the level, effect and type of any such impact - preferably by the provision of photographs taken before and after the impact; c). where any Aboriginal site has been subject to archaeological or cultural salvage, when and how such salvage took place, who was present at the salvage and where the material was re-located, the results of the salvage and any subsequent analysis conducted; d). the results and findings of any monitoring of ground	Refer to the Confirmed **Cultural Heritage Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			disturbing works associated with the Purpose; and e). what extent the site has been remediated	
Compliance with the **EP Act** outlined in the Ministerial Statement 1180		1	When implementing the proposal, the OWNER shall ensure the proposal does not exceed the following extents or ranges:	

Project Area Approvals

Aspect	Objective	Condition Reference	Conditions	Where addressed

Proposal element	Location *(as defined by the proposal amended under s 43A (12 May 2021))*	Maximum extent or range
Physical elements		
Development envelope (Site C and F)	Figures 1, 2, 3 & 4	106.7 ha
Disturbance footprint (Site C and F)	Figures 1, 2, 3 & 4	73.05 ha. Avoiding Cultural Heritage Sites IDs 9439, 26008, 9296, and MAC 004.
Laydown Area (Site F)	Figure 2	6.8 ha (temporary and episodic use).
Utility Block (Site C)		Power generation (installed Combined Cycle Gas Turbine – 100 MW capacity and installed solar – 3.5 MW capacity).
Operational elements		
Urea production plant	Figure 2	6,200 t/day
Ammonia plant	Figure 2	3,500 t/day
Saline water discharge		20 GL/yr (including excess treated wastewater) discharged into the existing Water Corporation Multi-User Brine Return Line.
Product storage areas	Figure 2	Urea (plant site): 75,000 t capacity, fully enclosed shed. Urea (Dampier Port site): 75,000 t capacity, fully enclosed shed.
Urea shiploading system	Figure 2	Loading capacity of 2,200 t/h
Causeway	Figure 2	Culvert outflow velocities of less than 1.0 m/s
Timing elements		
Project life		Up to 80 years from date of this Statement

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
.	2-1 The OWNER shall ensure that implementation of the proposal achieves the following environmental outcome: (1) ensure that no air emissions from the proposal have an adverse impact accelerating the weathering of rock art within Murujuga beyond natural rates	2-2	If: (1) the Minister notifies the OWNER, for the purposes of this Condition, of one or more air quality standards (including standards derived from the results of the Murujuga Rock Art Monitoring Program); and (2) the OWNER complies with all those standards, and any amendments to the standards which are the subject of a notification to the OWNER by the Minister for the purposes of this Condition, the OWNER is taken to have achieved the outcome specified in Condition 2- 1.	Refer to Confirmed **Air Quality Management Plan**
		2-3	Not more than six months prior to the planned Commencement of Operations, or such greater time approved in writing by the CEO, the OWNER shall submit to the CEO and the DCCEEW a revised version of the Project CERES Environmental Management Plan Air Quality (Final Version PCF 2, 25 March 2021) (Air Quality Management Plan), which is prepared in consultation with the Murujuga Aboriginal Corporation and shall: (1) set out measures that will be taken to achieve each of the following outcomes and objectives:	Refer to Confirmed **Air Quality Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(a) subject to Condition 2-2, compliance with the environmental outcome in Condition 2-1(1), specifically that no air emissions from the proposal have an adverse impact accelerating the weathering of rock art within Murujuga beyond natural rates; (b) compliance with all air quality objectives and standards (including those derived from the results of the Murujuga Rock Art Monitoring Program), and any amendments to those objectives and standards, which are the subject of a notification to the OWNER by the Minister for the purposes of Condition 2-2 and/or Condition 2-7(3); and (c) seek to maintain regional air quality in accordance with the National Environment Protection (Ambient Air Quality) Measure by the minimisation of air emissions from the proposal. (2) be informed by monitoring data collected before Commencement of Operations which establishes a scientifically valid and robust baseline (the methodology for which has been subject to a peer review by an independent person or independent persons with suitable technical experience on the suitability of the methodology used to gather the baseline data) which is sufficient to measure whether the environmental outcome specified in Condition 2-1(1) and the environmental outcomes and objectives specified in Condition 2-3(1) have been achieved;	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(3) specify all of the expected air emissions from the proposal and their sources based on the air pollution control technology selection and plant design for the proposal at the time operations are proposed to commence and at the time of any review of the plan; (4) include a comparison of the expected air emissions for the proposal against international industry best practice for urea production facilities at the time operations are proposed to commence (or at the time of any future review of the plan); (5) include a comparison of the air pollution control technology selection and plant design for the proposal against international industry best practice for urea production facilities at the time operations are proposed to commence (or at the time of any future review of the plan); (6) identify and describe the measures that the OWNER will implement to minimise all air emissions, including the adoption of advances in air pollution control technology and process management since the date of this Statement (or since the date of the last plan review), to ensure that these are consistent with international industry best practice at the time of plan commencement or review, and specify: (a) the timeframe within which each measure will be implemented; and (b) the method to determine the effectiveness of each measure in minimising air emissions;	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(7) include provisions for monitoring and reporting to the CEO at least annually of: (a) all air emissions produced by the proposal; (b) on-site meteorological conditions including wind speed / direction, temperature, and rainfall rate; (c) ambient ground level concentrations for air emissions that have the potential to impact on human health, amenity, and rock art; (d) the implementation of measures required to be included in the Air Quality Management Plan by Condition 2-2-3(1); and (e) any exceedance of trigger criteria and threshold criteria; (8) include provisions requiring the Air Quality Management Plan to be amended in any future reviews to incorporate updated management actions; (9) include a trajectory of proposed air emission reductions for the life of the proposal; (10) specify scientifically valid and robust: (a) trigger criteria that will trigger the implementation of management and/or contingency actions (including changes to operations and reductions in emissions) to prevent non-compliance with the Air Quality Management Plan and to ensure that the outcome in condition 2-1 and outcomes and objectives in condition 2-3(1) will be achieved; (b) threshold criteria that will demonstrate that the outcome in	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			condition 2-1(1) and outcome and objectives in condition 2-3(1) are being achieved; (c) Adaptive monitoring program to determine if trigger criteria and threshold criteria have been met; (d) management and/or contingency actions (including changes to operations and reductions in emissions) to be implemented if the trigger criteria required by condition 2-3(10)(a) and/or the threshold criteria required by condition 2-3(10)(b) are exceeded; (11) include a report of a peer review carried out by an independent person or independent persons with suitable technical experience to review the final draft of the Air Quality Management Plan before it is submitted to the CEO as it relates to each of the items in condition 2-3(10) and to report on the adequacy of that content to achieving the outcome in condition 2-1(1) and outcome and objectives in condition 2-3(1); (12) provide the format and timing for the reporting to the CEO of monitoring results against trigger criteria and threshold criteria over the reporting period in the Compliance Assessment Report required by condition 15-6; and (13) subject to the peer reviews identified in conditions 2-3(2) and 2-3(11), set out reasons for selection or adoption of the measures, criteria, monitoring program and management and/or contingency actions included in the Air Quality	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			Management Plan, including discussion of other options considered.	
		2-4	The OWNER must not undertake the Commencement of Operations until the CEO has confirmed in writing that the Air Quality Management Plan submitted under Condition 2-3 addresses the requirements of Condition 2-3.	Refer to Confirmed **Air Quality Management Plan**
		2-5	The OWNER shall implement the most recent version of the Confirmed Air Quality Management Plan until the CEO has confirmed by notice in writing that the OWNER has demonstrated that the environmental outcome in Condition 2-1(1) and outcome and objectives detailed in Condition 2-3(1) have been met.	Refer to Confirmed **Air Quality Management Plan**
		2-6	In the event that monitoring or investigations at any time indicate an exceedance of trigger criteria or threshold criteria specified in the Confirmed Air Quality Management Plan, the OWNER shall: (1) report the exceedance in writing to the CEO within: (a) 48 hours of an exceedance of threshold criteria being identified; or	Refer to Confirmed **Air Quality Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(b) 7 days of an exceedance of trigger criteria being identified. (2) implement the management and/or contingency actions required by the Confirmed Air Quality Management Plan within seven days of the exceedances being reported or such lesser time specified in the Confirmed Air Quality Management Plan, and continue implementation of those actions until the CEO has confirmed by notice in writing that it has been demonstrated that the trigger criteria and/or threshold criteria are being met and implementation of the management and/or contingency actions are no longer required; (3) investigate to determine the cause of the trigger criteria or threshold criteria being exceeded; (4) if threshold criteria have been exceeded, investigate to provide information for the CEO to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; (5) provide a further report to the CEO within 21 days of the exceedance being reported which shall include: (a) details of management and/or contingency actions implemented; (b) the effectiveness of the management and/or contingency actions implemented against the trigger criteria or threshold criteria; (c) the findings of the investigations required by Conditions 2-	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			5(3) and 2-5(4); (d) measures to prevent the trigger criteria or threshold criteria being exceeded in the future; (e) measures to prevent, control or abate impacts which may have occurred; and (f) justification for the trigger criteria or threshold criteria remaining, or being adjusted based on better understanding, demonstrating that the outcomes in Condition 2-1(1) and outcomes and objectives in Condition 2-3(1) will be met.	
		2-7	Without limiting Condition 2-5 (implementation of the plan), and notwithstanding compliance with Condition 2-6 (response to exceedance), the OWNER must not cause or allow: (1) an exceedance of a threshold criteria specified in a Confirmed Air Quality Management Plan (regardless of whether management actions and/or threshold contingency actions have been or are being implemented); (2) any non-compliance with the requirements of a Confirmed Air Quality Management Plan; or (3) any non-compliance with any air quality objectives and standards (including those derived from the results of the Murujuga Rock Art Monitoring Program), and any amendments to those objectives and standards, which are the subject of a notification to the OWNER by the Minister for the purposes of this Condition	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may review, and submit proposed amendments to, the Confirmed Air Quality Management Plan to the CEO and the DCCEEW; and (2) shall review, and submit proposed amendments to, the Confirmed Air Quality Management Plan to the CEO and the DCCEEW as and when directed by the CEO; (3) shall review and submit proposed amendments to the Confirmed Air Quality Management Plan to the CEO and the DCCEEW within six months of being notified by the Minister of air quality standards or objectives (including those derived from the results of the Murujuga Rock Art Monitoring Program) or any amendments to those objectives or standards, for the purposes of Condition 2-2 or Condition 2-7(3); (4) shall review and submit proposed amendments to the Confirmed Air Quality Management Plan to the CEO and the DCCEEW at least every five years.	Refer to Confirmed **Air Quality Management Plan**
		2-9	Any changes to the Confirmed Air Quality Management Plan under condition 2-8 that involves an item that was subject to a peer review under conditions 2-3(2) or 2-3(11) will require a new peer review unless otherwise advised by the CEO.	Refer to Confirmed **Air Quality Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		2-10	The OWNER shall interpret and report on monitoring data collected for the purposes of the Confirmed Air Quality Management Plan to the CEO and the Murujuga Aboriginal Corporation at least annually.	Refer to Confirmed **Air Quality Management Plan**
	Reduce net GHG emissions in order to minimise the risk of environmental harm associated with climate change.	Greenhouse gas management 3-3	At least six months prior to **Ground Disturbing Activities**, or such lesser time approved in writing by the **CEO**, the OWNER shall, in consultation with the Murujuga Aboriginal Corporation, revise, and submit to the **CEO**, the *Perdaman Urea Project Environmental Management Plan Greenhouse Gas Emissions (Final Version PCF2, 12 March 2021*) to: (1) be consistent with the achievement of the **Net GHG Emissions** limits in Condition 3-1 subject to the adjustment provided for in Condition 3-2 (or achievement of emission reductions beyond those required by those emission limits); (2) specify the estimated **Proposal GHG Emissions** and **Emissions Intensity** for the life of the proposal; (3) include a comparison of the estimated **Proposal GHG Emissions** and **Emissions Intensity** for the life of the proposal against other comparable facilities; (4) identify and describe any measures that the OWNER will implement to avoid, reduce and/or offset (including offsets located in Murujuga and/or with Traditional Owners who identify and associate themselves with **Murujuga**) **Proposal**	Refer to Confirmed **Greenhouse Gas Emissions** Refer to the CONTRACTOR Greenhouse Gas Construction Management Protocol

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			GHG Emissions and/or reduce the **Emissions Intensity** of the proposal; and (5) provide a program for the future review of the plan to: (a) assess the effectiveness of measures referred to in Condition 3-3(4); and (b) identify and describe options for future measures that the OWNER may or could implement to avoid, reduce, and/or offset **Proposal GHG Emission** and/or reduce the **Emissions Intensity** of the proposal.	
		3-4	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may revise and submit to the **CEO** the **Confirmed** Greenhouse Gas Management Plan at any time; (2) must revise and submit to the **CEO** the **Confirmed** Greenhouse Gas Management Plan if there is a material risk that Condition 3-1 will not be complied with, including but not limited to as a result of a change to the proposal; (3) must revise and submit to the **CEO** the **Confirmed** Greenhouse Gas Management Plan by the date that the first five yearly consolidated report is required to be submitted under Condition 3-9(1) and every five years after that date; and (4) must revise and submit to the **CEO** the **Confirmed** Greenhouse Gas Management Plan as and when directed to	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			by the **CEO**.	
		3-5	The OWNER must not undertake the commencement of **Ground Disturbing Activities** until the **CEO** has confirmed in writing that the Greenhouse Gas Management Plan referred to in Condition 3-3 has been revised and satisfies the requirements of Condition 3-3.	
		3-6	Within one month of receiving confirmation in writing from the **CEO** that: (1) the Greenhouse Gas Management Plan referred to in Condition 3-3 has been revised and satisfies Condition 3-3; or (2) any subsequent version of the **Confirmed** Greenhouse Gas Management plan submitted under Condition 3-4 satisfies Condition 3-3, the OWNER must submit a separate summary of the relevant plan to the **CEO** for public disclosure, which must: (3) include a summary of the matters specified in Conditions 3-3(1) to 3-3(4); and (4) be published as required by Condition 3-11(2).	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		3-7	The OWNER shall implement the most recent version of the **Confirmed** Greenhouse Gas Management Plan until the **CEO** has confirmed by notice in writing that it has been demonstrated that the **Net GHG Emission** limits in Condition 3-1 have been met.	
	4-2 The OWNER shall implement the proposal to achieve the following environmental objective: (1) All direct impacts (other than the direct impacts authorised under Condition 4-1) are avoided, and minimise indirect impacts to native vegetation.	Flora and vegetation 4-1	The OWNER shall implement the proposal to meet the following environmental outcomes: (1) the extent of native vegetation clearing within the development envelope shall not exceed 73.05 ha; and (2) the extent of clearing within the vegetation community identified as Priority 1 (P1) Priority Ecological Community (PEC) - Burrup Peninsula Rock Pile Communities shall not exceed 0.16 ha.	Refer to Confirmed **Flora Management Plan**
		4-3	At least six (6) months prior to **Ground Disturbing Activities**, or such lesser time approved in writing by the **CEO**, the OWNER shall submit to the **CEO** and the **DCCEEW**, a revised version of the Flora Management Plan, Perdaman Urea Project Burrup Peninsula, Western Australia (Version PCF 1, 12 January 2021) which has been prepared in consultation with the Murujuga Aboriginal Corporation and meets the requirements of Condition 4-7.	Refer to Confirmed **Flora Management Plan** The CONTRACTOR have addressed Plan requirements within Attachment B – Construction Flora & Vegetation Management Sub Plan of this CEMP.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		4-4	The OWNER must not commence **Ground Disturbing Activities** until the **CEO** has confirmed in writing that the Flora Management Plan submitted under Condition 4-3 satisfies the requirements of Condition 4-7.	Refer to Confirmed **Flora Management Plan** The CONTRACTOR have addressed Plan requirements within Attachment B – Construction Flora & Vegetation Management Sub Plan
		4-5	The OWNER shall implement the most recent version of the **Confirmed** Flora Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated that the environmental outcomes in Condition 4-1 and objectives detailed in Condition 4-2 have been met.	Refer to Section 3 of this CEMP. Refer to Confirmed **Flora Management Plan** The CONTRACTOR have addressed Plan requirements within Attachment B.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		4-6	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may review and revise a **Confirmed** Flora Management Plan and submit it to the **CEO** and the **DCCEEW**; and (2) shall review and revise a **Confirmed** Flora Management Plan and submit it to the **CEO** and the **DCCEEW** as and when directed by the **CEO**.	Refer to Confirmed **Flora Management Plan** The CONTRACTOR have addressed Plan requirements within Attachment B – Construction Flora & Vegetation Management Subplan of this this CEMP
		4-7	Any revision of the Flora Management Plan, Perdaman Urea Project Burrup Peninsula, Western Australia (Version PCF 1, 12 January 2021) or a **Confirmed** Flora Management Plan submitted to the **CEO** shall: (1) demonstrate how the outcomes in Condition 4-1 and the objective in Condition 4-2 will be achieved; (2) include provisions to manage impacts from: (a) clearing; (b) changes to surface water flows, including increase and decrease in extent of flooding; (c) changes to surface water quality; (d) changes to groundwater regimes; (e) dust; (f) weeds; and	Refer to Confirmed **Flora Management Plan** The CONTRACTOR have addressed Plan requirements within Attachment B – Construction Flora & Vegetation Management Sub-Plan of this CEMP

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(g) fire; (3) provide for relevant Traditional Owners to be invited to observe any **Ground Disturbing Activities** and during construction and take reasonable steps to facilitate the observation of those activities by those persons. (4) specify trigger criteria that will trigger the implementation of management and/or contingency actions to prevent direct or indirect impacts to the vegetation communities listed in Conditions 4-1(1) and 4-1(2); (5) specify threshold criteria to demonstrate compliance with Condition 4-1 and Condition 4-2; (6) specify monitoring methodology to determine if trigger criteria and threshold criteria have been met; (7) specify management and/or contingency actions to be implemented if the trigger criteria required by Condition 4 7(3) and/or the threshold criteria required by Condition 4-7(4) have not been met; and (8) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that Conditions 4-1 and 4-2 have been met over the reporting period in the Compliance Assessment Report required by Condition 15-6.	
		4-8	In the event that the environmental outcomes in Condition 4-1 are exceeded, or monitoring or investigations at any time indicate an exceedance of threshold criteria specified in a	See Section 17 and 18 of this Plan.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			Confirmed Flora Management Plan, the OWNER shall: (1) report the exceedance in writing to the **CEO** and the **DCCEEW** within seven days of the exceedance being identified; (2) implement the management and/or contingency actions required by Condition 4-7(6) within seven days of the exceedances being reported as required by Condition 4- 8(1) or such lesser time set out in the **Confirmed** Flora Management Plan and continue implementation of those actions until the **CEO** has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and implementation of the management and/or contingency actions are no longer required; (3) investigate to determine the cause of the threshold criteria being exceeded; (4) investigate to provide information for the **CEO** to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; (5) provide a further report to the **CEO** and the **DCCEEW** within twenty-one (21) days of the exceedance being reported as required by Condition 4-8(1), which shall include: (a) details of the management and/or contingency actions implemented; (b) the effectiveness of the management and/or contingency	Refer to Confirmed **Flora Management Plan** PEMP

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			actions implemented against the threshold criteria; (c) the findings of the investigations required by Conditions 4-8(3) and 4-8(4); (d) measures to prevent the threshold criteria being exceeded in the future; (e) measures to prevent, control or abate the environmental harm which may have occurred; and (f) justification of the threshold criteria remaining, or being adjusted based on better understanding, demonstrating that outcomes will continue to be met.	
		4-9	Without limiting Condition 4-5 (implementation of the plan) and notwithstanding compliance with Condition 4-8 (response to exceedance), the OWNER must not cause or allow: (1) a failure to implement one or more management and/or contingency actions, if the relevant threshold criteria have been exceeded; (2) the exceedance of a threshold criteria (regardless of whether management and/or contingency actions have been or are being implemented), and/or (3) failure to comply with the requirements of the C**onfirmed** Flora Management Plan.	See Section 16 and 17 of this Plan. Refer to Confirmed **Flora Management Plan** PEMP

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
	5-2 The OWNER shall implement the proposal to achieve the following environmental objective: (1) minimise direct and indirect impacts to the northern quoll, Pilbara olive python and the ghost bat within the development envelope.	Terrestrial fauna management 5-1	5-1 The OWNER shall implement the proposal to meet the following environmental outcomes: (1) clearing in the fauna habitat type identified as Rocky Outcrops shall not exceed 0.16 ha; (2) clearing in the fauna habitat type identified as Hummock Grasslands on Mid-slopes shall not exceed 49.17 ha; (3) clearing in the fauna habitat type identified as Samphire Shrublands / Supratidal flats shall not exceed 11.97 ha; (4) clearing in the fauna habitat type identified as Drainage Lines shall not exceed 2.7 ha; and (5) impacts to short-range endemic fauna species are avoided, unless it is demonstrated, and the **CEO** confirms in writing that the species occurs in a self-sustaining population outside the development envelope.	Refer to the Confirmed **Fauna Management Plan,** and the Confirmed **Threatened Species Management Plan**,
		5-3	At least six months prior to **Ground Disturbing Activities** within the Development Envelope delineated in Figure 2 of Schedule 1, or such lesser time approved in writing by the **CEO**, the OWNER shall, in consultation with the Murujuga Aboriginal Corporation and **DCCEEW**, revise and submit to the **CEO** the Fauna Management Plan (PCF-PD-EN-FaMP, Version PCF 1, 12/01/2021) and the Threatened Species Management Plan (PCF-PD-EN-TSMP, PCF 1, 12/01/2021), one or both of which shall: (1) demonstrate how the environmental outcomes in Condition 5-1 and environmental objective in Condition 5-2	Refer to the Confirmed **Fauna Management Plan,** and the Confirmed **Threatened Species Management Plan**, The CONTRACTOR have addressed Plan requirements within **Attachment** C of this CEMP.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			will be achieved; (2) include details of the outcomes of a detailed short-range endemic fauna survey undertaken within the development envelope and surrounding region at least six months prior to **Ground Disturbing Activities**; (3) include provisions to avoid where practicable and otherwise minimise impacts to significant terrestrial fauna species, including short-range endemic fauna and migratory birds, including, but not limited to, impacts from: (a) clearing of habitat; (b) lighting; (c) noise and vibration; (d) dust; (e) vehicle and machinery movement strike; (f) entrapment in trenches or ponds; (g) the attraction of feral animals; and (h) fire; (4) provide for relevant Traditional Owners to be invited to observe any **Ground Disturbing Activities** and during construction, and take reasonable steps to facilitate the observation of those activities by those persons; (5) specify trigger criteria that will trigger the implementation of management and/or contingency actions to prevent direct or indirect impacts to significant terrestrial fauna species,	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			including short-range endemic fauna; (6) specify threshold criteria to demonstrate compliance with Conditions 5-1 and 5-2; (7) specify monitoring methodology to determine if trigger criteria and threshold criteria have been met; (8) specify management and/or contingency actions to be implemented if the trigger criteria required by Condition 5-3(5) and/or the threshold criteria required by Condition 5-3(6) have not been met; and (9) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that Conditions 5-1 and 5-2 have been met over the reporting period in the Compliance Assessment Report required by Condition 15-6.	
		5-4	The OWNER must not commence **Ground Disturbing Activities** until the **CEO** has confirmed in writing that the Fauna Management Plan and the Threatened Species Management Plan satisfy the requirements of Condition 5-3.	Section 5 of this CEMP. Refer to the Confirmed **Fauna Management Plan,** and the Confirmed **Threatened Species Management Plan**,

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		5-5	The OWNER shall implement the most recent versions of the **Confirmed** Fauna Management Plan and **Confirmed** Threatened Species Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated that the environmental outcomes in Condition 5-1 and objectives detailed in Condition 5-2 have been met.	Section 12.3 and Attachment C – Construction Fauna Management Sub-Plan.
		5-6	In the event that the environmental outcomes in Condition 5-1 are exceeded, or monitoring or investigations at any time indicate an exceedance of threshold criteria specified in the **Confirmed** Fauna Management Plan or **Confirmed** Threatened Species Management Plan, the OWNER shall: (1) report the exceedance in writing to the **CEO** and the **DCCEEW** within seven days of the exceedance being identified; (2) implement the management and/or contingency actions required by Condition 5-3(8) within seven days of the exceedances being reported as required by Condition 5-6(1) and continue implementation of those actions until the **CEO** has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and implementation of the management and/or contingency actions are no longer required; (3) investigate to determine the cause of the threshold criteria being exceeded;	Refer to the Confirmed **Fauna Management Plan,** and the Confirmed **Threatened Species Management Plan**, Section 17 and 18 of this CEMP PEMP

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(4) investigate to provide information for the **CEO** to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; (5) provide a further report to the **CEO** and the **DCCEEW** within twenty-one (21) days of the exceedance being reported as required by Condition 5- 6(1) which report shall include: (a) details of management and/or contingency actions implemented; (b) the effectiveness of the management and/or contingency actions implemented against the threshold criteria; © the findings of the investigations required by Conditions 5-6(3) and 5-6(4); (d) measures to prevent the threshold criteria being exceeded in the futur©(e) measures to prevent, control or abate the environmental harm which may have occurred; and (f) justification of the threshold criteria remaining, or being adjusted based on better understanding, demonstrating that outcomes will continue to be met.	
		5-7	Without limiting Condition 5-5 (implementation of the plans) and notwithstanding compliance with Condition 5-6 (response to exceedance), the OWNER must not cause or allow: (1) a failure to implement one or more management and/or contingency actions, if the relevant threshold criteria have	See Section 16 and 17 of this Plan. Refer to Confirmed **Fauna Management Plan** and Confirmed

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			been exceeded; (2) the exceedance of a threshold criteria (regardless of whether the relevant management and/or contingency actions have been or are being implemented); and/or (3) a failure to comply with the requirements of the **Confirmed** Fauna Management Plan or the **Confirmed** Threatened Species Management Plan.	**Threatened Species Management Plan** PEMP
		5-8	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may review and revise the **Confirmed** Fauna Management Plan and/or **Confirmed** Threatened Species Management Plan and submit it to the **CEO** and the **DCCEEW**; and (2) shall review and revise the **Confirmed** Fauna Management Plan and/or **Confirmed** Threatened Species Management Plan and submit it to the **CEO** and the **DCCEEW** as and when directed by the **CEO**.	Refer to Confirmed **Fauna Management Plan** and Confirmed **Threatened Species Management Plan** Refer to Section 3 of this Plan.
	6-1 The OWNER shall implement the proposal to meet the following environmental object (10) (1) Minimise project attributable	Hydrogeological management 6-2	At least six months prior to **Ground Disturbing Activities**, the OWNER shall provide the **CEO** with the results of supplementary detailed hydrogeological studies undertaken by or on behalf of the OWNER to quantify baseline groundwater quality, groundwater flow directions, and the depth to groundwater beneath Sites C and F shown on Figure 2 (of MS 1180) and such studies shall meet the requirements of the:	Refer to **Baseline Hydrogeological Assessment**, Tetra Tech Coffey, 19 July 2022.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
	impacts on groundwater quality, flow direction and/or depth to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.		(1) Department of Water 2009, Operational Policy No.–5.12 - Hydrogeological reporting associated with a groundwater well licence, Department of Water, Perth, November 2009; and (2) EPA Victoria 2006, Hydrogeological Assessment (Groundwater Quality) Guidelines, September 2006.	
		6-3	In the event that the studies referred to in Condition 6-2 indicate that dewatering would be required during construction, the OWNER shall develop in consultation with the Murujuga Aboriginal Corporation, and submit to the **CEO** together with the studies referred to in Condition 6-2 a Hydrogeological Management Plan: (1) containing management measures for dewatering to meet the environmental objective in Condition 6-1; (2) setting out the design, construction and location of groundwater dewatering infrastructure and groundwater monitoring bores to meet the environmental objective in Condition 6-1; (3) that applies the Department of Water and Environment Regulation's Water Quality Protection Note 30 on Groundwater Monitoring Bores (DER 2006) and the National Uniform Drillers Licensing Committee's Minimum Construction Requirements for Water Bores in Australia – fourth edition (NUDLC 2020); (4) specifying trigger criteria that will trigger the implementation of management and/or contingency actions	Hydrogeological Management Plan not required

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			to prevent direct or indirect impacts; (5) specifying threshold criteria to demonstrate compliance with Condition 6- 1; (6) specifying monitoring methodology to determine if trigger criteria and threshold criteria have been met; (7) specifying management and/or contingency actions to be implemented if the trigger criteria required by Condition 6-3(4) and/or the threshold criteria required by Condition 6-3(5) have not been met; and (8) providing the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that the objective in Condition 6-1 has been met over the reporting period in the Compliance Assessment Report required by Condition 15-6.	
		6-4	The OWNER must not commence dewatering until the **CEO** has confirmed in writing that the Hydrogeological Management Plan satisfies the requirements of Condition 6-3.	Refer to ASSMP
		6-5	The OWNER shall implement the most recent version of the **Confirmed** Hydrogeological Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated that the environmental objective detailed in Condition 6-1 has been met.	Refer to Section 3 of this CEMP. Refer to ASSMP

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		6-6	The OWNER shall sample and monitor all groundwater bores required by Condition 6-3 to be identified in the **Confirmed** Hydrogeological Management Plan at least every six (6) months and compare the results against the baseline groundwater quality, groundwater flow directions, and depth to groundwater obtained from the hydrogeological studies referred to in Condition 6-2.	Refer to ASSMP
		6-7	In the event that monitoring required by Condition 6-6 or provided for in the management plan indicates an exceedance of trigger levels: (1) the OWNER shall report such findings to the **CEO** within seven days of the exceedance being identified; (2) the OWNER shall provide evidence which allows determination of the cause of the exceedance; (3) if the exceedance is determined by the **CEO** to be attributable to the proposal, the OWNER shall submit to the **CEO** actions to be taken to address the exceedance within seven days of the OWNER being notified in writing of the determination being made; (4) the OWNER shall implement the actions to address the exceedance referred to in Condition 6-7(3), shall the monitor the effectiveness of those actions, and shall continue to	See Section 16 and 17. of this Plan.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			implement and monitor the actions until such time as the **CEO** determines that the actions may cease; and (5) the OWNER shall submit bi-annually, or at a frequency defined to the satisfaction of the **CEO**, the results of monitoring required by Conditions 6-6 and 6-7(4) and the monitoring provided for in the management plan, to the **CEO**, until such time as the **CEO** determines that reporting may cease.	
		6-8	The OWNER shall make the monitoring reports required by Condition 6-7(5) publicly available in a manner approved by the **CEO**.	Hydrogeological Management Plan not required
		6-9	Without limiting Condition 6-5 (implementation of the plan) and notwithstanding compliance with Condition 6-7 (response to exceedance), the OWNER must not cause or al (10) (1) a failure to implement one or more management actions, if the relevant threshold criteria has been exceeded; (2) the exceedance of a threshold criteria (regardless of whether threshold contingency actions have been or are	See Section 16 and 17 of this Plan.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			being implemented); and/or (3) failure to comply with the requirements of the **Confirmed** Hydrogeological Management Plan.	
		6-10	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may review and revise the **Confirmed** Hydrogeological Management Plan and submit to the **CEO**; and (2) shall review and revise the **Confirmed** Hydrogeological Management Plan and submit to the **CEO** as and when directed by the **CEO**.	Hydrogeological Management Plan not required. Refer to Section 3 of this Plan.
		Acid sulfate soils 7-1	The OWNER shall undertake intrusive acid sulfate soils investigations in accordance with the requirements of the Department of Water and Environmental Regulation's guideline on the Identification and investigation of acid sulfate soils and acidic landscapes (DER 2015) at least six months prior to **Ground Disturbing Activities**	Refer to ASSMP and Section 4.5 and 12.14
		7-2	7-2 In the event that acid sulfate soils are disturbed during the implementation of the proposal, the OWNER shall treat and manage acid sulfate soils in accordance with the requirements of the Department of Water and Environmental Regulation's guideline on the treatment and management of soil and water in acid sulfate soil	Refer to ASSMP and Section 4.5 and 12.14

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			landscapes (DER, 2015).	
	8-1 The OWNER shall implement the proposal to achieve the following environmental object (10) (1) maintain the hydrological regimes and quality of surface water so that environmental values are protected.	Surface water 8-2	At least six months prior to **Ground Disturbing Activities** within the development envelope delineated in Figure 2 of Schedule 1, or such lesser time approved in writing by the **CEO**, the OWNER shall in consultation with the Murujuga Aboriginal Corporation, revise and submit to the **CEO** the *Surface* Water Management Plan, Perdaman Urea Project Burrup Peninsula, Western Australia (Version PCF 1, 24 January 2021) which shall: (1) demonstrate how the environmental objective in Condition 8-1 will be achieved; (2) specify the treatment and management of potential acid sulfate soils in accordance with the requirements Condition 7-1 and Condition 7-2; (3) specify trigger criteria that will trigger the implementation of management and/or contingency actions to prevent direct or indirect impacts; (4) specify threshold criteria to demonstrate compliance with Condition 8-1;	Refer to the Confirmed **Surface Water Management Plan** Erosion, Sediment & Surface Water Protocol. Attachment A and Section 12.1

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(5) specify monitoring methodology to determine if trigger criteria and threshold criteria have been met; (6) specify management and/or contingency actions to be implemented if the trigger criteria required by Condition 8-2(3) and/or the threshold criteria required by Condition 8-2(4) have not been met; and (7) provide the format and timing for the reporting of monitoring results against trigger criteria and threshold criteria to demonstrate that the objective in Condition 8-1 has been met over the reporting period in the Compliance Assessment Report required by Condition 15-6.	
		8-3	The OWNER must not commence **Ground Disturbing Activities** until the **CEO** has confirmed in writing that the Surface Water Management Plan submitted under Condition 8-2 satisfies the requirements of Condition 8-2.	Refer to the Confirmed **Surface Water Management Plan** Section 5 of this Plan
		8-4	The OWNER shall implement the most recent version of the **Confirmed** Surface Water Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated that the objective detailed in Condition 8-1 has been met.	Section 3 of this Plan.
		8-5	In the event that the environmental objective in Condition 8-1 is not achieved, or monitoring or investigations at any time	Refer to Section 16 and 17 of this Plan.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			indicate an exceedance of threshold criteria specified in the **Confirmed** Surface Water Management Plan the OWNER s: (10) (1) report the exceedance in writing to the **CEO** within seven days of the exceedance being identified; (2) implement the management and/or contingency actions specified in the **Confirmed** Surface Water Management Plan as required by Condition 8-2(6) within seven days of the exceedances being reported as required by Condition 8-5(1) or such lesser time specified in the **Confirmed** Surface Water Management Plan and continue implementation of those actions until the **CEO** has confirmed by notice in writing that it has been demonstrated that the threshold criteria are being met and implementation of the management and/or contingency actions are no longer required; (3) investigate to determine the cause of the threshold criteria being exceeded; (4) investigate to provide information for the **CEO** to determine potential environmental harm or alteration of the environment that occurred due to threshold criteria being exceeded; (5) provide a further report to the **CEO** within twenty-one (21) days of the exceedance being reported as required by Condition 8-5(1) and such further report shall include:	Refer to the Confirmed **Surface Water Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(a) details of management and/or contingency actions implemented; (b) the effectiveness of the management and/or contingency actions implemented against the threshold crit©a; (c) the findings of the investigations required by Conditions 8-5(3) and 8-5(4); (d) measures to prevent the threshold criteria being exceeded in the©ture; (e) measures to prevent, control or abate the environmental harm which may have occurred; and (f) justification of the threshold criteria remaining, or being adjusted based on better understanding, demonstrating that outcomes will continue to be met.	
		8-6	Without limiting Condition 8-4 (implementation of the plan) and notwithstanding compliance with Condition 8-5 (response to exceedance), the OWNER must not causeallow: (10) (1) a failure to implement one or more management actions, if the relevant threshold criteria has been met; (2) the exceedance of a threshold criteria (regardless of whether threshold contingency actions have been or are being implemented); and/or	Refer to Section 16 and 17 of this Plan. Refer to the Confirmed **Surface Water Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(3) failure to comply with the requirements of the **Confirmed** Surface Water Management Plan.	
		8-7	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (1) may review and revise the **Confirmed** Surface Water Management Plan and submit it to the **CEO**; and (2) shall review and revise the **Confirmed** Surface Water Management Plan and submit it to the **CEO** as and when directed by the **CEO**.	Refer to the Confirmed **Surface Water Management Plan** Refer to Section 3 of this Plan.
	9-1 The OWNER must implement the proposal to meet the following otives: (10) (1) avoid, where possible, an178inimize ise minimise direct and indirect	Cultural Heritage 9-2	At least six months prior to **Ground Disturbing Activities**, the OWNER shall, in consultation with the Murujuga Aboriginal Corporation and the **DPLH**, revise and submit to the **CEO** and the **Registrar of Aboriginal Sites** a further version of the Aboriginal Heritage Management Plan, Status: Confidential, Perdaman Urea Project Burrup Peninsula, Western Australia (Version PCF 2, 26 March 2021) to meet the objectives specified in Condition 9-1 and this pshall: (10) (1) specify the objectives to be achieved, as specified in Condition 9-1;	Confirmed **Cultural Heritage Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
	impacts to social, cultural, heritage, and archaeological values within and surrounding the development envelope; (2) allow ongoing Traditional Owners and Custodian access to enable traditional activities and connection to culturally significant areas within and surrounding the development envelope as shown in Figure 2 (MS 1180); (3) allow Traditional Owners and Custodian access to the development envelope following decommissioning of the		(2) include a framework for consultation with Traditional Owners and Custodians via the Murujuga Aboriginal Corporation and other relevant stakeholders during the life of the proposal; (3) specify construction environmental management activities relevant to cultural heritage, not limited to and including noise (not limited to and including at Yatha), construction emissions and air quality, traffic management and visual amenity and provide for relevant Traditional Owners to be invited to observe any **Ground Disturbing Activities** and during construction, and take reasonable steps to facilitate the observation of those activities by those persons; (4) specify operational environmental management activities relevant to cultural heritage, not limited to and including noise (not limited to and including at Yatha), traffic management and visual amenity and the provision for relevant Traditional Owners to observe the activities (as reasonably required); (5) specify risk-based management actions that will be implemented to demonstrate compliance with the objectives specified in Condition 9-1;	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
	proposal as shown in Figure 2 (MS 1180); and (4) avoid, where possible, an180inimizeise minimise direct and indirect impacts to visual and amenity impacts to social and cultural places and activities.		(6) specify measurable management target(s) to determine the effectiveness of the risk-based management actions; (7) specify monitoring to measure the effectiveness of management actions against management targets; (8) specify a process for revision of management actions and changes to proposal activities, in the event that the management targets are not achieved and such process must include an investigation to determine the cause of the management target(s) not being met; (9) provide the format and timing to demonstrate that Condition 9-1 has been met for the reporting period in the Compliance Assessment Report required by Condition 15-6 including, but not limited to: (a) verification of the implementation of management actions; and (b) reporting on the effectiveness of management actions against management target(s).	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		9-3	The OWNER must not commence **Ground Disturbing Activities** until the **CEO** confirmed in writing that the plan submitted under Condition 9-2 satisfies the requirements of Condition 9-2.	
		9-4	The OWNER must implement the most recent version of the **Confirmed** Cultural Heritage Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated the objectives specified in Condition 9-1 have been met.	Confirmed **Cultural Heritage Management Plan**
		9-5	In the event that monitoring, tests, surveys or investigations indicate nonachievement of management target(s) specified in the **Confirmed** Cultural Heritage Management Plan, the O must: (10) (1) report the non-achievement in writing to the **CEO**, the Murujuga Aboriginal Corporation, **DPLH**, and the **Registrar of Aboriginal Sites** within 21 days of the non-achievement being identified; (2) investigate to determine the cause of the management target(s) not being achieved;	Confirmed **Cultural Heritage Management Plan** Section 17. and 18 of this Plan

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			(3) provide a further report to the **CEO**, the Murujuga Aboriginal Corporation, the **DPLH**, and the **Registrar of Aboriginal Sites** within 90 days of the non-achievement being reported as required by Condition 9-5(1) which musclude: (10) (a) a description of the cause of management target(s) being exceeded if known, or analysis of likely causes if not known; (b) the findings of the investigation required by Conditi©9-5(2); (c) details of revised and/or additional management actions to be implemented to prevent non-achievement of the management target(s); and (d) relevant changes to proposal activities.	
		9-6	In the event that monitoring, tests, surveys or investigations indicate that one or more management action(s) specified in the **Confirmed** Cultural Heritage Management Plan have not been implemented, the OWNER must: (1) report the failure to implement the management action(s)	Confirmed **Cultural Heritage Management Plan** Section 16 , 17 and 18.5 of this Plan

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			in writing to the **CEO**, the Murujuga Aboriginal Corporation, the **DPLH**, and the **Registrar of Aboriginal Sites** within seven days of identification; (2) investigate to determine the cause of the management action(s) not being implemented; (3) investigate to determine potential environmental harm or alteration of the environment that occurred due to the failure to implement management action(s); (4) provide a further report to the **CEO**, the Murujuga Aboriginal Corporation, the **DPLH**, and the **Registrar of Aboriginal Sites** within 28 days of the non-compliance being identified, which include: (10) (a) cause for failure to implement management action(s); (b) the findings of the investigation required by Cond©on 9-7(2); (c) relevant changes to proposal activities; and (d) measures to prevent, control or abate the environmental harm which may have occurred.	

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		9-7	Without limiting Condition 9-4 (implementation of the plan) and notwithstanding compliance with Condition 9-6 (response to exceedance), the OWNER must notse or allow: (10) (1) a failure to implement one or more management actions specified in the **Confirmed** Cultural Heritage Management Plan, and/or (2) failure to comply with the requirements of the **Confirmed** Cultural Heritage Management Plan.	Confirmed **Cultural Heritage Management Plan** Section 16 and 17 of this Plan
		9-8	The OWNER, in consultation with the Murujuga AborigiCorporation: (10) (1) may review and revise the **Confirmed** Cultural Heritage Management Plan and submit it to the **CEO**; and (2) shall review and revise the **Confirmed** Cultural Heritage Management Plan and submit it to the **CEO** as and when directed by the **CEO**.	Confirmed **Cultural Heritage Management Plan**, Section 3 of this Plan

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
	10-1 The OWNER shall implement the proposal to meet the following environml objective: (10) (1) avoid, where possible, and otherwise use best practice technology and risk-based mana185inimizections to minimise nightglow and light overspill from the proposal so that the environmental values of amenity at sensitive locations, including, but not limited to Hearson Cove and Deep Gorge, are protected.	Light management 10-2	At least six months prior to **Ground Disturbing Activities**, the OWNER shall provide the **CEO** with a Light Management Plan which has been prepared in consultation with the Murujuga Aboriginal Corporation and that demonstrates that the proposed lighting design adopts best practice lighting control measures to meet the objective in Condition 10-1 which shall: (10) (1) specify best practice technology and risk-based management actions that will be implemented to demonstrate compliance with the objective specified in Condition 10-1; (2) specify measurable management target(s) to determine the effectiveness of the best practice technology and risk-based management actions; (3) specify monitoring to measure the effectiveness of best practice technology and management actions against management targets; (4) specify a process for revision of best practice technology and management actions and changes to proposal activities, in the event that the management targets are not achieved, and this process must include	Confirmed **Light Management Plan**

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
			an investigation to determine the cause of the management target(s) not being met; (5) provide the format and timing to demonstrate that Condition 10-1 has been met for the reporting period in the Compliance Assessment Report required by Condition 15-6 including, but limited to: (10) (a) verification of the implementation of best practice technology and management actions; and (b) reporting on the effectiveness of best practice technology and management actions against management target(s).	
		10-3	The OWNER must not commence **Ground Disturbing Activities** until the **CEO** has confirmed in writing that the Light Management Plan satisfies the requirements of Condition 10-2.	Confirmed **Light Management Plan**. Section 5 of this Plan
		10-4		

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
		10-5	Without limiting Condition 10-4 (implementation of the plan), the OWNER must notse or allow: (10) (1) a failure to implement any best practice technology or management actions specified in the **Confirmed** Light Management Plan; and/or (2) non-compliance with the requirements of the **Confirmed** Light Management Plan	Confirmed **Light Management Plan**.
		10-6	The OWNER, in consultation with the Murujuga Aboriginal Corporation: (10) (1) may review and revise the **Confirmed** Light Management Plan and submit it to the **CEO**; or (2) shall review and revise the **Confirmed** Light Management Plan and submit it to the **CEO** as and when directed by the **CEO**.	Section 3 of this Plan
		10-7	The OWNER shall continue to implement the latest revision of the **Confirmed** Light Management Plan until the **CEO** has confirmed by notice in writing that the OWNER has demonstrated that the environmental objective detailed in Condition 10-1 have been met.	Confirmed **Light Management Plan**.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
Compliance with the *Rights in Water and Irrigation Act* 1914 (WA (**RIWI Act**)	The CONTRACTOR will comply with the relevant provisions within the RIWI Act		TBC (upon issue of licenses and permits issued)	The CONTRACTOR must obtain and comply with all authorisations required under the RIWI Act for works in Perdaman Urea Project Development Envelope, including: **Bed and banks permit** under s11 of the RIWI Act; **Licences to take water** under s 5C of the RIWI Act; and **Licences to construct or alter** a well under s 26D of the RIWI Act
Compliance with the Wildlife Conservation Act 1950 (WA) (**WC Act**) and the Biodiversity Conservation Act 2016 (WA)	The CONTRACTOR will comply with the relevant provisions of the WC Act and the BC Act		NA	The CONTRACTOR must obtain and comply with all authorisations required under the WC Act and the BC Act for works within the development envelope, including:

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
(**BC Act**)				**Consents to take declared** rare flora under s 23F of the WC Act; **Licences or permits** under the WC Act to take native fauna otherwise than in accordance with authorised clearing activities; **Licences or permits** under the WC Act to take fauna the subject of a declaration under s 14 of the WC Act; and any authorisations required under the BC Act upon commencement of the operative provisions of that Act.

Project Area Approvals				
Aspect	**Objective**	**Condition Reference**	**Conditions**	**Where addressed**
Compliance with the *Aboriginal Heritage Act 1972* (WA) (**AH Act**)	The CONTRACTOR is to comply with relevant provisions of the AH Act and the associated conditions set out under a s.18 consent.	TBC	TBC	TBC

APPENDIX B – ENVIRONMENTAL POLICY

PERDAMAN

CHEMICALS & FERTILISERS

Environmental Policy

Objectives

Perdaman Chemicals and Fertilisers Pty Ltd (PERDAMAN) is committed to demonstrating leadership in minimising the impact of its operations on the natural environment. PERDAMANS Environmental Management System provides the mechanisms that allow PERDAMAN to seek continuous improvement in performance through the application of best industry practice to meet community expectations.

Strategy

For the benefit of the natural environment, employees, stakeholders and the community PERDAMAN will:

- Comply with all relevant environmental laws, regulations, licenses, consents and standards that relate to the company's operations;
- Apply the principles of sustainable development, pollution minimisation and life cycle management;
- Establish and measure targets and milestones to continuously monitor and improve environmental performance;
- Maintain regular communications on environmental performance openly with local communities and regulators;
- Provide employees with training and clear accountabilities in relation to the achievement of environmental objectives and targets;
- Reduce, recover, recycle and re-use waste wherever efficient;
- Be proactive in anticipating potential environmental issues and in promoting environmental awareness

Implementation

All PERDAMAN employees and contractors are responsible for the implementation and maintenance of this policy.

Vikas Rambal
Chairman and Managing Director

Signed on 19 December 2013

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APPENDIX C – ENVIRONMENTAL RISK ASSESSMENT PROCESS & RISK MATRIX

Risk Assessment Process	Description	Methodology	Application						Reference Procedures	
			Corporate	Business Division	New Opportunity	Project Planning	Project Execution	Project Close-out		
Business Risk Assessment - HSSE Impacts	Identify, assess and control potential HSSE impacts of conducting Contractor business	Bow-tie	■	■	■	■			Risk Management Procedure	CORP-RA-PR-G-0001
Major Accident Event Hazard Assessment	Identify, assess and control Major Accident Events Hazards	MAE Bow-ties	■		■	■	■	■	MAE Hazard Management Procedure	CORP-HSE-PR-G-0068
Technical HSSE Assessments										
Design risks	Identify, assess and document inherent design risks	HAZID, HAZOP, FMEA			■	■		■	Safety in Design Procedure	CORP-ENG-PR-G-0016
Design reviews - construction, operation, maintenance	Identify, assess and mitigation of HSSE hazards introduced by the design when facility being constructed, operated or maintained	HAZID, HAZOP			■	■			Safety in Design Procedure	CORP-ENG-PR-G-0016

Risk Assessment Process	Description	Methodology	Application						Reference Procedures	
			Corporate	Business Division	New Opportunity	Project Planning	Project Execution	Project Close-out		
Human Factors analysis	Identify, assess and control potential ergonomic, health impacts of operation as part of design	Human Factors Analysis Study							Safety in Design Procedure	CORP-ENG-PR-G-0016
Fire & Explosion analysis	Identify, assess and control potential sources of fire & explosion, and consequence mitigation through design	Fire and Explosion Study							Safety in Design Procedure	CORP-ENG-PR-G-0016
Threat Specific HSSE Hazard Assessment (where applicable to Project)										
Health Risk Assessment	Identify, assess and mitigate health exposures - travel and site based	HRA							HSSE Risk Management Procedure	CORP-HSE-PR-G-0072
Environmental / Social Impact Assessment	Identify, assess and mitigate environment and community impacts	EIA, HAZID, Social Impact Study							HSSE Risk Management Procedure	CORP-HSE-PR-G-0072

Risk Assessment Process	Description	Methodology	Application						Reference Procedures	
			Corporate	Business Division	New Opportunity	Project Planning	Project Execution	Project Close-out		
Natural Disasters Assessment (Emergency Events)	Identify, assess and mitigate potential natural disaster events which may affect the site (e.g. cyclone, wild fire, tsunami)	HAZID	■	■		■			HSSE Risk Management Procedure	CORP-HSE-PR-G-0072
Task Based HSSE Hazard Assessment										
Project HSSE Assessment	Identify, assess and control potential HSSE impacts specific to the Project & Site	HAZID				■		■	HSSE Risk Management Procedure	CORP-HSE-PR-G-0072
Construction Package HSSE Assessment	Identify, assess and control potential HSSE impacts specific to the Construction package	HAZID				■	■	■	HSSE Risk Management Procedure	CORP-HSE-PR-G-0072
Subcontractor HSSE Assessment	Assess the HSSE capability of subcontractors to inform management strategy	PRE-QUAL / HAZID				■	■	■	HSSE Risk Management Procedure	CORP-HSE-PR-G-0072

Risk Assessment Process	Description	Methodology	Application						Reference Procedures	
			Corporate	Business Division	New Opportunity	Project Planning	Project Execution	Project Close-out		
	Identify, assess and control potential HSSE impacts of contract scope					■	■	■		
Work Team Task Assessment	Work teams identify, assess and control HSSE hazards of planned work	JHA					■	■	HSSE Risk Management Procedure	CORP-HSE-PR-G-0072
Personal Task Assessment	Individuals identify, assess and control HSSE hazards of planned task	TAKE 5					■	■	HSSE Risk Management Procedure	CORP-HSE-PR-G-0072

HSSE Risk Matrix

CLOUGH

Descriptor		Actual / Potential Consequence				
		Insignificant (5)	Minor (4)	Moderate (3)	Major (2)	Catastrophic (1)
Probability	Has Occurred /Almost Certain	9	16	18	23	25
	Likely	4	11	17	20	24
	Possible	3	10	13	19	22
	Unlikely	2	6	12	14	21
	Rare	1	5	7	8	15

Key			HSSE Risk Response Guide
Risk Level	Rating Range		
Low	1	8	Confirm no further control measures are required to demonstrate the risk ALARP. Responsible Supervisor to ensure all identified control measures are in place prior to the work progressing.
Moderate	9	15	Action is required to identify control measures to reduce the risk to ALARP. Work can only progress at this risk level with approval of Project Management.
High	16	22	Immediate action is required to identify control measures to reduce the risk to ALARP. Risk must be added to Project Risk Register for monitoring. Work can only progress at this risk level with approval of the Project Manager or Clough Senior Management.
Very High	23	25	This denotes unacceptable event or level of risk. Immediate action is required to identify control measures to reduce the risk to ALARP. Risk must be added to Project Risk Register for monitoring.

*The HSSE Risk Matrix and Guidelines DO NOT replace the requirements for risk assessment and treatment carried out in accordance with the Risk Management and Assurance Operating Standard (CORP-RA-OS-G-0003) and should only be used when performing HSSE Risk Assessment at a Project Level.

**The HSSE Risk Matrix shall be used to determine the level and timing of incident notification, classification and investigation. Events rated 19 or above (highlighted by shading and bold border) are considered High Potential Incidents and shall be reported accordingly.

HSE Risk Matrix

HSSE Consequence / Severity Table

Consequence	Health & Safety	Environmental Impact	Security	Business Risk	Financial impact	Murray & Roberts Injury Consequences
Catastrophic	Multiple fatalities, Multiple serious disabling injuries.	Release of pollutants capable of causing irreversible environmental harm requiring national / international resources for remediation.	One or more fatalities Terrorists attacks. Inability to conduct any business.	Company prosecuted. Loss of future work. Project shutdown. Violation of Company policy. Widespread dissatisfaction resulting in legal action.	>$30 Million	**Critical (Level 5)** Fatal injury. Incident has the potential for more than one fatal injury.
Major	Single fatality, serious injury resulting in permanent disability. Multiple injured parties.	Release of pollutants to sensitive areas; Immediate off-site contamination requiring state / regional external resource for remediation. Long term impact (6-12 months)	Deliberate attacks on staff and family resulting in severe injuries. Kidnapping. Severe delays to business operations. Rape.	Adverse national media coverage. Significant reduction in customer satisfaction. Threat to project success with potential for legal action.	$10M - $30M	
Moderate	Lost Time Injury Restricted Duties Injuries Injury reportable to Regulatory body	Environmental harm reportable to Government authority. Breach of licence conditions / lease. Onsite contamination with the potential to cause offsite contamination. Medium term impact (1-6 months)	Threat and intimidation of staff. Assault resulting in minor/no injury. Theft/vandalism/ sabotage of equipment that cannot easily be replaced. Short delays or interruptions to operations.	Local media coverage. Failure causing customer dissatisfaction with moderate delay, rework or extra work requiring additional resource. Client forced to impose penalties.	$2M - $10M	**Major (Level 4)** Incident has the potential for fatal injury **Serious (Level 3)** Lost time injuries. Incident has the potential for permanent disablement.
Minor	Medical Treatment	Minor onsite pollution not within confines of protected area. No long term impact. Clean up within 1 month.	Crime with minimal impact. Theft / Vandalism of nuisance value only. No lasting impact on business operations	Telephone or written complaints. Failure causing slight customer concern and inconvenience, resolved with current levels of resource.	$50K – $2M	**Minor (Level 2)** Medical treatment injuries
Insignificant	First Aid Treatment No treatment required	Localised / Contained impact / Immediate complete fix	Insignificant crime Theft of insignificance. No impact on business operations.	Minimal or no impact to project delivery.	Less than $50K	**Low (Level 1)** First aid treatment injuries

Probability

Probability	Description
Almost Certain	This event is expected to occur or is known to have occurred frequently at Clough in similar situations.
Likely	This event may occur or is known to have occurred at Clough in similar circumstances.
Possible	This event might occur or is known to have occurred at Clough in additional circumstances.
Unlikely	This event could occur or is known to have occurred in the industry but not at Clough.
Rare	This event may only occur in exceptional circumstances or is not known to have occurred in the industry.

APPENDIX C-2 – RISK ASSESSMENT, ASPECTS & IMPACTS REGISTER

Note – Each Major Activity undertaken on site requires an updated ENVID to be conducted.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Flora and vegetation									
Clearing/grubbing	Loss and degradation of priority flora species and vegetation, including in environmentally sensitive areas. Permanent loss of up to 73.05 ha native vegetation. Permanent Loss of up to 0.16 ha of Burrup Peninsular Rock Pile Communities (Priority 1). Permanent loss and degradation	Likely	Major	20	Ensure clearing extents do not exceed delineation outlined in Condition 1 and 4-1 (1) and (2) of MS 1180. Ensure construction workers are aware of Clearing Boundaries and priority communities and fauna habitat locations within the PDE and adjacent to the PDE. Peg out and demarcate the clearing boundaries prior to ground disturbing activities. Clearing will be carried out progressively and rehabilitated where no longer required. Implement GPS mapping for clearing boundaries and ensure earthworks and	Unlikely	Major	14	**Ground Disturbance Permits** must be obtained before any clearing or grubbing can commence. Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	of fauna habitat. Fragmentation of fauna habitat. Spread of weeds during clearing activities and movement of heavy plant and equipment. Spread of weeds through improper stockpiling of topsoil's containing flora & vegetation. Changes to surface water flows and hydrogeological regimes and natural drainage of the land through removal or vegetation				clearing teams are updated each morning (prior to works) with any amendments or updates. Ensure construction workers are trained in identification of weed species, and priority flora species. Ensure correct storage and management of soil stockpiles, outlined in and the Surface Water Management Plan (PCF-PD-EN-SWMP) Manage the spread of weeds in alignment with the Flora Management Plan (PCF-PD-EN-FMP Environmental inspections conducted as per Section 19 of this plan to monitor clearing & ground disturbing activities and ensure they are complying with environmental approvals and GDP's.				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	and changes to soils								
Ground disturbance and earthworks being carried out during construction works.	Dust deposition on vegetation affecting the transpiration and photosynthesis of native vegetation and Priority ecological communities (PEC) and priority flora.	Likely	Minor	11	Implement dust management measures, such as the application of water or synthetic stabilisers, prior to any excavation to minimise dust emissions and the risk of airborne fibres. Implement controls relevant to dust included in the Flora Management Plan (FMP) PCF-PD-EN-FMP. Implement controls relevant to dust included in Appendix J. Plan activities likely to cause dust impacts during low wind weather days. Environmental inspections conducted as per Section 19 of this plan to monitor clearing & ground disturbing activities and ensure they are	Unlikely	Minor	6	**Ground Disturbance Permits** must be obtained before any clearing or grubbing can commence. Ministerial Statement No. 1180 – Condition 4-7(2)(e).

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					complying with environmental approvals and GDP's.				
Movement of mobile plant and vehicles during construction program.	Unnecessary disturbance/trampling of flora and vegetation. Movement of vehicles, plant and equipment on unauthorised roads causing degradation to native vegetation species and communities and spreading weeds species to adjacent vegetation values.	Likely	Minor	11	Ensure vehicle movements are limited to designated areas. Provide training to personnel regarding the access roads/allowable routes when moving through site and entering and exiting the site. Ensure that all vehicles, plant and equipment arriving to site includes a "verification of weed hygiene". Manage the spread of weeds and vehicle related disturbance in alignment with the Flora Management Plan (PCF-PD-EN-FMP).	Unlikely	Minor	6	EPBC 2018/8384 Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Construction personnel and/ or visitors to site smoking in non-designated areas. Construction works requiring hot works	Altered fire regimes result in increased loss or degradation of native vegetation and/ or flora due to fire impacts. Fire spreading outside the boundaries of the PDE, affecting the native vegetation values in the Conservation zone in the Murujuga National Park. Impacts to relationship with MAC and local community. Loss of Fauna Habitat.	Possible	Major	19	Implement controls included in Appendix G. Implement controls pertinent to fire included in the Flora Management Plan (PCF-PD-EN-FMP). Ensure Training and awareness inductions and toolboxes are provided to the work force. Delineate designated smoking areas. Ensure butt out bins or similar are provided to workforce in the designated smoking areas. During Hot works, ensure best practice management is utilised – Supervisor to ensure during pre-starts and take 5's that the risks of fire to surrounding vegetation are considered and mitigated as far as practicable.	Unlikely	Major	14	***Bushfires Act 1954***. Exemptions and actions may be sought through the *Bushfires Act* (1954), particularly for fire ban days. Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					Implement the Emergency Response Plan for the Project. Environmental Inspections as per Section 19 of this Plan.				
Changes to surface and groundwater flow regimes through contaminant spills, effluent discharge, stormwater/site runoff and waste generation caused during construction activities and program.	Impacts to the condition and overall health of flora and vegetation communities that rely on flow regimes and groundwater. Degradation of surface water quality from elevated levels of suspended solids or contaminants (i.e. Hydrocarbons). Degradation of groundwater quality via spills	Likely	Major	20	Implement controls included in Attachment A and the Surface Water Management Plan (PCF-PD-EN-SWMP. Implement further controls pertaining to minimising contaminated discharge as included in Attachment A. Ensure storage and containment is in accordance with relevant chemical, dangerous goods or hazardous substance controls (Appendix F). Ensure impacts to flora and vegetation through hydrological regime changes and contamination are controlled in alignment with	Unlikely	Major	14	Licensing under **Part V of the EP Act** to authorise discharge. Relevant licencing under the ***Rights in Water and Irrigation Act 1914*** (RIWI 1914). Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	leaching into groundwater table. Degradation of surface water and intertidal flats from improper effluent discharge, stormwater runoff and rubbish, polluting water quality and affecting plant and vegetation health. Degradation of water quality from elevated levels of suspended solids or contaminants such as hydrocarbons,				the Flora Management Plan (PCF-PD-EN-FMP). Ensure Spill Response Training is provided to personnel. Ensure proper bunding and storage (110 % containment) for chemicals and fuels are utilised during construction. Provide spill kits for construction sites. Ensure booms and skimmers (or similar) are on hand for potential spills where construction activities are being carried out near surface water (i.e., intratidal flat and Port) Training and awareness of local hydrology and drainage.				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	effluent (sewage) and general rubbish in surface water runoff from sites C and F, entering the intra-tidal flat, could have an indirect impact on vegetation in this area and the mangrove communities of King Bay.								

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Vehicle and machinery movement in general around site. Movement of plant, vehicle and machinery outside designated areas. Movement of weed material in topsoil and stockpiles contaminated with seeds and weeds. Importation of fill material	Spread and introduction of weeds and introduced flora. Particularly the spread of Buffel grass, which is aggressive and has the potential to further degrade the quality of vegetation within and surrounding the site.	Likely	Moderate	17	Implement controls included in the Attachment G. Implement weed management controls as directed by the Flora Management Plan (PCF-PD-EN-FMP) Training and Awareness to ensure construction personnel can identify weed species Verification hygiene certificates for vehicles, plant and machinery entering site. Ensure access roads and roads, paths within the site are clearly signposted. Include measures i.e., fencing or signage, to reduce the vehicle access into conservation areas or native vegetation retention areas (i.e., vegetation that is not being cleared).	Possible	Moderate	13	EPBC Act 2018/8384 Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Construction of the conveyor, ship loader and storage facilities.	Alteration to coastal processes has the potential to impact surrounding vegetation (e.g. Mangroves) Vehicle movements may induce the spread of weeds.	Likely	Major	20	Implement weed management controls as directed by the Flora Management Plan (PCF-PD-EN-FMP) Comply with the PPA requirements within the following documents where they are applicable to the CONTRACTOR SOW: - Benthic Primary Producer Management Action Plan - Native Fauna Management Program - Weed Management Plan - Environment Monitoring Plan - Coastal Processes Monitoring and Management Plan - Project Management Framework Development Approval - Process and Guidelines Sustainability Strategy Comply with the requirements within the PPA CEMP.	Unlikely	Major	14	**Ground Disturbance Permits** must be obtained before any clearing or grubbing can commence. Environment Protection (Sea Dumping) Act 1981 (Cth) EPBC Act 2018/8383

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					Comply with PPA environmental approvals related to the Dampier Port.				
Fauna									
Clearing/grubbing Earthworks & Crushing and Screening during construction works (particularly in the initial 6 months) when site preparation works are in progress.	Permanent loss of conservation significant species habitats Permanent loss of 0.16ha of northern quoll and Pilbara olive python habitat (Rocky Outcrops). Permanent loss of 52.19ha of northern quoll and Pilbara olive python habitat (Hummock Grasslands on Mid Slopes).	Likely	Major	20	Disturbance to habitat will be minimised as far as practicable and will be in accordance with authorised GDPs. Clearing extents (for fauna habitat) will be in accordance with Condition 5-1 and 5-2 of MS 1180. Clearing extents and boundaries will be clearly demarcated, pegged and signposted as per requirements within the relevant management plans and protocols. No-Go Zones will be defined, as required.	Unlikely	Major	14	**Ground Disturbance Permits** must be obtained before any clearing or grubbing can commence. **EPBC Act** 2018/8383 Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	Permanent loss of 2.7ha of ghost bat habitat (Drainage Lines). Permanent loss of 12.91ha of Curlew Sandpiper, Red Knot, Lesser Sand Plover, Bar-tailed Godwit, Australian Fairy Tern, Great Knot, Eastern Curlew habitat (Samphire Shrubland/Supratidal Flats.) Indirect and cumulative impact through removal of breeding, nesting and foraging				Implement controls pertinent to clearing included in the Fauna Management Plan (PCF-PD-EN-FaMP), Flora Management Plan (PCF-PD-EN-FMP) and Threatened Species Management Plan (PCF-PD-EN-TSMP). Ensure construction personnel are trained in identification of fauna species likely to be encountered during clearing activities, including (but not limited to), Pilbara Olive Python, Ghost Bat, Northern Quoll and any short-range endemic invertebrate fauna, identified during surveys (i.e. Camaenid land snails). Undertake inspections and fauna capture, removal and relocation of native fauna from all habitat / microhabitats prior to clearing. Ensure licensed fauna handler and fauna spotters				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	habitats. Accidental death or injury to fauna during clearing works				are onsite and present during the clearing and grubbing works. Ensure that MAC and/or relevant Traditional Owners are present during any Ground Disturbing Activities as per requirements within MS 1180 Conditions. Prestart checks of machinery and equipment prior to clearing, to ensure that fauna has not taken refuge within. Further control measures to be obeyed as per Attachment C. The CONTRACTOR shall maintain denning habitat by avoiding disturbance to rock piles on the upper slopes of the valleys Environmental inspections conducted as per Section 19 of this plan to monitor clearing, ground disturbing				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					activities are complying with environmental approvals and GDP's.				
Increased traffic and vehicle movements by construction personnel.	Injury or death as a result of vehicle strike.	Almost certain	Minor	16	Implement traffic controls as per the Fauna Management Plan (PCF-PD-EN-FaMP) and Attachment C. Site vehicle speed limits to be obeyed to avoid vehicle / fauna interactions. Vehicles to yield right-of-way to fauna at all times. The CONTRACTOR will employ applicable speed limits to reduce fauna deaths by vehicle collision and/or habitat destruction. Roadkill will be removed at least 10 m into surrounding vegetation, when safe to do so, by designated personnel to avoid further strikes of fauna feeding on carcasses.	Possible	Minor	10	EPBC 2018/8383 Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					Vehicles are only permitted on approved access and haul roads. No offsite 4wd by the CONTRACTOR construction employees to be carried out in 212nauthorized areas adjacent to the PDE.				
Noise and vibration during construction activities (i.e. piling, earthworks, excavations, use of heavy machinery and plant, crushing and screening).	Noise and vibration acts as a general stressor, masks acoustic signals and can disturb ecosystem balance. Noise and vibration has the potential to impact the Ghost Bat	Possible	Moderate	13	Noisy equipment, plant and activities will be directed away from known fauna locations or habitats. In addition, high noise and vibratory works will be scheduled for hours that are least likely to affect fauna species. Further control measures pertinent to noise and vibration to be implemented in	Unlikely	Moderate	12	Environmental Protection (Noise 1997) Ministerial Statement No. 1180 Part V (EP Act) licenses and works approvals.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	foraging habits within site F.				accordance with Attachment C and the Fauna Management Plan (PCF-PD-EN-FaMP). If required, the CONTRACTOR may develop a construction specific Noise and Vibration Management Plan. If required, noise monitoring may be conducted during activities where high noise and vibratory impacts are expected to impact fauna species (i.e. Ghost Bat) Activities being conducted under a works approval and or licence (Part V EP Act) will be conducted in accordance with the relevant approval and license conditions pertaining to noise and vibration and impacts to the local fauna species. Environmental Inspections				

Lighting on buildings, structures, equipment, plant and other sources during construction.	Artificial light emanating from site may attract fauna and alter foraging patterns, increase predation risks, disrupt biological clocks and disrupt dispersal movements, impacting breeding and roosting regimes.	Almost certain	Minor	16	Light pollution impacts around the Port area will be managed to avoid impact on marine turtles. The Pilbara Port Authority Environmental Management Plan will be implemented where applicable. A Light Management Plan (PCF-PD-EN-LMP) has been developed to ensure compliance with MS 1180 Condition 10 and will be submitted to EPA for approval. Designed plant lighting in accordance with AS 4282-1997: Control of Obtrusive Effects of Outdoor Lighting Guidelines, placing light shields on large equipment to minimise light overspill, and using minimum wattage lighting in the plant where possible. Temporary lighting on plant and equipment will be oriented away from the water.	Unlikely	Minor	6	**AS 4282-1997:** Control of Obtrusive Effects of Outdoor Lighting Guidelines. Conditions stated within **MS** 1180 related to Lighting Management 10-1 through to 10-7.

					Turtle sensitive lighting is to be installed around the wharf area that is in the turtle's low visual sensitivity range (i.e.: 580 nanometers or longer), such as amber, yellow or red in colour. Avoid the use of white lights. Where practicable, lighting should be kept low, shielded and directional, away from water where possible, to minimize horizon glow. As far as practicable, the construction team will minimize light intensity in nearshore areas. Lighting being used during construction on temporary and mobile equipment, plant and vehicles will be directed away from sensitive fauna habitats (i.e., turtle nesting beaches, Ghost bat habitat etc. Light pollution strategies shall be implemented to limit night				

					glow. Compliance with control measures as per Appendix O will be applied to construction. Training and awareness will be provided to construction teams and sub-contractors. Environmental Inspections				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Trenching and excavations. Stormwater ponds. Fencing around construction areas and stormwater ponds.	Fauna may be trapped in artificial water bodies and excavations leading to injury and/ or death. Poisoning may occur if fauna gain access to holding ponds. Ghost Bats fly low and can become trapped within the fencing used onsite.	Almost certain	Minor	16	Implement controls pertinent to entrapment and poisoning from the Fauna Management Plan (PCF-PD-EN-FaMP) and Threatened Species Management Plan (PCF-PD-EN-TSMP). To ensure the protection of listed threatened species and listed migratory species, the OWNER will construct, prior to commissioning, structures and apparatus to deter birds from entering the contaminated storm water pond, clean storm water pond, saline water pond and sea/storm water backup pond. Open trenches to be managed during day and night-time hours to prevent ingress and trapping risks to native fauna. Trenches to be left open for shortest period practicable. Fauna egress will be installed on all excavations, even if	Possible	Minor	10	Environmental Protection and Biodiversity Conservation Act 1999 – **s.18 & 18A** listed threatened species Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					temporary. All excavations that must be left open for more than 12 hours must have gentle ramped egress that all fauna are capable of using. All excavations will be checked for trapped fauna within three hours of sunrise if left open overnight and all fauna should be removed by qualified personnel. The CONTRACTOR will use mesh style fencing onsite instead of horizontal wire strands or barbed wire to minimise the impacts on ghost bats. Environmental Team to inspect fauna egress points, trenches, excavations and stormwater holding ponds etc regularly as per Section 19 of this Plan.				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Improper waste storage and storage of water (i.e. stormwater ponds, settlement ponds etc) during construction activities.	Food waste and increased water availability within the Project Area could potentially increase introduced fauna numbers, increasing competition and risk of predation for native species. In addition, the availability of food resources to fauna on site can lead to dependency/altered foraging habits.	Possible	Moderate	13	Implement controls pertinent to waste storage and handling from Attachment F.	Unlikely	Moderate	12	DWER 2020 Waste categorisation for Controlled Waste (Describes and categorises all hazardous wastes which must be duly recognised, handled, treated and/or disposed of as controlled waste defined by the *Environmental Protection (Controlled Waste) Regulations 2004*.)
Personnel smoking in non-designated areas Construction works requiring hot works.	Altered fire regimes negatively impacting vegetation, and associated	Possible	Major	19	Comply with requirements outlined in Protocols. During Hot works, ensure best practice management is utilised – Supervisor to ensure	Unlikely	Major	14	Exemptions and actions may be sought under the Bushfires Act (1954)

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	values, including injury or death of native fauna caused by fire.				during pre-starts and take 5's that the risks of fire to surrounding vegetation are considered and mitigated as far as practicable. Implement the Emergency Response Plan for the Project.				Ministerial Statement No. 1180
Degradation of surface and ground water quality during construction activities (i.e. dewatering, spills, wastewater containment, stormwater ponds).	Elevated levels of suspended solids or contaminants in surface water runoff affecting the health of surrounding vegetation and associated fauna habitat, foraging and food sources.	Possible	Moderate	13	Comply with requirements outlined in Attachment A. Implement and comply with the Surface Water Management Plan (PCF-PD-EN-SWMP) and the Solid and Liquid Waste Management Plan (PCF-PD-EN-SLWMP). Install drainage, erosion, and sediment pollution controls prior to the commencement of construction to minimise the potential for changes in groundwater and surface water quality that may adversely affect fauna and fauna habitat.	Unlikely	Moderate	12	Licensing under **Part V of the EP Act** to authorise discharge. Relevant licencing under the ***Rights in Water and Irrigation Act 1914*** (RIWI 1914). Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					Environmental Team to inspect ESC's regularly as per Section 19 of this Plan.				
Chemical controls of pest species (i.e. mosquito control) applications during construction	The use of larvicides and pesticides have the potential to affect the health of vegetation, causing indirect effects to terrestrial fauna species through habitat degradation, foraging and food source degradation. Chemical controls can have a deleterious effect on the environment.	Unlikely	Moderate	12	Implement and comply with the OWNER Pest Management Plan (PCF-PD-EN-PMP) and Pest Management Sub-Plan (0000-ZA-E-09737) Where practicable avoid the use of larvicides and adulticides for chemical control of mosquitoes and other pest species.	Rare	Moderate	7	EPBC 2018/8383 Ministerial Statement No. 1180

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Construction of the Port facilities under the CONTRACTOR SOW. Construction of facilities including conveyor, shiploading facilities and storage facilities.	Disturbance of sediments within the Port area delivering excess sediments within the coastal zones and benthic habitats, potentially smothering food sources and habitat for marine fauna. Lighting emissions produced by the construction works conducted at the Port facilities may impact turtle species nesting behaviours at beaches adjacent the Port.	Likely	Major	20	Comply with the following PPA plans where they apply to the CONTRACTOR SOW at the Port; - Benthic Primary Producer Management Action Plan - Native Fauna Management Program - Environment Monitoring Plan - Coastal Processes Monitoring and Management Plan - Process and Guidelines Sustainability Strategy Implement and comply with the Light Management Plan (PCF-PD-EN-LMP). Design plant lighting in accordance with AS 4282-1997: Control of Obtrusive Effects of Outdoor Lighting Implement and comply with controls Attachment A	Unlikely	Major	14	EPBC 2018/8383 Ministerial Statement No. 1180 *AS 4282-1997: Control of Obtrusive Effects of Outdoor Lighting* *Environmental Protection* (Noise) *Act 1997* *Environment Protection* (Sea Dumping) *Act 1981* (Cth)

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	Underwater noise may impact fauna during port facility construction works.								
Marine Environmental Quality									
Degradation of marine water quality due to construction activities (i.e. soil movements, construction of causeway, increased traffic movements while constructing Port facilities).	Indirect impact on the mangrove communities of King Bay as a result of water quality changes. Impacts on marine environmental quality from runoff collected from the hardstand surfaces, construction and increase traffic during	Likely	Major	20	Comply with requirements outlined in Attachment A. Implement the Surface Water Management Plan (PCF-PD-EN-SWMP). Approval from Water Corporation for use of MUBRL during construction works. Comply with the PPA Environmental Management Plan. Comply with the MURBL related Ministerial Statements (MS567 and MS594). Comply and implement the	Unlikely	Major	14	Licensing under **Part V of the EP Act** to authorise discharge. Relevant licencing under the **Rights in Water and Irrigation Act** 1914 (RIWI 1914). Approval from Water Corporation for use of MUBRL. Ministerial Statements 567 and 594

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	construction within the Dampier Port area. Discharge and run-off during construction of port facilities may contaminate surrounding marine waters, degrading the marine water quality. Increased erosion and stormwater run-off due to soil movements, clearing and other construction activities related to the causeway causing transport and				Solid and Liquid Waste Management Plan (PCF-PD-EN-SLWMP). Comply the following PPA plans where they are applicable during the CONTRACTOR works. - Benthic Primary Producer Management Action Plan - Environment Monitoring Plan - Coastal Processes Monitoring and Management Plan - Process and Guidelines Sustainability Strategy				(MUBRL)

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	deposition of sediments into King Bay via the Supratidal Flats. Wastewater discharge to the MUBRL has the potential to impact on marine environmental quality (NB: CONTRACTOR are proposing to utilize the MUBRL for wastewater discharges during construction phase).								
Inland Waters									

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Clearing/grubbing Cut and fill Earthworks	Alteration of surface water hydrology and hydrogeology may impose further impacts to local ecology. Disturbance of ASS during cut and fill activities, particularly in the southern portion of Site C and the adjacent supra-tidal flat area (Categorized as Class 1). Lower risk (however still some risk) or exposing ASS during works within Site F.	Possible	Major	19	The CONTRACTOR shall comply with the Conditions stated within the MS 1180 related to Hydrogeological Management Conditions 6-1 through 6-10. If dewatering is required, a Hydrogeological Management Plan will be referred to for controls pertaining to the management of surface water hydrology and hydrogeology. The CONTRACTOR must implement the ASSMP. Implement and comply with the Surface Water Management Plan (PCF-PD-EN-SWMP). Environmental Team to inspect ground disturbing activities regularly as per Section 19 of this Plan. An Erosion Sediment Control Plan will be developed as part of the GDP process when	Unlikely	Major	14	Relevant licencing under the ***Rights in Water and Irrigation Act 1914*** (RIWI 1914). Ground Disturbance Permit. Conditions 6-1 through 6-10 within **MS** 1180 related to Hydrogeological Management.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					conducting ground disturbing activities.				
Stockpiling imported raw materials, and local topsoil and subsoils during construction.	Run-off from stockpiles may cause sedimentation and deposition of foreign/227obiliz atio/227obilizati o material into the environment.	Likely	Moderate	17	Stockpiles to be managed in accordance with relevant management plans and protocols. Comply with requirements outlined in the Surface Water Management Plan (PCF-PD-EN-SWMP). Material Tracking System implemented during construction. GPS 227obiliza to track and record locations of stockpiles and type of material. Ensure ESCs are implemented around	Unlikely	Moderate	12	Relevant licencing under the ***Rights in Water and Irrigation Act 1914*** (RIWI 1914). Ground Disturbance Permit.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					stockpiles to limit contaminated run-off. Stockpile contaminated topsoil's (i.e., from weeds, ASS, spills) separately from clean fill or topsoil. Ensure Stockpiles are labelled / signposted. Training and awareness conducted onsite. Prepare stockpiles prior to rainfall or potential flood events. Environmental Team to inspect stockpiles regularly as per Section 19.1 of this Plan.				
Storage and handling of chemicals, hazardous materials and wastewater during construction of the causeway and / or other areas onsite.	Potential for spills or leaks to contaminate the surrounding surface water values within and surrounding the site. Pollution Impacts to the	Possible	Major	19	Supply and construct mechanisms to avoid/mitigate potential spills or discharge as detailed in Appendix F. Comply with and implement the requirements outlined in the Surface Water Management Plan (PCF-PD-EN-SWMP).	Unlikely	Major	14	***EP Act 1986* – Part V** – Works Approval & Licence – Cat 73. Chemical storage Ministerial Statement 1180.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	supratidal zones (Hearson Cove and King Bay) during the construction of the proposed causeway between sites F and C. Potential impacts to the mangrove communities at King Bay where spills and contaminants are delivered to the supratidal to intertidal areas.				Further controls pertinent to spills and leaks to be implemented as per Attachment A. Environmental Inspections as per Section 19.1 of this Plan to ensure the integrity of storage facilities and the proper storage requirements are being adhered to. Storage of chemicals and hazardous substances shall not be permitted on the supratidal areas or other areas prone to flooding or drainage / runoff. Ensure compliance with Condition requirements within Condition 8 of MS 1180.				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Construction of access tracks, laydown areas and hardstands areas.	Stormwater or wastewater run-off from these areas have the potential to contaminate the surrounding surface water values when runoff is delivered to the supratidal to intertidal areas.	Likely	Moderate	17	Where possible, permanent infrastructure and laydown areas will avoid the higher, steeper areas along the southern boundary of the development envelope. Run-off will be diverted into appropriate storage units; implemented and managed in accordance with Attachment A Ensure compliance with Condition requirements within Condition 8 of MS 1180. Further controls pertinent to run-off to be implemented as per the Surface Water Management Plan (PCF-PD-EN-SWMP). Environmental Inspections as per Section 19.1 of this Plan to ensure ESCs are in place and are working and altered drainage has not impacted surrounding surface water	Unlikely	Moderate	12	Ministerial Statement No. 1180.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					values. An Erosion Sediment Control Plan will be developed as part of the GDP process when constructing these areas and disturbing the ground.				
Excavations exposing ASS.	Disturbance of Acid Sulfate Soils. Potential to cause significant environmental and economic impacts including fish kills and loss of biodiversity in waterways. Contamination of groundwater by 231obilization of acids, arsenic, heavy metals	Possible	Major	19	Determine risks of ASS / PASS prior to conducting excavations. Comply with the ASSMP where ASS is exposed during works or where it was identified during works. Where previously unknown areas of ASS are identified during the construction works, works must cease immediately, and the environmental team shall be present to identify the presence of ASS. Visual identification can be conducted and Field sampling	Unlikely	Major	14	Licences to take water under s 5C of the *RIWI Act.* Licences to construct or alter a well under s 26D of the *RIWI Act.*

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	and other contaminants and corrosion of concrete and steel infrastructure by acidic soil and water.				and supporting Laboratory analysis (NATA accredited Laboratory) will likely be required to confirm visual and olfactory indications. All analysis must be conducted at a NATA accredited Lab. If ASS are present, comply with the Acid Sulfate Soils Treatment Plan. Where treatment is required, a containment and treatment facility (treatment pad) will be developed onsite. Management will be in accordance with the ASSMP. Regular Environmental Inspections as per Section 19.1 of this Plan.				

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Construction of and operations of the concrete batching plant.	Stormwater or wastewater run-off from the concrete batching site have the potential to contaminate the surrounding surface water environment. Sediment laden/alkaline water entering surrounding stormwater / drainage onsite and exiting site Alkaline washout impacting soil chemistry/ groundwater and associated nearby receptors Fines and	Likely	Moderate	17	Ensure the Construction and operations of the Concrete Batching Plant is in accordance with the Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998. Develop and implement a ESCP for the Concrete Batching Plant. Regular Environmental Inspections as per Section 19.1 of this Plan. Prepare the Concrete Batching Plant Management Protocol which will specifically manage the emissions and discharges likely from the batching plant. Environmental inspections as per Section 19.1 of this plan. Waste disposal as per the Attachment F.	Unlikely	Moderate	12	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	penalties associated with Schedule 1 substances being discharged (Environmental Protection [Unauthorised Discharges] Regulations 2004).								
Coastal Processes									
Construction of the causeway between sites C and F.	Impacts to tidal water flow movements within the King Bay / Hearson Cove supratidal to intertidal flat area. These coastal processes may impact sediment deposition, intertidal and supratidal	Likely	Moderate	17	Ensure causeway culvert flow velocities of less than 1.0 m/s to achieve the environmental outcomes of this design as per Condition 1 of MS 1180. The CONTRACTOR shall ensure the installation of seven arch shaped culverts each having a width of 4.37 m and a height of 2.87 m beneath the causeway to prevent tidal water flows being impeded within the King Bay / Hearson Cove supratidal to	Possible	Moderate	13	**Bed and banks permit** under s 11 of the *RIWI Act*;

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	vegetation and benthic communities, including the King Bay mangrove community.				intertidal flat area. Causeway construction works will be completed over the shortest time practicable to minimise the period of environmental disturbance in the saline coastal flat. Prepare and Implement an ESCP for this area (prior to ground disturbance and in line with the GDP process and application). Environmental inspections..				
Use of the MUBRL during construction works (if required).	Potential to degrade marine water quality.	Possible	Moderate	13	All industries utilising the MUBRL are required to meet the requirements of the Water Corporation's Technical Compliance Advice Bulletin Ref. PM20992155 (22 February 2019). The CONTRACTOR shall comply with Ministerial Statements 567 and 594 from 2001 and 2002 respectively that specifically detail	Unlikely	Moderate	6	**Approval from the Water Corporation** is required to use the MUBRL. Licensing under Part V of the *EP Act.*

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					conditions regarding the MUBRL. The CONTRACTOR shall obtain the approval of the Water Corporation for use and discharge to the MUBRL.				
Construction of the Port, facilities	Construction of port facilities may impact coastal processes, causing further impacts to coastal ecology; process changes may include sedimentation and deposition, changes to erosion rates and unnatural particle accumulation.	Likely	Major	20	Comply with the following PPA management plans where they apply to the CONTRACTOR construction activities; - Benthic Primary Producer Management Action Plan - Environment Monitoring Plan - Coastal Processes Monitoring and Management Plan - Process and Guidelines Sustainability Strategy	Unlikely	Major	14	
Social Surrounds									

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Increased traffic.	Increased traffic movements heighten the potential for injury or death via vehicle strike of local community (visitors to heritage sites, personnel and fauna). Increased traffic causing visual and ambient disturbance to Aboriginal heritage sites being visited.	Unlikely	Major	14	Implement controls pertinent to vehicle movement the Cultural Heritage Management Plan (PCF-PD-EN-CHMP). Consult with MAC as required by the MS 1180 and where the OWNER requires the CONTRACTOR to consult. Speeds signs and controls, signage and vehicles to use designated access roads. Training and awareness on these controls. Prestart and take 5 reminders of traffic hazards. Comply with the OWNER PEMP.	Rare	Major	8	Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act) and associated conditions under a s.18 consent. **Ground Disturbance Permit** required for roadworks.
Movement of heavy plant and vehicles. Ground disturbing activities.	Dust deposition affecting vegetation and their associated cultural values. Potential impacts to the Murujuga	Possible	Major	19	Implement controls pertinent to dust management from Appendix J and the Cultural Heritage Management Plan (PCF-PD-EN-CHMP). The CONTRACTOR shall engage Aboriginal Heritage	Unlikely	Major	14	**Ground Disturbance Permits** before any clearing or grubbing can commence.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	Cultural Landscape World Heritage Listing. Potential for cause of complaints from other land-users/stakeholders.				Monitors through MAC from the Aboriginal stakeholder groups to undertake the monitoring of all initial ground disturbing works and salvage of heritage material (in consultation and direction with the OWNER). Comply with the OWNER PEMP.				
Construction related noise and vibration.	Impacts to recreational and cultural activities due to increased cumulative noise levels at locations such as Hearson Cove and Ngajarli Potential for cause of complaints from other land-users/stakeholders.	Possible	Major	19	Implement controls pertinent to noise and vibration management from the Cultural Heritage Management Plan (PCF-PD-EN-CHMP) and Appendix K. Training & Awareness on Cultural Heritage Values and relationship with MAC. Comply with the OWNER PEMP.	Unlikely	Major	14	Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act) and associated conditions under a s.18 consent.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Disturbance of sensitive receptors/heritage sites.	Potential damage to ancient rock art and heritage sites, including impacts to the environment that may limit traditional indigenous activities (i.e. fishing). Lighting impacting the experience for Traditional Owners at Deep Gorge (now known as Ngajarli) Indirect impacts to the Fish Thalu Aboriginal heritage site situated in the King Bay / Hearson Cove supratidal to	Likely	Major	20	Implement controls pertinent to the disturbance of sensitive receptors from Attachment D and the Cultural Heritage Management Plan (PCF-PD-EN-CHMP). Implement the Light Management Plan (PCF-PD-EN-LMP). Training & Awareness on Cultural Heritage Values and relationship with MAC. Ensure the CONTRACTOR team are aware of Traditional Owners access corridors within and adjacent to the site, that allow for access to heritage sites from Hearson cove road. Ensure where the CONTRACTOR are required (by the OWNER) that representatives from the CONTRACTOR attend the Regular meetings between	Unlikely	Major	14	Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act) and associated conditions under a s.18 consent.

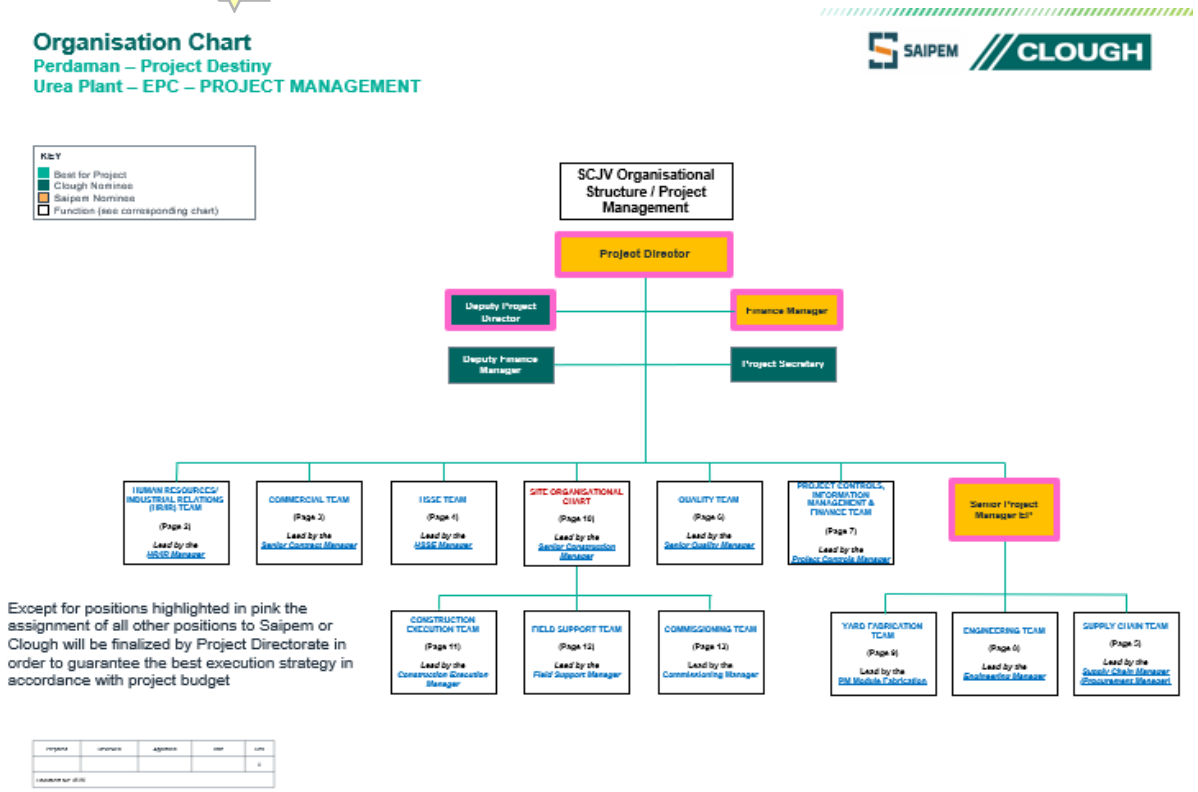
Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	intertidal flat area to the north-east of Site F				the OWNER and MAC, to establish and maintain processes and accountability. As required the CONTRACTOR shall invite MAC to site, to conduct Cultural Awareness Training. Unexpected Finds Procedure will be implemented by the construction team, and personnel will be made aware of this procedure. In addition, prior to ground disturbing activities, the construction teams will be made aware for the potential of uncovering aboriginal sites and artifacts during pre-starts and take 5 processes.				
Construction causing restriction of access to heritage sites.	Construction works may limit indigenous and tourism related access to heritage sites and other valued	Possible	Major	19	Implement controls pertinent to construction related restriction of access from Attachment D and the Cultural Heritage Management Plan (PCF-PD-EN-CHMP).	Unlikely	Major	14	Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act) and associated conditions under a s.18 consent.

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
	areas surrounding the development envelope.				Comply with the OWNER PEMP.				
Construction personnel heritage site access.	Some heritage sites are gender restricted. Potential to cause emotional and spiritual unrest if ignored. Unauthorised access and/or damages to heritage sites and values.	Possible	Major	19	Implement controls pertinent to work-personnel access limitations Attachment D and the Cultural Heritage Management Plan (PCF-PD-EN-CHMP). As required the CONTRACTOR shall invite MAC to site, to conduct Cultural Awareness Training. Comply with the OWNER PEMP.	Unlikely	Major	14	Compliance with the *Aboriginal Heritage Act 1972* (WA) (AH Act) and associated conditions under a s.18 consent.
Air Quality									

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
Maintaining Ambient Air Quality	Impacts from various prescribed activities requiring Part V approvals (– including but not limited to concrete batching plant, crushing and screening plant, chemical storage, Urea Plant construction, desalinization plant etc) to the ambient air quality within the PDE and to surrounding sensitive receivers	Possible	Major	19	The CONTRACTOR will apply for the relevant categories Part V approvals and licenses to carry out construction and operations of the premises. As part of the Part V approval – the CONTRACTOR could be required to assist the OWNER with Emissions Verification Plan and Program covering. Verification of construction incorporating pollution control equipment relevant to air quality with performance to as approved standards. The CONTRACTOR shall Implement controls within the Part V (DWER) works approvals / licenses when obtained for the emissions to air relating to construction activities. Prepare the Air Quality Management Protocol,	Unlikely	Major	14	**Part V EP Act –** Works approvals and licenses

Activity/Aspect	Impact	Likelihood	Consequence	Risk Rating	Control Measures	Likelihood	Consequence	Residual Risk	Legislation
					identifying relevant controls, management strategies, monitoring and reporting under the approval for each category license (schedule 1 – Part V license and approval). Incorporate pollution control equipment and processes during construction works. Implement the Appendix J Implement the Air Quality Management Plan (PCF-PD-EN-AQMP) where it applies to construction. Stack emission sampling ports will be designed and installed during construction to Australian Standards. Where required – comply with monitoring requirements within Management action 6 of the AQMP – requirement for monitoring during construction and before commissioning to establish pre-existing or baseline air quality.				

APPENDIX D – PROJECT ORGANISATIONAL CHARTS

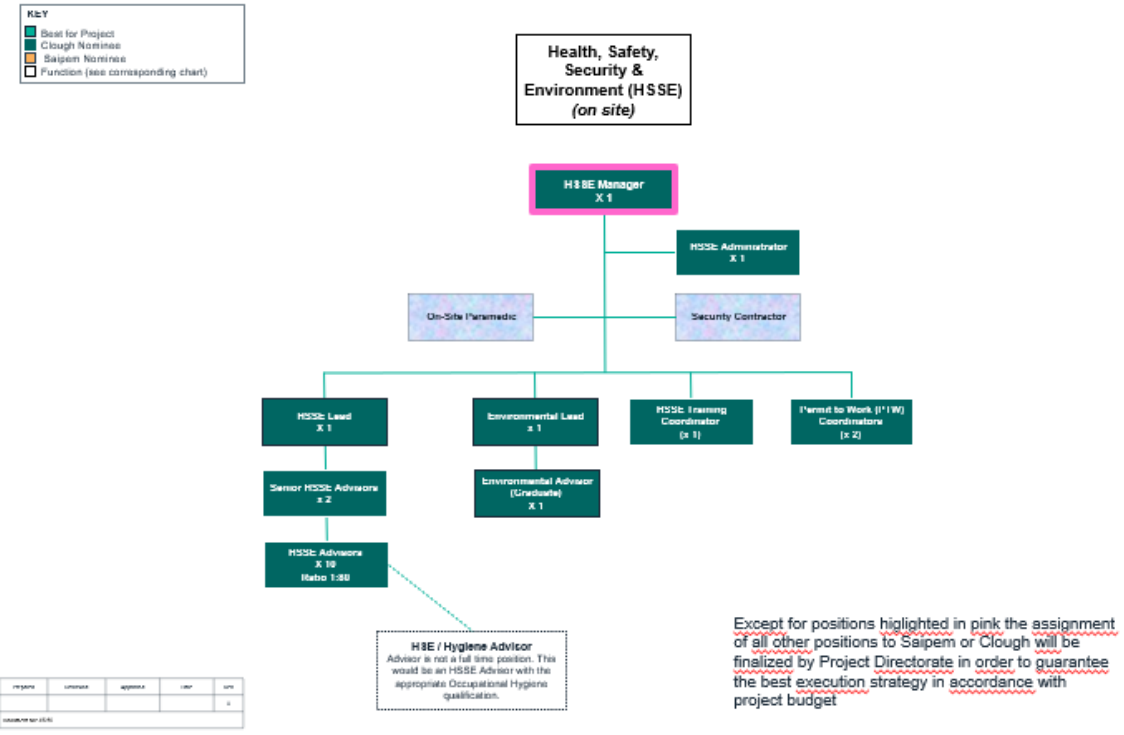


Organisation Chart

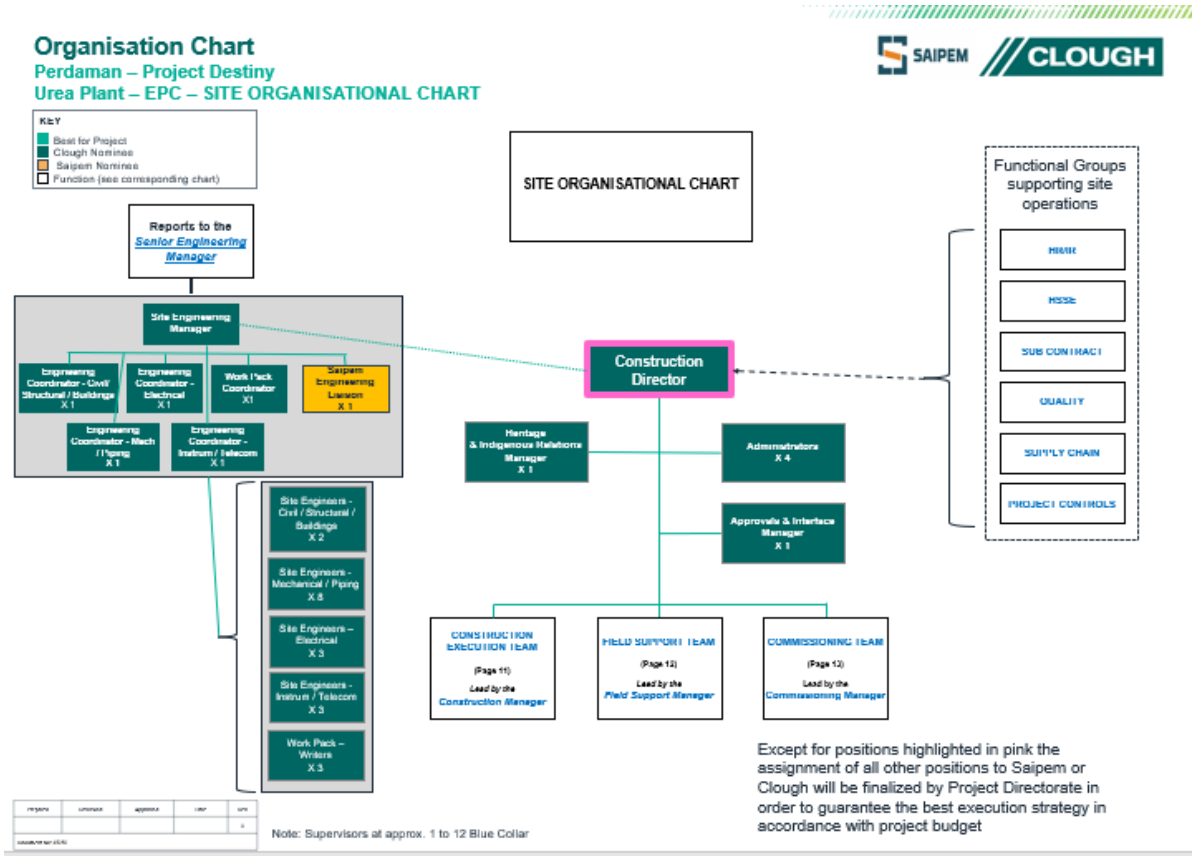
Perdaman – Project Destiny

Urea Plant – EPC – HEALTH, SAFETY, SECURITY & ENVIRONMENT (HSSE)

SAIPEM CLOUGH



Except for positions higlighted in pink the assignment of all other positions to Saipem or Clough will be finalized by Project Directorate in order to guarantee the best execution strategy in accordance with project budget



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APPENDIX F – HYDROCARBONS & HAZARDOUS SUBSTANCES PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX F
HYDROCARBONS & HAZARDOUS SUBSTANCES MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/09/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

Revision No	Date	Revision Details
1	14/09/2023	REISSUED FOR USE
0	26/4/2023	ISSUED FOR USE

Table of Contents

1. EXECUTIVE SUMMARY

This Hydrocarbons & Hazardous Substances Management Protocol (HHSMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Perdaman Solid and Liquid Waste Management Plan (PCF-PD-EN-SLWMP) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The HHSMP describes the Scope of Work, addresses all requirements related to management of hydrocarbons and hazardous substances by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Hydrocarbons & Hazardous Substances Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The HHSMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This HHSMP must be read and implemented in conjunction with the most recent and approved version of the Perdaman Solid and Liquid Waste Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas

	are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction

ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
HHSMP	Hydrocarbons & Hazardous Substances Management Protocol
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-SLWMP	Perdaman Solid & Liquid Waste Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Hydrocarbons & Hazardous Substances Management Protocol (HHSMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and aligns with the following Perdaman Management Plans:

- Solid & Liquid Waste Management Plan (PCF-PD-EN-SLWMP)

The HHSMP describes the Scope of Work, addresses all requirements related to management of hydrocarbons and hazardous substances by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from hydrocarbons and hazardous substances at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Hydrocarbons & Hazardous Substances Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The HHSMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This HHSMP must be read and implemented in conjunction with the most recent and approved version of the Perdaman Solid and Liquid Waste Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. This protocol contains specific references to the Perdaman Solid & Liquid Waste Management Plan, where the reader may have to review the Perdaman Solid & Liquid Waste Management to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting hazardous material management, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Perdaman Solid & Liquid Waste Management Plan for further details).

This protocol will be reviewed and amended any time the Perdaman Solid & Liquid Waste Management Plan has been reviewed and amended, to ensure all Plans appropriately

correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data

and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified potential impacts to Key Environmental Factors from hydrocarbons and hazardous substances stored during construction and operation stages of the Project. The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the impact from hydrocarbons and hazardous substances to achieve objectives and comply with legislation relating to protection of environmental values.

This HHSMP will communicate the relevant aspects that are within the Perdaman Solid & Liquid Waste Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the Perdaman Solid & Liquid Waste Management Plan relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from hydrocarbons and hazardous substances emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Perdaman Solid & Liquid Waste Management Plan.

Table 6-1 Hydrocarbon and Hazardous Material Mitigation Measure

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Up to date Safety Data Sheets for all chemicals used on site will be readily accessible to all Project Personnel and emergency services authorities.	CF, Ca, Co, P
A register of all hydrocarbon and hazardous substances stored on site will be prepared and will be readily accessible to all Project Personnel and reviewed regularly.	CF, Ca, Co, P
Chemicals are to be stored on or within a bunded structure – capacity 110% of largest container, impermeable walls and floor (soil floors not sufficient) and roofed in accordance with Australian Standard AS1940:2004 The storage and handling of flammable and combustible liquids.	CF, Ca, Co, P
Hydrocarbon and chemical storage sheds must be located where they will not pose a risk to the environment.	CF, Ca, Co, P
Hydrocarbon and chemical storage areas will include appropriate signage and labels, in accordance with relevant legislation and Australian Standards.	CF, Ca, Co, P
The amount of fuels and chemicals that are stored on-site will be minimised as far as practicable. Chemicals that are no longer required will be removed from site by approved transport and disposal methods.	CF, Ca, Co, P
Spill kits will be located around the site, in particular at chemical storage locations and where fuels are transferred or decanted.The contents of the spill kit will be relevant to the area and the potential spill.	CF, Ca, Co, P
Spill response procedures will be developed, communicated to all Project Personnel and implemented across the site.	CF, Ca, Co, P
Fuel to support mobile plant and equipment at the site will be stored in bunded areas and or in self bunded tanks. Appropriate licensing will be sought prior to operation of fuel storage systems. Volumes will not exceed threshold limits specified in relevant legislation without appropriate licensing.	CF, Ca, Co, P

Refuelling mobile plant and equipment is to be undertaken within bunded refuelling areas suitably designed and operated to capture any spill or overflow associated with the refuelling process. The system must be installed to ensure surface water is excluded from the bund and any rain falling into the bund is safely held, without the risk of overflow, before being decanted and disposed of at a suitable waste management facility.	CF, Ca, Co, P
Mobile refuelling procedures will be developed and implemented to minimise risk of harm to the environment. This includes but is not limited to ensuring mobile bunding is placed under the fuel delivery vehicle, the plant / machinery being refuelled and any joinsin fuel delivery hoses to capture any spills or leaks associated with the refuelling process. The mobile refuelling procedure must form part of the induction for plant machinery operators and fuel delivery operators.	CF, Ca, Co, P
Only manual trigger fuel nozzles are to be used during refuelling of plant and equipment. The operator is to manually hold the delivery trigger in the open position and must not lock the trigger to prevent it from automatically shutting off when the trigger is released.	CF, Ca, Co, P
Any spills or leaks into bunded areas will be decanted and cleaned from the bund immediately after they occur. No further fuelling, transfer or decanting is to occur until the spill is cleaned up and reported.	CF, Ca, Co, P
All appropriate licenses and permits, including but not limited to those required for the storage of fuel and chemicals, will be achieved prior to site storage of those products.	CF, Ca, Co, P
All removals shall be recorded, and receipts will be kept as per methods in non-hazardous waste controls. Controlled Waste Tracking Forms/Controlled Waste Tracking numbers shall be kept and recorded for the removal of each load of controlled waste.	CF, Ca, Co, P
Hazardous waste materials and dangerous goods will be disposed of in accordance with the relevant legislation and Project requirements at approved and certified facilities.	CF, Ca, Co, P
Appropriate licences and management controls shall be in place for the transport, handling, storage and disposal of DGs in Minor Storage, Placarding and Manifest quantities prior to the delivery and activity being undertaken. All DGs shall be handled and transported in accordance with the *Dangerous Goods Safety Act 2004*, Australian Dangerous Goods Code and other supporting regulations. The driver and vehicle must be licenced to carry HazMat's and DG (if applicable volumes are reached).	CF, Ca, Co, P
Liaise with, obtain approvals from and keep all relevant Authorities fully informed of any hazardous materials stored on the site and of the contingency plans to be adopted for any spills.	CF, Ca, Co, P

When selecting materials for the Project, the least hazardous substances will be selected in preference for the project, and risk assessments will be required for substances posing potential risk during use, as per the ChemAlert rating.	CF, Ca, Co, P
All HazMat's will be correctly labelled in compliance with National Code of Practice for the Labelling of Workplace Substances NOHSC 2012:1994 to allow substances to be used in the safest manner that shall protect the environment. Signage shall be in accordance with Australian standard AS 1319	CF, Ca, Co, P
Adhere to Safety Data Sheets for all handling, use and storage of chemicals and hazardous materials.	CF, Ca, Co, P
SDS must be issued with Australian emergency contact details and be less than 5 years old, in addition to being supplied to waste contractors as per Guidelines of Controlled Waste Generators.	CF, Ca, Co, P
When handling chemicals, the SDS must be in the immediate work area of the corresponding SWMS/JHA (SWMS/JHA must also be in the immediate work area). The SWMS/JHA document must consider environmental risks of using the chemical or DG (if applicable).	CF, Ca, Co, P
A hard copy of SDS's will be kept in the immediate work area and the location for Hazardous Substances or Dangerous Goods storage, and electronic copies of SDS's will also be kept in the Project HSE office.	CF, Ca, Co, P
HazMats and DG storage areas to be restricted access.	CF, Ca, Co, P
If the contents of a container are unknown, it shall be tagged as out-of-service until it can be identified and labelled.	CF, Ca, Co, P
Where substances are decanted at the construction site, the type of labelling shall depend on the period of time the product is consumed over. Where a product is not being spent immediately, the container the product must be decanted to must be labelled with: The name of the product The risk of the product to the environment (toxicity) The risk phrases The product HAZCHEM Code and Dangerous Good Code.	CF, Ca, Co, P
Ensure all storage sites for oil and other contaminant materials and plant maintenance areas, are confined to specially designed areas, bunded and away from drains, water courses, wetlands and floodplains in accordance with Law. These areas must be constructed to ensure that any spillage is confined in accordance with Law. In addition, all fuels and lubricants must be stored in a bunded area under laid with plastic. Adequate quantities of suitable material to counteract spillage must be kept on relevant premises.	CF, Ca, Co, P

Oily or contaminated products such as rags, filters, grease cartridges etc. are to be disposed into hydrocarbon bins or relevant containment and removed off-site by licenced contractor.	CF, Ca, Co, P
Wastes that are not suitable to be disposed into provided waste receptacles i.e., product liquids, incompatible materials, impacted soils etc. will be containerised separately.	CF, Ca, Co, P
Septic waste is to be pumped into a licenced liquid waste transport vehicle and taken to a licensed facility.	CF, Ca, Co, P
Batteries will be stored on-site in bunding prior to being removed and recycled.	CF, Ca, Co, P
Used engine coolant and lubricating oils will be containerised (IBC), for recycling at licenced waste facility.	CF, Ca, Co, P
Waste oil to be stored on-site in a secure bunded area and periodically removed by a licenced waste contractor to a licenced waste facility.	CF, Ca, Co, P
Empty printer and toner cartridges will be segregated and removed to a recycling service provider.	CF, Ca, Co, P
Ensure tyres are not mixed with other waste streams and are to be removed by a licenced contractor for recycling. No greater than 100 tyres will be on-site at any time.	CF, Ca, Co, P
Ensure hydrocarbon and hazardous waste skips are appropriate to the waste type (i.e., fitted with lid and sealed).	CF, Ca, Co, P
Spills kits, drip-trays and other preventative devices shall be kept within fuel delivery vehicles at all times.	CF, Ca, Co, P
Mobile refuelling activities must only be from trailers fitted with twin skinned tanks and separately bunded. All refuelling must be conducted using spill protection (i.e., drip trays).	CF, Ca, Co, P
Spill trays and spill kits will be maintained on-site, available near fuel and other hazardous material storage and refuelling areas and be utilised to contain and clean-up any spills. Where inadequate stock in spill kits; immediately replace materials and stock in spill kits.	CF, Ca, Co, P
Ensure spills are controlled prior to entering drainage lines and watercourses through spill clean-up and Erosion and Sediment Controls.	CF, Ca, Co, P

Ensure all personnel working with hazardous materials are familiar with procedures, spill control and clean-up. Personnel will be trained in spill response procedures through inductions, Toolbox talks and additional training where required. Where spill is inadequately cleaned up, leaving unreported contaminated soils / water or improper disposal; provide additional training to personnel on clean-up and notification procedures, update incident report, rectify spill remediation and the handling of HazMats and DGs.	CF, Ca, Co, P
No vehicle or mobile plant refuelling shall occur within 50 m of a watercourse or intertidal zone.	CF, Ca, Co, P
Stationary plant (e.g., generators) shall be self-bunded. Bunds are to be inspected weekly and after heavy rains and emptied as required.	CF, Ca, Co, P
Fuel truck/trailer operators shall not leave area whilst refuelling equipment or filling a tank in case there is a need for emergency shut-off.	CF, Ca, Co, P
No ignition sources within at least a 10m radius of the fill point will be observed during refuelling	CF, Ca, Co, P
Petroleum products and used filters shall be drained into an appropriate container to remove any leftover product prior to disposal as solid hydrocarbon waste.	CF, Ca, Co, P
Ensure bunds do not contain liquids. Following rain events bunds will be inspected and pumped dry, and if required into a controlled waste IBC for contaminated/ oily water for appropriate removal, treatment or disposal.	CF, Ca, Co, P
In the case of a spill: Prevent spill from spreading by using booms/socks in spill kit or by making a makeshift bund and control access to spill area. Soak up the spill with absorbent material and ensure the surface is left clean. Collect used absorbent material in a heavy plastic bag or other suitable container and arrange for disposal at an appropriate facility. Soils contaminated by spills are to be removed to an appropriate stockpile location for remediation or disposal. Spills are to be contained immediately and remediated within 24 hours to minimise the potential for contaminants to enter groundwater. If a spill cannot be cleaned up immediately, ensure it is appropriately isolated and contained. Arrange to have a suitable third party available to attend to any major spill clean-up, not able to be adequately addressed with site spill kits. Report all spills as an environmental incident using InControl system.	CF, Ca, Co, P

Leaking vehicles must be reported and serviced before returning to the construction area. Where vehicles, equipment or containment showing evidence of leakage or wear; record in pre-start checklist, record as correction action, service vehicles, equipment and plant as per manufacturers specifications, repair and containment where applicable.	CF, Ca, Co, P
Inspections are to be undertaken of storage areas regularly. Where general containment standards and storage requirements are not being met; record as a corrective action or incident, rectify the issue with the responsible party.	CF, Ca, Co, P
No major vehicle or plant servicing shall be undertaken on-site, except in designated servicing areas. Servicing of mobile plant will be conducted within a designated and contained area to minimise risk to surrounding environment on-site. The area shall be identified on environmental control maps and site maps.	CF, Ca, Co, P
Servicing of vehicles must be kept up to date at all times, and in the case of a vehicle or plant being overdue for servicing, it is to be tagged out of operation until a service has been conducted.	CF, Ca, Co, P
Where evidence of maintenance or refuelling of vehicles, plant machinery and equipment not occurring in designated areas or with adequate controls; record as corrective action or incident if required, reiterate to personnel involved in this aspect of works, tag out of operation until servicing is complete.	CF, Ca, Co, P
All contaminated stormwater (levels exceeding nominated criteria) i.e. runoff containing hydrocarbons >5ppm Total Petroleum Hydrocarbons (TPH) shall not be discharged into the environment without treatment under any circumstance.	CF, Ca, Co, P
Minimize the use of products containing CFCs, or products manufactured by processes in which CFCs are used.	CF, Ca, Co, P
Minimise impacts of contamination to marine water and surface water quality.	Co, P
Ensure personnel working within the PPA jurisdiction are competent in Oil Spill Incident Response Training (OSIRT). Where required, SCJV personnel working within the Port Area, could be required to undertake this training conducted through PPA.	P

APPENDIX G – FIRE MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX G
FIRE MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

Revision No	Date	Revision Details
1	14/9/2023	REISSUED FOR USE
0	26/4/2023	ISSUED FOR USE

Table Of Contents

1. EXECUTIVE SUMMARY

This Fire Management Protocol (FMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The FMP describes the Scope of Work, addresses all requirements related to prevention of fire at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

Altered fire regimes can result in increased loss or degradation of native flora, vegetation, fauna and habitat values. Uncontrolled fire could also negatively impact social surrounds and significant cultural heritage places and sites.

Construction activities that have been identified with the potential to cause fire are:

- Hot works
- Operations of machinery, plant, equipment and vehicles
- Refuelling activities
- Use of chemicals and hazardous substances
- Personnel smoking
- Movements offsite by personnel

The FMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This FMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Flora Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
PROJECT	PROJECT CERES (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
OWNER	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.

CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.

PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SENSITIVE RECEPTOR	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit

FMP	Fire Management Protocol
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-FMP	Confirmed Flora Management Plan
0000-ZA-E-09734	Flora and Vegetation Management Sub-Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Fire Management Protocol (FMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The FMP describes the Scope of Work, addresses all requirements related to prevention of fire at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

Altered fire regimes can result in increased loss or degradation of native flora, vegetation, fauna and habitat values. Uncontrolled fire could also negatively impact social surrounds and significant cultural heritage places and sites.

Construction activities that have been identified with the potential to cause fire are:

- Hot works
- Operations of machinery, plant, equipment and vehicles
- Refuelling activities
- Use of chemicals and hazardous substances
- Personnel smoking
- Movements offsite by personnel

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that the occurrence of fire caused by Project activities are prevented and ensure compliance with the conditions set out in the Project Approvals and Contract.

The FMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This FMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Flora Management Plan (PCF-PD-EN-FMP) and Flora and Vegetation Management Sub-Plan (0000-ZA-E-09734) and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. This protocol may contain specific references to the Confirmed Flora Management Plan and Flora and Vegetation Management Sub-Plan, where the reader may have to review these documents to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting hazardous material management, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed Flora Management Plan for further details).

This protocol will be reviewed and amended any time the Confirmed Flora Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one

another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data

and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA has identified Flora and Vegetation as a Key Environmental Factor. The EPA Objective for Flora and Vegetation is:

- To protect flora and vegetation so that biological diversity and ecological integrity are maintained.

The EPA require the OWNER to meet the following flora and vegetation Outcomes & Objectives for the Project as stated within the Ministerial Statement 1180:

- Condition 4-2 (1) All direct impacts (other than the direct impacts authorised under Condition 4-1) are avoided and minimise indirect impacts to native vegetation.

This FMP will communicate the relevant aspects that are within the Confirmed Flora Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the FMP relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from hydrocarbons and hazardous substances emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Confirmed Flora Management Plan

Table 6-1 Fire Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Implement the hot work permit system including: • Risk assessment will be completed before commencement of any hot work. • Exemptions sought from Bushfires Act 1954 for hot work on fire ban days • Daily weather check for fire ban status prior to conducting hot works.	CF, Ca, Co, P
Smoking confined to designated smoking areas only.	CF, Ca, Co, P
Locations of smoking areas to be communicated to personnel.	CF, Ca, Co, P
All vehicles, buildings, machinery and drill rigs will be fitted with serviced fire extinguishers.	CF, Ca, Co, P
Fire control equipment will be available in fire-risk areas including but not limited to hazardous material storage areas, hot worksareas and service trucks.	CF, Ca, Co, P
An adequate number of personnel will be trained in basic fire awareness, fire response and use of fire suppression.	CF, Ca, Co, P
No open fires are permitted at any time.	CF, Ca, Co, P
Liaise regularly with the local government authorities regarding fire danger status.	CF, Ca, Co, P
Maintain hot machinery in designated cleared areas.	CF, Ca, Co, P
Fire breaks established and maintained around key infrastructure and active construction sites.	CF, Ca, Co, P
A dust suppression vehicle will be available as a fire response vehicle.	CF, Ca, Co, P

Flammable and combustible materials are to be stored and isolated at all times in accordance with AS1940:2017.	CF, Ca, Co, P
No burning-off permitted.	CF, Ca, Co, P
Plant and vehicles operating over or through vegetation will be fitted with appropriate exhaust systems positioned or covered so that the vegetation cannot meet the exhaust system.	CF, Ca, Co, P
Refueling and vehicle servicing areas will be located away from sensitive receptors.	CF, Ca, Co, P
Conform to all requirements for fire prevention advised by the City of Karratha, Department of Fire and Emergency Services and Department of Biodiversity, Conservation and Attractions.	CF, Ca, Co, P
Use of vehicle and equipment during Total Fire Ban Days (Department of Fire and Emergency Services) or vehicle movement bans (City of Karratha) to be avoided unless authorised by DFES and/or the City.	CF, Ca, Co, P
Ensure suitable quantity and quality of water for firefighting.	CF, Ca, Co, P

APPENDIX H – DRILL & BLAST NEAR ROCK ART MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN APPENDIX H DRILL AND BLAST NEAR ROCK ART MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

1	**14/9/2023**	**REISSUED FOR USE**
0	26/4/2023	ISSUED FOR USE
B	21/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW
Revision No	**Date**	**Revision Details**

Table Of Contents

1. EXECUTIVE SUMMARY

This Drill and Blast Near Rock Art Management Protocol (DBMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Confirmed Cultural Heritage Management Plan (PCF-PD-EN-CHMP), Heritage Management Sub-Plan (0000-ZA-E-09736) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The DBMP describes the Scope of Work, addresses all requirements related to management of drilling and blasting activities that occur in close proximity to Murujuga Rock Art (petroglyphs) at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to cultural heritage objectives for the Project.

The Murujuga Rock Art is highly significant to the Aboriginal people and the protection of the Rock Art is of highest priority to the Project. The Confirmed Cultural Heritage Management Plan provides further details on the importance and context of the Rock Art to the Aboriginal people, local communities, the nation and the world.

The DBSMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This DBMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Cultural Heritage Management Plan, Heritage Management Subn-Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas

	are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DBMP	Drill and Blast Near Rock Art Management Protocol
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DE	Development Envelope
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*

EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-CHMP	Confirmed Cultural Heritage Management Plan
000-ZA-E-09736	Heritage Management Sub-Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Drill and Blast Near Rock Art Management Protocol (DBMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and aligns with the following Confirmed Management Plans:

- Cultural Heritage Management Plan (PCF-PD-EN-CHMP)

The DBMP describes the Scope of Work, addresses all requirements related to management of drilling and blasting activities that occur in close proximity to Murujuga Rock Art (petroglyphs) at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to cultural heritage objectives for the Project.

The Murujuga Rock Art is highly significant to the Aboriginal people and the protection of the Rock Art is of highest priority to the Project. The Confirmed Cultural Heritage Management Plan provides further details on the importance and context of the Rock Art to the Aboriginal people, local communities, the nation and the world.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from drilling and blasting activities that occur in close proximity to petroglyphs at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The DBMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This DBMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Cultural Heritage Management Plan, Heritage Management Sub-Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. This protocol may contain specific references to the Confirmed Cultural Heritage Management Plan, where the reader may have to review the Confirmed Cultural Heritage Management Plan to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting hazardous material management, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed Cultural Heritage Management Plan for further details).

This protocol will be reviewed and amended any time Confirmed Cultural Heritage Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA has identified Social Surroundings as a Key Environmental Factor. The EPA Objective for Social Surroundings is:

- To protect social surroundings from significant harm.

The EPA require the OWNER to meet the following social surrounding Outcomes & Objectives for the Project as stated within the Ministerial Statement 1180:

- Condition 9-1 (1) Avoid, where possible, and otherwise minimise direct and indirect impacts to social, cultural, heritage, and archaeological values within and surrounding the development envelope.

- Condition 9-1 (4) Avoid, where possible, and otherwise minimise direct and indirect impacts to visual and amenity impacts to social and cultural places and activities

This DBMP will communicate the relevant aspects that are within the Confirmed Cultural Heritage Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the Confirmed Cultural Heritage Management Plan relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from hydrocarbons and hazardous substances emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Perdaman Solid & Liquid Waste Management Plan.

Table 6-1 Drill and Blast Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Drill and blast personnel to participate in the cultural heritage induction prior to commencement of drilling and blasting activities.	CF
The Drill and Blast SUBCONTRACTOR will submit a blast plan management plan to the CONTRACTOR at least 14 days in advance of proposed Works. The plan will cover issues such as: • Timeframes of drilling program (start and completion); • Locations for drill and blast operations in relation (distance from) to known heritage sites and known rock art locations; • Any access tracks, entry / egress points required; • Reference to a GDP which has been lodged / approved for the Works; • Drill and blast methods / techniques being used and a provision for recording of vibration levels (if located within 100 m of an Aboriginal heritage site); • Suitable protective measures to be used for any rock art or Aboriginal heritage sites located in the vicinity of the drill / blast zone. • Any other relevant information the SCJV or Perdaman require to ensure compliance with approvals and adherence to commitments to MAC. • Plan to also include copy of shotfirer licence	CF
Drill and blast activities shall commence in areas where there is no rock art, to allow experience and knowledge to be gained of the geology and suitable methods of protection.	CF

Maps will be made available to the Drill and Blast Supervisor which detail rock art and other Aboriginal heritage sitesand the potential area of impact.	CF
Intrusion of blast material, or any alteration of a rock art or Aboriginal heritage site, constitutes an incident, and will be investigatedaccordingly.	CF
Ensure Aboriginal heritage sites are not damaged, disturbed, altered, modified or impacted. This includes theentire site area, and is not restricted to cultural materials within the site. Any breach of this procedure must immediately be reported as an incident by the Drill and Blast Supervisor or the Indigenous Relations representative.	CF
No entry into Aboriginal heritage sites without authorisation	CF
No photography of Aboriginal heritage sites is permitted without consent.	CF
A GDP is required for blasting and drilling activities.	CF
The GDP is to include the following provisions and detailed procedures for the protection of heritage sites: • Details for a pre-ground disturbance inspection of the required boundary demarcations • Undertake ground disturbing works in consultation with MAC, Circle of Elders and Traditional Custodians, and facilitate the observation of those activities by those persons • Two MAC representatives from each of the following groups are to be invited by notice in writing within 30 days of GDAs; Ngarluma, Yinjibarndi, Mardudhunera, Wong-Goo-Tt-Oo and Yaburara. • Where a Project lease from Development WA (Lease) overlies or abuts the NHP, a 5m buffer (no go zone) must be established around the NHP heritage site location (as recorded in the IHS Heritage Report, Table 5) that is located within 50m of the ground disturbing activity throughout the construction phase. • Where ground disturbance are conducted either within the NHP or within 50m where the Lease abuts the NHP, post blasting surveys must be undertaken to confirm no disturbance occurred to any heritage sites within the NHP.	CF

• Where the Lease overlies or abuts the NHP, clearing boundaries in proximity (<50m separation) to heritage sites within the NHP must be demarcated and hard barricaded (bunting) prior to any disturbance. • Where a Lease overlies or abuts the NHP, MAC rangers must be provided the opportunity to be present prior to and during blasting conducted either within the NHP or where NHP heritage sites that is located within 50m of the ground disturbing activity. • Where ground disturbance are conducted either within the NHP or within 50m where the Lease abuts the NHP, ground preparation works in proximity to the NHP must be managed using water carts (to decrease dust) and approximately 1 meter of overburden (to prevent flying rock). • If the MAC ranger considers that the work is being conducted in a manner that creates a potential risk to a NHP site, the blasting must stop, and the ranger must advise the MAC CEO of this potential risk. • The GDP must include a provision whereby the ”stop work notification” for the immediate area initiates a risk review and task redesign to achieve an ALARP outcome before the ground disturbing activity can be restarted. • The GDP required review must be conducted by the Liaison Committee in accordance with Liaison Committee’s operational requirements.	
Low percussion explosives will be utilised by a licensed shotfirer to minimise fly rock and ground vibration.	CF

APPENDIX I – ASBESTOS & FIBROUS MATERIALS MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN APPENDIX I ASBESTOS & FIBROUS MATERIALS MANAGEMENT PROTOCOL

1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER
Rev.	**Date**	**Description**	**Prepared**	**Checked**	**Approved**

Revision control sheet

Revision No	Date	Revision Details
1	**14/9/2023**	**REISSUED FOR USE**
0	26/4/2023	ISSUED FOR USE
B	21/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW

Table Of Contents

1. EXECUTIVE SUMMARY

This Asbestos & Fibrous Materials Management Protocol (AFMMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The AFMMP describes the Scope of Work, addresses all requirements related to management of asbestos and fibrous materials by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Asbestos & Fibrous Materials Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The AFMMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This HHSMP must be read and implemented in conjunction with the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD

DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.

PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
AFMMP	Asbestos & Fibrous Material Management Protocol
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited

OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following is the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Asbestos & Fibrous Material Management Protocol (AFMMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP).

The AFMMP describes the Scope of Work, addresses all requirements related to management of asbestos and fibrous material by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

Asbestos exposure can be a health issue for the surrounding community and personnel.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from asbestos and fibrous materials at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Asbestos & Fibrous Material Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The AFMMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This AFMMP must be read and implemented in conjunction with the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting asbestos and fibrous material management, and if there are changes

to management or monitoring required where management actions and targets are not achieved.

This protocol will be reviewed and amended any time, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain

management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified potential impacts to Key Environmental Factors from solid and liquid waste generated during construction and operation stages of the Project. The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment to achieve objectives and comply with legislation relating to protection of environmental values.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from hydrocarbons and hazardous substances emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols.

Table 6-1 Asbestos & Fibrous Materials Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
All Project Personnel will be made aware of areas that have the potential to contain fibrous minerals, and in particular asbestiform minerals.	CF, Ca, Co, P
All Project Personnel responsible for construction and excavation Works will be trained in the identification of fibrous minerals,appropriate management measures and use of personal protective equipment.	CF, Ca, Co, P
A risk assessment will be undertaken prior to commencing any ground disturbing works on site to determine likelihood of occurrence based on known geological information for the area and the consequence of exposure.	CF, Ca, Co, P
Undertake a site inspection to determine potential for fibrous minerals to occur within areas ranked as medium risk or higher.	CF, Ca, Co, P
If disturbance of fibrous minerals is deemed moderate to high risk and excavation is not recommended, then in situ management or avoidance should be implemented. In situ management primarily involves the isolation of the contaminated area with barriers and covers (e.g., clean fill material) so that it cannot be readily disturbed and therefore will not generate airborne fibres.	CF, Ca, Co, P
If in situ management is not appropriate, then the fibrous minerals must be excavated, stockpiled and reburied in situ, or excavated and disposed of at an appropriate licensed landfill facility.	CF, Ca, Co, P
Implement dust management measures, such as the application of water or synthetic stabilisers, prior to any excavation to minimise dust emissions and the risk of airborne fibres.	CF, Ca, Co, P
Isolate fibrous minerals from topsoil and subsoil during excavation and stockpile with covers or synthetic seals.	CF, Ca, Co, P

Prevent the spread of contamination by using wash down facilities where required.	CF, Ca, Co, P
If Asbestos is discovered onsite, CONTRACTOR shall develop a digital asbestos register for the Project which will include the location, type of asbestos and date asbestos was discovered.	CF, Ca, Co, P
The register will be updated with new asbestos finds and following remediation has been completed onsite.	CF, Ca, Co, P
On discovery of unexpected pre-existing asbestos contamination, work will immediately stop, management notified, and specialist advice will be sought on a course of action.	CF, Ca, Co, P
Discovery of asbestos will result in the area being quarantined until further inspection.	CF, Ca, Co, P
Potentially impacted soil is to be disposed off-site, it shall be classified in accordance with the Landfill Waste Classification and Waste Definitions, 1996 (as amended) and disposed of to a suitably licensed landfill.	CF, Ca, Co, P
In dry and windy conditions any asbestos stockpile is to be lightly wetted and covered with plastic sheet whilst awaiting disposal.	CF, Ca, Co, P
Asbestos materials contained in stockpiles will be kept separate, clearly sign posted with location excavated, date and type of contamination. The soil will be included within the MTS.	CF, Ca, Co, P
Asbestos waste to be managed and removed by appropriately qualified personnel in accordance with DWER and Department of Health guidelines (2009).	CF, Ca, Co, P
Asbestos waste must be disposed of at a licensed facility, documentary evidence (weighbridge dockets) of correct disposal is to be provided to the HSSE Manager or delegate and maintained	CF, Ca, Co, P
Upon the discovery of any Asbestos contamination CONTRACTOR will follow the guidelines listed in the Safe Work Australia publication – “How to Safely Remove Asbestos”; and; “How to Manage and Control Asbestos in the Workplace”.	CF, Ca, Co, P

CONTRACTOR will also notify the appropriate Authority (The Department of Health) immediately upon encountering any Asbestos.	CF, Ca, Co, P

APPENDIX J – AIR QUALITY MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX J
AIR QUALITY MANAGEMENT PROTOCOL

2	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER
Rev.	**Date**	**Description**	**Prepared**	**Checked**	**Approved**

Revision control sheet

Revision No	Date	Revision Details
2	**14/9/2023**	**REISSUED FOR USE**
1	28/6/2023	Updated to include dust monitoring
0	26/4/2023	ISSUED FOR USE
B	21/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW

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1. EXECUTIVE SUMMARY

This Air Quality Management Protocol (AQMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The AQMP describes the Scope of Work, addresses all requirements related to management of dust by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Air Quality Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The AQMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This AQMP must be read and implemented in conjunction with the most recent and approved version of the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas

	are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SENSITIVE RECEPTOR	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
AQMP	Air Quality Management Protocol
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System

EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Air Quality Management Protocol (AQSMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP).

The AQMP describes the Scope of Work, addresses all requirements related to management of dust by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from dust at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Air Quality Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from hydrocarbons and hazardous substances for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The AQMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This AQMP must be read and implemented in conjunction with the most recent and approved version of the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting dust management, and if there are changes to management or monitoring required where management actions and targets are not achieved.

This protocol will be reviewed and amended any time, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further

details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified potential impacts to Key Environmental Factors from solid and liquid waste generated during construction and operation stages of the Project. The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment to achieve objectives and comply with legislation relating to protection of environmental values.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from hydrocarbons and hazardous substances emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Perdaman Solid & Liquid Waste Management Plan.

Table 6-1 Air Quality Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
A Dust Management Procedure will be developed for approval by the CONTRACTOR Environment & Heritage Manager prior to commencing Works likely to generate dust.	CF, Ca, Co, P
Dust suppression techniques will be used on unsealed roads and access tracks, cleared areas and at locations of high dust risk. All water supplied for dust suppression is taken from the potable water stored in above ground 60,000L tanks where there is no potential for contamination.	CF, Ca, Co, P
Dust suppression sprays installed at material transfer locations on the jaw crusher, cone crushers, triple deck screen and product stackers.	CF, Ca, Co, P
Water systems to be used to minimise dust generation at material transfer points, crusher and at the materials stockpiles.	CF, Ca, Co, P
Chemical dust suppressants or water trucks to be operated on roads and open areas to ensure dust generation is kept to a minimum	CF, Ca, Co, P
Stockpiles must not exceed 5 m in height above ground level.	CF, Ca, Co, P
Dust suppression measures will be implemented where dust is visible, except during topsoil stripping.	CF, Ca, Co, P
Saline water (> 5000 mg/L TDS) will not be used for dust suppression unless approved by the CONTRACTOR Environment and Heritage Manager, or delegate.	CF, Ca, Co, P
Where the use of saline water for dust suppression (> 5000 mg/L TDS) is approved, dribble bars will be used to control overspray onto adjacent vegetation.	CF, Ca, Co, P

A log of water used for dust suppression will be maintained and reported in the Monthly Environmental Report. Information reported will include, where relevant, the source of the water, date and time, volume removed (including meter reading at start and finish), location where water was used.	CF, Ca, Co, P
Vegetation clearing and exposed surfaces will be kept to a minimum wherever practicable.	CF, Ca, Co, P
Vehicle speeds on access tracks and around work sites will be reduced where necessary to minimise dust emissions.	CF, Ca, Co, P
Vehicles will remain within designated roads and park only in allocated areas.	CF, Ca, Co, P
Dust suppressant additives or methods that reduce overall water consumption should be used wherever practicable. This will include restricting traffic within cleared areas until access is needed.	CF, Ca, Co, P
Vegetation clearing, grubbing and earthworks during high winds (>40 km/hr) should be avoided. Where these works are required to be conducted during high winds, additional management measures must be implemented to minimise and control dust emissions.	CF, Ca, Co, P
Four dust monitors are to be installed, comprised laser-based Optical Particle Counter for the monitoring and recording of PM2.5 and PM10 during construction activities. The inclusion of cellular technology incorporated into the dust monitors will empower the CONTRACTOR to actively monitor dust emissions near-real time. In addition, six dust deposition gauges will also be procured and deployed outside of the construction footprint adjacent to sensitive receptors (including petroglyphs) to monitor dust loading. One dust monitor shall be installed outside of the construction footprint and upwind of prevailing winds to monitor background dust concentrations while the remaining three monitors will be placed around the crushing and screening operations.	CF, Ca, Co, P
Air emissions during operation of process plant and equipment will be within the Project's approved thresholds. Where monitoring results indicate higher emissions than those stated in the Project's approval conditions, corrective actions must be implemented as soon as practicable to reduce emissions below the permitted level.	CF, Ca, Co, P

Dust emissions from the conveyor, product storage sheds and ship loading operations will be monitored and minimised throughout the life of the Project. Should emissions exceed the Project's approval conditions, corrective actions must be implemented, as soon as practicable, to reduce emissions to the permitted level.	CF, Ca, Co, P
Continually evaluate emission control technology and trends as they become commercially available to further limit air emissions.	CF, Ca, Co, P
Where ground disturbance, including clearing activities are conducted either within the NHP or within 50m where the Lease abuts the NHP, ground preparation works in proximity to the NHP must be managed using water carts to decrease dust and approximately 1 meter of overburden will be used during blasting to prevent flying rock.	CF, Ca, Co, P
Dust mitigation (i.e., water carts) will be utilised where activities are likely to cause dust pollution and nuisances to community visitors, tourists, traditional owners and MAC etc who are visiting culturally significant sites (i.e., during conveyor works or works adjacent to heritage sites within the Development Envelope.)	CF, Ca, Co, P
Employ various methods onsite to reduce dust onsite, including dust suppression with water or stabilisers (i.e., dustex).	CF, Ca, Co, P
Water tankers to be readily available to dampen exposed surfaces within construction and laydown areas, particularly ground disturbing activities.	CF, Ca, Co, P
Any work activities prone to creating dust i.e., excavations or clearing, will be staged and conducted during low wind periods.	CF, Ca, Co, P
Erosion and sediment control methods will be in place onsite to prevent soil from being deposited offsite and causing a dust nuisance later.	CF, Ca, Co, P
Loads being transported to site, from site and within the site shall be damped down or covered where wind-blown material can cause nuisance.	CF, Ca, Co, P
Stockpiles will be covered or hydro mulched and inspected regularly for integrity and intactness.	CF, Ca, Co, P
Disturbed areas on site will be stabilised as soon as practicable.	CF, Ca, Co, P

Ensure vehicles, plant and equipment are well maintained to reduce exhaust emissions to surrounding environment.	CF, Ca, Co, P
Dust suppressant additives or methods that reduce overall water consumption should be used wherever practicable. This shall include restricting traffic within cleared areas until access is needed.	CF, Ca, Co, P
Dust emissions during construction should not adversely impact the visual amenity for those visiting at culturally significant sites such as Hearson Cove, Yatha, Deep Gorge and Fish Thalu site.	CF, Ca, Co, P

APPENDIX K – NOISE MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX K
NOISE MANAGEMENT PROTOCOL

1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER
Rev.	**Date**	**Description**	**Prepared**	**Checked**	**Approved**

Revision control sheet

1	**14/9/2023**	**REISSUED FOR USE**
0	26/4/2023	ISSUED FOR USE
B	21/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW
Revision No	**Date**	**Revision Details**

Table Of Contents

1. EXECUTIVE SUMMARY

This Noise Management Protocol (NMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Confirmed Cultural Heritage Management Plan (PCF-PD-EN-CHMP), Confirmed Threatened Species Management Plan (PCF-PD-EN-TSMP), Confirmed Fauna Management Plan (PCF-PD-EN-FaMP), and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The NMP describes the Scope of Work, addresses all requirements related to management of noise by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Noise Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from noise for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The NMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This NMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE

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CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
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EMS	Environmental Management System
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EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit

MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NMP	Noise Management Protocol
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

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Document No.	Document Title
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PCF-PD-EN-TSMP	Confirmed Threatened Species Management Plan
PCF-PD-EN-FaMP	Confirmed Fauna Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Noise Management Protocol (HHSMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and aligns with the following Confirmed Management Plans:

- Confirmed Cultural Heritage Management Plan
- Confirmed Threatened Species Management Plan
- Confirmed Fauna Management Plan

The NMP describes the Scope of Work, addresses all requirements related to management of noise by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The potential impacts by noise to aboriginal heritage sites and native fauna species during construction activities have been identified during the risk assessments for the construction phase and include the following:

- Noise pollution to local community, visitors, MAC, traditional owners and tourists visiting culturally significant places and sites (such as Hearson Cove, Yatha Site, Fish Thalu Site, Rock Art, Deep Gorge).
- Excessive vibration and noise during crushing and screening or other activities (I.e., movement of plant and vehicles, use of machinery) impacting fauna species and amenity at culturally significant sites.
- Noise and vibration can act as a general stressor to fauna species and disturb ecosystem balance.
- Vibrations could disturb suitable burrowing/nesting sites of Short-Range Endemic (SRE) species.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from noise at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Noise Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from noise for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The NMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This NMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. This protocol contains specific references to the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan, where the reader may have to review these management plans to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting hazardous material management, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed management plans for further details).

This protocol will be reviewed and amended any time the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and

toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified potential impacts to Key Environmental Factors from noise generated during construction and operation stages of the Project. The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the impact from noise to achieve objectives and comply with legislation relating to protection of environmental values.

This NMP will communicate the relevant aspects that are within the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the Confirmed management plans relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from noise emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Confirmed Cultural Heritage Management Plan, Confirmed Threatened Species Management Plan, Confirmed Fauna Management Plan.

Table 6-1 Noise Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
A Noise and Vibration Management Procedure shall be developed by CONTRACTOR and implemented on site.	CF, Ca, Co, P
A Noise Management Plan shall be developed for submission and approval by City of Karratha where works are carried out outside of normal working hours.	
Operating noise, vibration and potential mitigation measures, such as sound absorption devices, shall be specified when selecting equipment for the Project.	CF, Ca, Co, P
Equipment shall be fitted with appropriate noise reduction devices.	CF, Ca, Co, P
Regularly inspect, maintain and replace mobile equipment.	
Works within the development envelope shall only occur in daylight hours where practicable.	
Noise complaints investigated to determine source and implement further noise mitigation measures. Complaints to be responded to within 24 hours.	
For machinery lacking silencing devices, ensure plant, machinery and equipment are operated as far as practicable from sensitive receptors.	
Ensure compliance to speed limits.	
Personnel shall be educated on their surrounding sensitive receptors and warned against the use of loud offensive language that may disrupt or offend Project visitors, cultural visitors and personnel.	

Noise level targets may be developed and be set for project and noise levels monitored during noisy activities, i.e., clearing and excavating or following a complaint.	
Using non-vibrating or lower vibrating construction methodologies and/or operate plant as far as practicable from sensitive receptors.	
Provide temporary noise barriers where practicable e.g., impact hammers / rock breakers shrouded around the hammer mechanism or mobile plant.	
Broadband reversing alarms shall be installed on mobile plant.	
Machines will be operated at low speed where practical and switched off when not in use.	
Machines found to produce excessive noise compared to industry best practice will be stood down until repairs or modification can be made.	

APPENDIX L – ACID SULFATE SOILS MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX L
ACID SULFATE SOILS MANAGEMENT PROTOCOL

2	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER
Rev.	**Date**	**Description**	**Prepared**	**Checked**	**Approved**

Revision control sheet

Revision No	Date	Revision Details
2	**14/9/2023**	**REISSUED FOR USE**
1	28/06/2023	ISSUED FOR USE
1	4/7/2023	Updated to reflect Acid Sulfate Soils Management Plan
0	26/4/2023	ISSUED FOR USE

Table Of Contents

1. EXECUTIVE SUMMARY

This Acid Sulfate Soils Management Protocol (ASSM Protocol) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), the Acid Sulfate Soils Management Plan (ASSMP) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The ASSM Protocol describes the Scope of Work, addresses all requirements related to management of acid sulfate soils at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Acid Sulfate Soils Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from acid sulfate soils for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The ASSM Protocol is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This ASSM Protocol must be read and implemented in conjunction with the most recent and approved version of the CONTRACTOR CEMP it is appended to, and the ASSMP. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.

CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.

PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SENSITIVE RECEPTOR	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
ASSM Protocol	Acid Sulfate Soils Management Protocol
ASSMP	Acid Sulfate Soils Management Plan
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction

ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following is the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-ASSDMP	Acid Sulfate Soils Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.1 Scope & Context

This Acid Sulfate Soils Management Protocol (ASSM Protocol) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and align with the following Perdaman Management Plan:

- Acid Sulfate Soil Management Plan (PCF-PD-EN-ASSDMP)

The ASSM Protocol describes the Scope of Work, addresses all requirements related to management of acid sulfate soils at the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

In addition, dewatering may be required, therefore in accordance with condition 6-3 of MS 1180, CONTRACTOR shall develop a Hydrogeological Management Plan as required.

Within the Project area, the main aquifer bodies consist of the Gidley Granophyre bedrock aquifer, which is overlain by supratidal deposits. These are both considered to be unconfined in nature and in hydraulic connection with groundwater discharge within the intertidal zone. Previous studies have confirmed groundwater quality to be hypersaline with TDS concentrations greater than seawater (40,000-50,000 mg/L) which is thought typical of supratidal environment that are subject to greater evaporation rates (HLA Envirosciences, 1999).

Groundwater levels are particularly shallow within the supratidal areas and are expressed as surface waters during periods of high rainfall. Groundwater levels are affected by tidal variation in this area and this is very likely to affect groundwater flow direction with groundwater flow likely to be reversed during periods of high tide. Sampling carried out by Coffey between December 2021 to March 2022 found static water levels ranging from 0.41 mBTOC to 21.61 mBTOC. Based on the gauging information presented by Coffey (2022), groundwater flow is toward the southwest in the Site C area and the northwest in the Site F area with eventual discharge shown to be into the Supratidal area with eventual discharge to King Bay to the west. The hydraulic gradient is reasonably gradual with water levels very close to surface within the supratidal areas and with surface waters in this area likely to be a surface expression of groundwater during high rainfall events.

There is a High to Moderate risk of ASS within the supratidal zone of Site C and causeway. A moderate to low-risk ASS area is also observed in the northwest corner of Site C.

4.2 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from acid sulfate soils at the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Acid Sulfate Soils Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from acid sulfate soils for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The ASSM Protocol is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This ASSMP must be read and implemented in conjunction with the most recent and approved version of the Acid Sulfate Soil Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. Where this protocol contains specific references to the Acid Sulfate Soil Management Plan, the reader may have to review the management plan to obtain the correct context of a requirement.

4.3 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting acid sulfate soils, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Acid Sulfate Soil Management Plan for further details).

This protocol will be reviewed and amended any time the Acid Sulfate Soil Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.4 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the

work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified potential impacts to Key Environmental Factors from acid sulfate soils during construction of the Project. The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the impact from acid sulfate soils to achieve objectives and comply with legislation relating to protection of environmental values.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from acid sulfate soils. These mitigation measures have been adopted from the OWNER PEMP environmental protocols and the Acid Sulfate Soils Management Plan.

Table 6-1 Acid Sulfate Soil Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Where practicable, disturbance of ASS should be minimised or avoided.	CF, Ca
Where ASS is intercepted, CONTRACTOR shall implement the Acid Sulfate Soils Management Plan, and if dewatering is required, implement the Hydrogeological Management Plan.	CF, Ca
Excavated materials that contain potentially acid-forming materials will not be reused for construction purposes unless approved prior to site mobilisation by the Environment and Heritage Manager.	C
ASS material treated and reused on site must have a field soil pH of +/-0.5 when compared to field soil pH of naturally occurring background levels. Other potential contaminants, including but not limited to heavy metals, must be at a concentration no greater than 10% above the maximum background levels established for the site.	C
All soils not suitable for reuse on site will be transported in accordance with the Environmental Protection (Controlled Waste) Regulations 2004 and disposed of at an appropriately licensed facility.	C
Obtain licenses under the Rights in Water and Irrigation Act (1914) required for dewatering activities, as applicable.	CF, Ca
If disturbance of >1,000 tonnes of ASS occur at the causeway or Site C then soil should be treated at the reported maximum Net Acidity of 0.34 %S. Based on the Net Acidity, a safety factor of 1.5 and an ENV of 91.5% (Aglime of Australia Product information Sheet, 2022) a calculated liming rate of 19.95 kg/tonne should be adopted for neutralisation of ASS.	C
If disturbance of <1,000 tonnes of ASS occur with stockpiling at the causeway or Site C, then soil can be stockpiled for up to 70 hours before soil has to be neutralised. If soil is to be stockpiled longer than 70 hours, then a risk	C

assessment will be required and additional management measures such as leachate capture and periodic application of lime to neutralise acidity.	
For all stockpiling, a guard layer of crushed limestone should be used to protect underlying soils. The guard layer should also include a bund around the guard layer to contain any surface runoff in the event of rainfall.	C
Untreated soil will be monitored daily for visual signs of acid generation (e.g. – formation of the buttery, yellow-coloured mineral jarosite or other iron oxides). Representative soil samples will be collected daily from the surface of the stockpile (minimum two samples per stockpile face) and tested for pH_F.	C
Treated soil will be sampled at a rate in accordance with the WA DWER's waste classification guidelines (DWER 2019). Samples will be tested for pH_F and pH_{FOX} for clearance prior to reuse at the site. 25% of field samples will be sent to the laboratory for confirmatory analysis by the chromium reducible sulfur suite (SCr) method (with the inclusion of the total potential acidity measurement (TPA) from the SPOCAS suite)	C
If present, leachate run-off from the stockpiles will be field tested for pH, EC, temperature and total acidity prior to determine an appropriate dosing rate if necessary.	C
ASS management pad to be located away from sensitive receptors.	C
ASS management pad to be sized to accommodate anticipated throughput and holding times.	C
ASS management pad to consist of compacted alkaline material (eg. Limestone) with minimum thickness of 300 mm.	C
Training to be provided on visual identification of ASS.	C
NATA accredited laboratory to be used for SPOCAS/SCr analysis.	C

Following quality assurance and quality control measures should be implemented: Collection of duplicate soil samples in the field at a ratio of one duplicate for every 20 samples collected from the site. “Blind” labelling of the duplicates to ensure that the laboratory is not aware which samples are duplicated.	C
Develop a staging plan for the management of ASS as required.	C
Carry out in-situ management of excavations by coating excavation face with granular neutralising agent/solution, where appropriate.	C
Neutralise ASS in treatment pad by blending ASS with neutralising material. Record treatment rate in material tracking log.	C
Collect verification samples to confirm treatment. Collect composite samples and quality control samples.	C
Monitor ASS stockpiles for oxidation, erosion and leachate.	C
Design dewatering program that minimises the radius of influence, if dewatering is required.	C
Plan excavations likely to encounter groundwater for drier periods.	C

6.2 Environmental Reporting

Perdaman is responsible for the preparation of overall Project related environmental reports including compiling data from monitoring programs.

An ASS closure report will be prepared once all associated ground excavations for the site works has been completed. The closure reports will detail the following components:

- Scope of work.
- Site identification and details of re-development.
- Existing environment and setting.
- Management measures undertaken at the site.
- Total volumes and extent of disturbed soils.
- The results of all monitoring programs (including validation results).
- A discussion of the effectiveness of management strategies employed at the site.
- A discussion of any potential risks to human health or the environment.
- Proposed future monitoring and/or reporting programs.
- Proposed remediation measures if needed.

APPENDIX M – CONCRETE BATCHING MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX M
CONCRETE BATCHING MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

1	**14/9/2023**	**REISSUED FOR USE**
0	26/4/2023	ISSUED FOR USE
B	21/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW
Revision No	**Date**	**Revision Details**

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1. EXECUTIVE SUMMARY

This Concrete Batching Management Protocol (CBMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), the Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998 (the Regulations), and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The CBMP describes the Scope of Work, addresses all requirements related to management of concrete batching by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Concrete Batching Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from concrete batching for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The CBMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This CBMP must be read and implemented in conjunction with the most recent and approved version of the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE

DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).

PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SENSITIVE RECEPTOR	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CBMP	Concrete Batching Management Protocol
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities

GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Concrete Batching Management Protocol (CBMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and aligns with the Environmental Protection (Concrete Batching and Cement Products Manufacturing) Regulations 1998 (the Regulations).

The CBMP describes the Scope of Work, addresses all requirements related to management of concrete batching by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

Concrete batching is required for the construction phase of the Project and will not form part of the permanent operating infrastructure. It is expected to be operational for approximately 20 months.

Concrete batching will be carried out at a mobile concrete batching plant with a production capacity of up to 70 m^3/hr, with a maximum production capacity (based on infrastructure operating 24 hours a day, 7 days a week) of 79,000 m^3.

The infrastructure to support the batching plant will include batch control room, office, crib, meeting room and ablution block. Stockpiles and laydowns include 4 concrete aggregate and sand storage bays being 10 m by 10 m with 2 m high walls on two sides. The storage bays will be fitted with shade sails and a water sprinkler system for dust control.

A concrete loading pad will be designed to drain to a concrete slurry pit with a minimum volume of 12 m^3. The concrete loading pad will include:

- Waste concrete drying bins
- Agitator truck loading bays
- Agitator truck washout sump
- Slump stand.

Cement silos will consist of a 70-tonne vertical cement silo, 2 70-tonne horizontal cement silos, each fitted with:

- a relief valve which prevents overfilling
- a level indicator with an audible high level alarm which is triggered if cement reaches 0.6 m below the inlet to the silo's air cleaning system
- a test circuit to confirm the level indicator and alarm are operating correctly
- a reverse pulse air cleaning system designed to reduce dust emissions to less than 50 mg/m^3 of particulate matter
- ducting discharging air from the cement silo air cleaning system to within one metre of the ground.

Hoppers will include a 3.5-tonne cement hopper, and 2 8m3 aggregate hopper with 16-tonne capacity.

Water storage tanks will consist of x 50,000 L water tanks, with approximately 800 L per cubic metre of concrete produced (including water for dust suppression at the stockpiles), ensuring there is no potential for contamination. Water supply will be from the MUBRL.

The concrete batching plant will include 2 1000 L individually bunded admixture IBC's (natural or manufactured chemicals or additives added during concrete mixing to enhance specific properties of the fresh or hardened concrete, such as workability, durability, or early and final strength).

Two 250kVa self-bunded diesel generators will be installed for the batch plant with a fuel consumption of approximately 15 L per hour. A single 50kVa diesel generator will be installed for the administration facilities including the office, crib, meeting room and ablution block, with a fuel consumption of approximately 8 L per hour. Diesel will be stored in a 4,000 L self-bunded unit.

Concrete is to be manufacturing at the batching plant for use at the Project only.

Concrete batching has the potential to impact the environment in the following ways:

- Concrete waste if not disposed properly can pollute the surrounding soils changing the natural chemistry.
- Concrete washout if not contained can flow into nearby surface waters, changing the water chemistry and leaching into the groundwater.
- Following heavy rain events concrete washout may overflow from containment areas into nearby surface water degrading the water quality.
- Concrete waste and washout may drain to nearby flora and vegetation, impacting vegetation health and native fauna habitats.
- Since the surface water is an intertidal zone that links to mangroves and the marine environment, if not managed properly, washout and concrete waste could cause adverse impacts to these sensitive receptors.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that impacts from concrete batching at the Project is minimised and ensure compliance with the Regulations and Contract.

The Concrete Batching Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise environmental impacts from concrete batching for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The CBMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a "live" Protocol and as such may be reviewed periodically and revised as needed.

This CBMP must be read and implemented in conjunction with the most recent and approved version of the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting concrete batching, and if there are changes to management or monitoring required where management actions and targets are not achieved.

This protocol will be reviewed and amended any time to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the impact from the Project to achieve objectives and comply with legislation relating to protection of environmental values.

This CBMP will communicate the relevant aspects that are within the Regulations.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from concrete batching. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Regulations.

Table 6-1 Concrete Batching Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Batching plant shall incorporate dust controls in the design including sprinklers and water sprays.	F
A water cart shall be available for dust suppression on access roads.	F
The plant shall be established with drainage to a wastewater collection sump to allow for washdown.	F
Vehicles shall be hosed as required to remove slurry and dust, with wash water directed to the wastewater collection sump.	F
The plant shall be monitored, and loose materials will be removed by being swept, hosed or otherwise cleared to prevent material adhering to vehicles and minimise dust.	F
Aggregate and concrete shall be stored in two-sided material storage bays with sprinkler systems installed which will be used to minimise dust emissions during unloading and storage of the materials.	F
Raw materials shall be delivered in a damp state, or dampened prior to unloading, to minimise dust during unloading.	F
Operators shall conduct inspections to ensure stored aggregate does not exceed the height of the storage bays. Where fixed material storage infrastructure is not available / sufficient for project needs, ground stockpiles will be managed to minimise airborne dust by either being covered or kept damp through watering.	F

Unloading of materials shall be monitored and in the event that visible dust escapes the site, unloading shall be stopped and additional measures put in place to prevent further dust generation, such as watering down of materials (where possible) or waiting for more favourable conditions.	F
Cement shall be delivered in sealed tankers and transferred into storage silos pneumatically. The cement storage silos shall be fitted with an air cleaning system and either a level indicator or a relief valve. Weekly inspections of the plant, including dust controls will be conducted and blockages, leaks, dust build up or other damage rectified immediately where identified.	F
All ports/hatches/openings shall be sealed prior to unloading and unloading shall cease if visible dust escapes the silos.	F
The cement storage silos shall be installed with a reverse jet pulse filter with ducting within one metre of the ground. The system will reduce dust emissions from the silos to less than 50 milligrams of particulate matter per cubic metre.	F
Air cleaning cartridges will be changed as required or at pre-scheduled maintenance intervals. Sufficient spare cartridges will be readily available on the premises.	F
Cement storage silos shall have a level indicator with an audible alarm sounding if the cement reaches 0.6 m below the inlet to the air cleaning system.	F
Cement storage silos shall have a test circuit which indicates whether the alarm and level indicator are functioning correctly. The test circuit will be activated prior to unloading into the silos. Cement is not unloaded into storage silos where the indicator or alarm are not working correctly.	F
Cement silos shall be fitted with a relief valve to prevent overfilling and ensure any excess cement is directed to a weigh hopper or outlet within one metre of the ground.	F

Raw material shall be maintained in a damp state via sprinklers.	F
Hoppers shall to be designed such that visible dust does not escape.	F
Regular maintenance shall be undertaken to ensure dust controls are in good working order.	F
The concrete loading pads shall be designed to drain toward a wastewater collection sump where particulates will settle out and water will be pumped to a recycled water tank for reuse in batching or agitator washing. If excess wastewater is generated it will be removed from the premises for disposal.	F
The wastewater collection sump water and settled particulate levels shall be monitored by operators. The sump will have a pump to remove water to a recycled water tank. The wastewater collection sump will be sized to contain all water draining to it and allow time for particulate matter to settle.	F
Wastewater shall be pumped to a collection tank for reuse or offsite disposal.	F
Settled particulates shall be dried in drying bins and disposed offsite at an approved waste disposal facility.	F

APPENDIX N – REHABILITATION MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX N
REHABILITATION MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

Revision No	Date	Revision Details
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B	27/9/2022	ISSUED FOR INTERNAL REVEIW
A	24/11/2021	ISSUED FOR INTERNAL REVEIW

Table of Contents

1. EXECUTIVE SUMMARY

This Rehabilitation Management Protocol (RMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Confirmed Flora Management Plan (PCF-PD-EN-FMP) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The RMP describes the Scope of Work, addresses all requirements related to management of rehabilitation by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

The Rehabilitation Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to rehabilitation for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The RMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This RMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Flora Management Plan and the CONTRACTOR CEMP it is appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD

DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.

PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
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VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan

PUP	Perdaman Urea Project
RMP	Rehabilitation Management Protocol

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as guidelines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-FMP	Confirmed Flora Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Rehabilitation Management Protocol (RMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and aligns with the following Conformed Management Plans:

- Confirmed Flora Management Plan (PCF-PD-EN-FMP)

The RMP describes the Scope of Work, addresses all requirements related to management of rehabilitation by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to environmental objectives for the Project.

Rehabilitation is important during construction activities as it reduces the overall stress on the surrounding sensitive receivers. Progressively rehabilitating work areas that are no longer in use during construction can restore the environmental values, ecosystem function, health, flora and vegetation composition, reduce weeds, reduce pests and provide the necessary habitat for native fauna species.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that rehabilitation during construction is maximised at the Project and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Rehabilitation Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to rehabilitation for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The RMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This RMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Flora Management Plan and the CONTRACTOR CEMP it is

appended to. It aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Management strategies related to the construction team are presented within this protocol. Where this protocol contains specific references to the Confirmed Flora Management Plan, the reader may have to review the management plan to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting rehabilitation, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed Flora Management Plan for further details).

This protocol will be reviewed and amended any time the Confirmed Flora Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The management strategies presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the *Environmental Protection Act 1986* to carry out the implementation of the Project as per the conditions within the Ministerial Statement 1180.

The EPA identified Flora and Vegetation as Key Environmental Factors. The objective for Flora and Vegetation is:

- To protect flora and vegetation so that biological diversity and ecological integrity is maintained.

The Minister for the Environment suggests reasonable and practicable measures should be taken to minimise the impact to flora and vegetation to achieve objectives and comply with legislation relating to protection of environmental values.

This RMP will communicate the relevant aspects that are within the Confirmed Flora Management Plan that relate to the construction works. Where a particular objective, trigger,

threshold, management action, monitoring event or reporting requirement within the Confirmed Flora Management Plan relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Strategies

Management strategies presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts to flora and vegetation. These management strategies have been adopted from the OWNER PEMP environmental protocols, and the Confirmed Flora Management Plan.

Table 6-1 Rehabilitation Management Strategies

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
A Land Rehabilitation Procedure shall be developed prior to commencement of construction activities for implementation. The procedure will include provisions for an inspection and sign-off by the CONTRACTOR Environmental Representative to confirm rehabilitation is adequate.	CF, Ca, Co
Rehabilitated areas will be contoured to fit with the surrounding landscape, encourage infiltration and reduce flows, and reducing erosion potential.	CF, Ca, Co
Progressive rehabilitation will be undertaken at the earliest opportunity using topsoil (up to 100mm thick where available) previously cleared from the same area to provide habitat to suit local native fauna.	CF, Ca, Co
Compacted surfaces not required for operational purposes will be ripped to a depth of approximately 1m along contour lines where ground conditions and hydrology allow.	CF, Ca, Co
Fauna habitat materials (e.g., boulders / hollow logs etc.) are to be stockpiled during clearing and will be placed in rehabilitated areas following the willow ripping of replaced topsoil.	CF, Ca, Co
All rehabilitated areas will be: • Erosion resistant, not form permanent water bodies and minimise ponding of water following rainfall events. • Landscaped to be consistent with surrounding landforms and have a final shape, stability, surface drainage, resistance to erosion and ability to support local native vegetation.	CF, Ca, Co

Access roads not required for operational purposes will be ripped with topsoil spreading as the final stage of rehabilitation.	CF, Ca, Co
Vegetation shall be dragged across ripped areas using an excavator or similar equipment with a long reach to minimise compaction of the ripped topsoil, where possible.	CF, Ca, Co
All temporary infrastructure, waste and materials, including flagging tape and survey pegs associated with construction works will be removed from site at the completion of construction.	CF, Ca, Co
Sumps and other trenching type temporary installations will be backfilled and rehabilitated as soon as practicable.	CF, Ca, Co
Concrete wash out and waste areas will be removed to an approved landfill site.	CF, Ca, Co
Hydrocarbon contaminated soil and other material (e.g., blue metal and aggregate) present within the dedicated work area will be removed and disposed to an appropriate facility.	CF, Ca, Co
Depressed areas will be landscaped and battered to blend in with the surrounding landform. Batter angles will not be steeper than 1V:5H and in all area's slopes must be stable, safe and will not exacerbate erosion risks.	CF, Ca, Co
Rehabilitated areas will be sign posted with "Rehabilitation Area – Do not enter".	CF, Ca, Co
A record will be kept of all rehabilitated areas, including GPS coordinates.	CF, Ca, Co

Rehabilitation of all temporary work areas will involve reinstatement of surface flow patterns through removal of any temporary causeways required for construction, restoration of the pre-existing contours and revegetation.	CF, Ca, Co
Only endemic plant species will be used during revegetation.	CF, Ca, Co
Prior to demobilising from site, all Contractors must complete all open corrective or preventative actions, close all GDPs and provide all required information to Perdaman.	CF, Ca, Co

APPENDIX O – LIGHT MANAGEMENT PROTOCOL

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
APPENDIX O
LIGHT MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	C. MACKENZIE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

Revision No	Date	Revision Details
1	14/9/2023	REISSUED FOR USE
0	26/4/2023	ISSUED FOR USE
B	27/9/2022	ISSUED FOR INTERNAL REVIEW
A	24/11/2021	ISSUED FOR INTERNAL REVIEW

Table of Contents

1. EXECUTIVE SUMMARY

This Light Management Protocol (LMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Confirmed Light Management Plan (PCF-PD-EN-LMP) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The LMP describes the Scope of Work, addresses all requirements related to management of light by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to lighting objectives for the Project.

The Light Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise light emissions for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The LMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This LMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Light Management Plan and the CONTRACTOR CEMP it is appended to. It **does not** replace the Confirmed Light Management Plan, it aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.

NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SENSITIVE RECEPTOR	A receptor that is affected by slight differences or changes in environmental conditions.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage

EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction
ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
LMP	Light Management Protocol
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as a guide lines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-LMP	Confirmed Light Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port

facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Light Management Protocol (LMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and align with the following Perdaman Confirmed Management Plans:

- Confirmed Light Management Plan (PCF-PD-EN-LMP)

This Plan has also been developed to comply with the requirements of the Ministerial Statement (1180) (Condition 5) and the management controls specific to the construction methodology that will be applied by the CONTRACTOR during the construction program.

Potential impacts associated with light emissions during construction have been identified as (not limited to):

- Impacts to the cultural significance and experience associated with the engravings at the Ngajarli (Deep Gorge) and at Hearson Cove.
- Artificial light spill during construction may affect marine turtle behaviour adversely if not man-aged appropriately (i.e., artificial light can impact individuals at different stages of the life cycle, including nesting adult females and hatchlings).

- Artificial light spill impacting seabirds, who may be attracted to the light which can cause; collision, entrapment, stranding, grounding, disorientation, or interference with navigation (being drawn off course from usual migration route) potentially resulting in injury and/or death.
- Influence on the nocturnal foraging behaviour in shorebirds caused by artificial lighting.

CONTRACTOR and its SUBCONTRACTORS shall ensure the requirements of MS 1180 are complied with.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that light emissions from the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Light Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise light emissions for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The LMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This LMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Light Management Plan and the CONTRACTOR CEMP it is appended to. It **does not** replace the Confirmed Light Management Plan, it aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures related to the construction team are presented within this protocol. This protocol contains specific references to the Confirmed Light Management Plan, where the reader may have to review the Confirmed Light Management Plan to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting lighting, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed Light Management Plan for further details).

This protocol will be reviewed and amended any time the Confirmed Light Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the Environmental Protection Act 1986 to carry out the implementation of the Proposal as per the conditions within the Ministerial Statement 1180.

The EPA has identified Social Surrounds, Terrestrial Fauna and Marine Fauna as Key Environmental Factors. The EPA Objective for Social Surrounds is as follows:

- To protect social surroundings from significant harm.

The EPA Objective for Terrestrial fauna is as follows:

- To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.

The EPA Objective for Marine Fauna is as follows:

- To protect marine fauna so that biological diversity and ecological integrity are maintained.

The following Objective for the Project is provided in the Ministerial Statement 1180:

- Condition 10-1 (1) - avoid, where possible, and otherwise use best practice technology and risk-based management actions to minimise nightglow and light

overspill from the proposal so that the environmental values of amenity at sensitive locations, including, but not limited to Hearson Cove and Deep Gorge, are protected.

This LMP will communicate the relevant aspects that are within the Confirmed Light Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the LMP relates to the direct implementation of a control detailed within the Protocol, it will be stated within the Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with the CONTRACTOR construction methodology to minimize impacts from light emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Confirmed Light Management Plan.

Table 6-1 Light Management Protocol Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Ensure that temporary lighting plant shall be oriented away from the water to protect the marine turtles at Dampier Port	P
Ensure that turtle sensitive lighting is to be installed around the wharf area that is in the turtle's low visual sensitivity range (i.e., 580 nanometres or longer), such as amber, yellow or red in colour.	P
Lighting will be kept low, shielded and directional, and away from water where possible to minimise horizon glow.	P
The use of white lights will be avoided.	CF, Ca, Co, P
Light intensity in nearshore areas will be minimised as far as practicable.	CF, Ca, Co, P
Temporary Plant and Equipment lighting will be designed in accordance with AS 4282-1997: Control of Obtrusive Effects of Outdoor Lighting Guidelines and that light shield will be placed on large equipment to minimise light overspill and using minimum wattage lighting in the plant where possible.	CF, Ca, Co, P
Perimeter and internal lighting shall be facing inwards towards the centre of the work area.	CF, Ca, Co, P
Construction lighting will not be aimed upwards.	CF, Ca, Co, P
If lighting is required to be facing to the site exterior, it must focus on the specific work area and controlled using louvres or shields.	CF, Ca, Co, P
Specialist operational lighting that is not providing general lighting to an area will only be active during times when the specific operations are taking place.	CF, Ca, Co, P
Lighting will be organised and operated to minimise excessive illumination.	CF, Ca, Co, P

Where practical and safe to do so, dimming or complete switch off of specific lighting shall occur where the traffic flows or tasks decrease or cease.	CF, Ca, Co, P
Photo-electric cell sensors to be installed on all outdoor lighting.	CF, Ca, Co, P
Ensure lamps maintain light output to Australian Standard and Building Code of Australia maintenance levels.	CF, Ca, Co, P
Energy consumption of Project luminaires to be recorded.	CF, Ca, Co, P
Position luminaries to directly focus on intended target.	CF, Ca, Co, P
Select lighting with beam characteristics applicable to the task.	CF, Ca, Co, P
Decrease luminance to minimum safe operating levels.	CF, Ca, Co, P
Luminary observations to be recorded at sensitive receptors	CF, Ca, Co, P
Clearing within the development envelope will only occur in daylight hours to minimise artificial lighting impacts on terrestrial fauna.	CF, Ca, Co, P
All Project personnel will be informed of the requirements of the Confirmed Light Management Plan and this protocol.	CF, Ca, Co, P

7. LIGHT EMISSIONS MONITORING

Monitoring shall be carried out to assess performance, collect data and evidence of compliance with MS 1180.

Table 7-1 details monitoring of lighting emissions to be carried out during construction.

Table 7-1 Light Emissions Monitoring

Monitoring Aspect	Monitoring Location	Parameters	Brief Methodology	Frequency
Lighting colour / wavelength	Lighting in outdoor public areas (including high mast floodlighting)	• Reduced blue light LED ≤ 2700K Correlated Colour Temperature (CCT) lighting to be used.	• All lights used to illuminate outdoor spaces (not including outdoor walkways) to be inspected.	Weekly
Lighting colour / wavelength	Walkways / Pathways	• 'True amber' emitters (~585nm) / 'phosphor-coated amber' lighting to be used.	• All lights used on walkways / pathways must be a phosphor coated amber or 'true amber' emitter (wavelength to be ~585nm)	Weekly
Lighting colour / wavelength	Streetlights	• LEDs with a CCT ≤ 2300K to be used.	• All streetlights used within the Project area and surrounding roadways.	Weekly
Lighting wavelength and intensity	All Project lighting	• Ensure lamps maintain light output to Australian Standard and Building Code of Australia maintenance levels. • Compliance with this LiMP.	• Subcontractor (lighting engineer / design) to monitor lighting output and orientation to comply with AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting.	Monthly

Lighting use	All illuminated areas not in use.	• Lighting to be OFF when an area is not in use. • All non-essential lighting to be automatically switched off. • Photo-electric cell sensors to be used on all outdoor lighting.	• Identify lighting not required to be continuously lit. • Lighting not required continuously will be motion activated, timer activated or manually (OFF/ON switch) activated.	Weekly
Lighting orientation / overspill	Areas illuminated other than the intended workspace.	Lighting overspill avoided by: • All lighting directed downwards. • All lighting to be mounted as low as possible (while still meeting lighting standards). • Streetlights only used where necessary, and as low as possible. • No unshielded wall mounted bulkhead lighting. • Lighting oriented away from sensitive environmental receivers (if unavoidable, strategically place so that buildings provide shielding). • Shielding of all lights to achieve an upward waste light output ratio (UWLOR) of 0%.	• Monitor for light overspill into areas not in use, or any upwards light output. • Determine any poorly oriented lighting (particularly towards sensitive receivers and reflective surfaces).	Annually
Lighting wavelength / orientation	Sensitive receivers	• Lighting orientation is to avoid sensitive receivers. • Short wavelength radiation is to be filtered out of lighting oriented towards sensitive receivers. (Adaptive management to be	• Record lighting observations from sensitive receivers (Hearson Cove, Holden Beach, Deep Gorge etc). • Review the Fauna	Monthly

		applied dependent on the fauna potentially impacted by lighting, and the wavelength of light being emitted).	Interaction Register for potential impacts by lighting and apply adaptive management.	
Lighting reflection	Areas where lighting is oriented towards reflective surfaces.	• All glass (windows/doors) of buildings to have a glass light transmissivity rating of 0.5 or less. • All glass (windows/doors) of buildings to have opaque (block-out) blinds/curtains/shutters fitted. • Position doors and windows facing on the north and south ends of the building to avoid light escaping in the direction of the sensitive receptors located to the east and west. • Exterior finishes on all buildings to be matte and have a maximum reflective value of 30%. • All other surfaces, including roads, to be matte and have a maximum reflective value of 30%, unless not technically feasible or presents a health and safety risk. • Avoid shiny bright white painted surfaces on buildings, on wastewater treatment tanks and facilities and in-service areas.	• Determine reflective value of all exterior finishes / surfaces (including roads). • No white or light-coloured reflective paints to be used on any project building exterior. • Determine all glass transmissivity ratings. • Inspect building and lighting orientation towards sensitive receivers (inc. Hearson Cove and Deep Gorge).	Annually
Energy consumption	All Project lighting	• Energy consumption of Project luminaires to be recorded.	• Install wireless energy monitors for real-time display of total	Monthly

			power consumption.	
Best practice lighting design	All Project lighting	• Prepare and review lighting design reports. • Determine any gaps between project lighting design and requirements of the Australian Standards (AS/NZS4282:2019). • Monitor for new lighting policy and legislation. • Best Practise technology to be regularly evaluated. • Monitoring for new scientific information regarding lighting (and potential impacts to fauna and the environment).	• Conduct compliance review and gap analysis between the LMP and this Light Management Protocol. • Review light monitoring results. • Review principles of AS/NZS 4282-2019: Control of Obtrusive Effects from Outdoor Lighting Guidelines.	Annually
Best practice lighting design	Plant design modelling results	• Development of optimum plant light design, model to be used to predict visibility of proposed lighting design and to test light management and mitigation refinements.	• Using the results from benchmark monitoring. • Development of light provisions in plant design. • Modelling the predicted plant lighting design and potential emissions. • If required, prepare additional management and mitigation measures in design to assess and predict proposed light design emissions of plant. • Review similar modelling of plants and light emissions in	• Following submission of 85% light design by EPC Contractor. • Update the Light Model as required through adaptive management approach (an update will be triggered by:

			• the Burrup Peninsula to prepare & compare modelling. • Review and apply best practise technology.	

APPENDIX P – GREENHOUSE GAS MANAGEMENT PROTOCOL

GREENHOUSE GAS EMISSIONS MANAGEMENT PROTOCOL

Rev.	Date	Description	Prepared	Checked	Approved
1	14/9/2023	REISSUED FOR USE	M. HEARNE	S. FRENCH-BLUHM	J. GUYER

Revision control sheet

Revision No	Date	Revision Details
1	14/9/2023	REISSUED FOR USE
0	26/4/2023	ISSUED FOR USE
A	27/9/2022	ISSUED FOR INTERNAL REVIEW

Table of Contents

1. EXECUTIVE SUMMARY

This Greenhouse Gas Emissions Management Protocol (GHGEMP) has been prepared by the CONTRACTOR to comply with the requirement of the Ministerial Statement No. 180 (MS 1180), provisions of the Confirmed Greenhouse Gas Management Plan (PCF-PD-EN-GHGMP) and the management controls specific to the CONTRACTOR construction methodology that will be applied by the CONTRACTOR during the construction program relating to Project CERES.

The GHGEMP describes the Scope of Work, addresses all requirements related to management of greenhouse gases by the Project, and establishes the strategies, methods, processes which will be adopted by CONTRACTOR to provide certainties in delivering successful execution of the project while adhering to greenhouse gas objectives for the Project.

The Greenhouse Gas Emissions Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans including monitoring of greenhouse gas emissions.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise greenhouse gas emissions for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The GHGEMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This GHGEMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Greenhouse Gas Management Plan and the CONTRACTOR CEMP it is appended to. It **does not** replace the Confirmed Greenhouse Gas Management Plan, it aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

2. ABBREVATIONS AND DEFINITIONS

DEFINITIONS	
CONTRACT	Contract agreement entered between OWNER and CONTRACTOR.
CONTRACTOR	SAIPEM CLOUGH JOINT VENTURE
DEVELOPMENT ENVELOPE	The Project Development Envelope to which the Part IV of the EP Act and EPBC Act assessments relate shown in Figure 2-1 of the ERD
DISTURBANCE AREA	The area within the Development Envelope (DE) covered by the urea production plant that will be cleared for plant construction and laydown areas
ENVIRONMENTAL LEAD	Includes the Environmental Representative and Lead for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR.
ENVIRONMENTAL ADVISOR	Includes the Environmental Advisor/s for the CONTRACTOR team, who are responsible for carrying out the responsibilities as they relate to the CONTRACTOR and as directed by the Environmental Lead and or the HSSE Deputy.
PERDAMAN ENVIRONMENTAL REPRESENTATIVE	The Environmental Representative includes Perdaman's ENVIRONMENT AND HERITAGE MANAGER, the ENVIRONMENTAL COORDINATOR or their delegated representative that represents Perdaman and is accountable for Perdaman responsibilities during construction.
ENVIRONMENT AND HERITAGE MANAGER	The ENVIRONMENT AND HERITAGE MANAGER is Perdaman's site based Environmental Representative who has the authority and responsibility for managing the implementation, compliance, and effectiveness of the Project's environmental and heritage requirements.
GROUND DISTURBANCE PERMIT	A GROUND DISTURBANCE PERMIT (GDP) is a permit issued to a SUBCONTRACTOR, by the CONTRACTOR, enabling Works within defined battery limits to manage any impacts on native vegetation, heritage, or other environmentally sensitive values. It includes the key approval commitments and obligations obtained by or issued to the CONTRACTOR or OWNER by regulators, tenure holders and other third parties.
INFRASTRUCTURE ZONE	East West Service Corridor is the common-user corridor disturbed / cleared by WA government and the Project footprint in Dampier Port
LICENSOR	HALDOR TOPSOE for AMMONIA, SAIPEM for UREA, THYSSENKRUP for GRANULATION
MAY	Indicates that the SUBCONTRACTOR is permitted to do something, or the CONTRACTOR reserves the right to dosomething according to the text.
MUST	Indicates a requirement or action that must be followed to comply with legal framework for the Project and environmental approval conditions.
NO-GO ZONES	NO-GO ZONES are defined areas within the Project's footprint which ARE NOT ENTERED AND OR DISTURBED by Project activities. These areas

	are established to protect environmental, cultural heritage, infrastructure and other values from damage or other detrimental impacts.
OWNER / PROPONENT	PERDAMAN CHEMICALS AND FERTILIZERS PTY LTD.
PROJECT	BURRUP UREA PROJECT - **PROJECT CERES** (Plant to be supplied, erected and commissioned by CONTRACTOR under the CONTRACT).
PROJECT PERSONNEL	PROJECT PERSONNEL includes all persons working on the Project directly employed by PERDAMAN, or its CONTRACTORS.
PROJECT WORK SITES	The Project work sites include Area C, Area F, the causeway linking these two areas, the conveyor corridor tothe port and the port storage and loading infrastructure. It can also include any other Project relevant location under operational control of PERDAMAN.
REGISTRAR	REGISTRAR of ABORIGINAL HERITAGE SITES, Western Australia Department of Planning, Lands and Heritage.
SHALL	Indicates that a statement is mandatory.
SHOULD	Indicates a recommendation.
SUBCONTRACTOR	Any supplier, consultant or CONTRACTOR engaged by the CONTRACTOR to carry out specific activities or tasks on behalf of the CONTRACTOR during construction (i.e., Dewatering Sub-CONTRACTOR, Clearing Sub-CONTRACTOR etc).
UREA PLANT DEVELOPMENT ENVELOPE (UPDE)	Comprises Site C, Site F and the causeway as shown in Figure 4.1.
VENDOR	Entity that provides equipment and related services part of the WORK according to purchase order
WILL	Indicates a requirement or action that Perdaman or the CONTRACTOR will be implementing during the Project activities to ensure compliance with legal framework for the Project and environmental approval conditions.
WORKS	All work which the CONTRACTOR and or its SUBCONTRACTORS are required to perform to comply withits obligations under the CONTRACT.
ABBREVIATIONS	
BMIEA	Burrup & Maitland Industrial Estates Agreements
BSIA	Burrup Strategic Industrial Area
CAR	Compliance Assessment Report
CEMP	Construction Environmental Management Plan
DE	Development Envelope
DCCEEW	The Federal Department of Climate Change, Environment, Energy and Water.
DPLH	Department of Planning, Lands and Heritage
EMS	Environmental Management System
EP Act	*Environmental Protection Act 1986*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPC	Engineering Procurement Construction

ERD	Perdaman Urea Project, Environmental Review Document. Assessment No.2184(WA) – 2018/8383 (Commonwealth)
GDA	Ground Disturbing Activities
GDP	Ground Disturbance Permit
GHGEMP	Greenhouse Gas Emissions Management Protocol
MAC	Murujuga Aboriginal Corporation
MS 1180	Ministerial Statement No. 1180
NAC	Ngarluma Aboriginal Corporation
NYFL	Ngarluma and Yindjibarndi Foundation Limited
OEMP	Operational Environmental Management Plan
PUP	Perdaman Urea Project

3. KEY EXECUTION PLANS & PROCEDURES

Following are the list of key execution plan documents serving as a guide lines for respective execution domains.

Document No.	Document Title
0000-ZA-E-09071	Construction Environmental Management Plan
PCF-PD-EN-GHGMP	Confirmed Greenhouse Gas Management Plan

4. PROJECT DETAILS

OWNER is focused on the development of a urea fertilizer plant, called as Project CERES with a nominal daily production capacity of 6,200 tons, equating to 2.140 million tons per annum at Sites C and F in the Burrup Strategic Industrial Area in Western Australia.

The plant will be located approximately 10km from Dampier and 20km North-West of Karratha on the North-West coastline of Western Australia.

Figure (4.0) Location map

4.1 Plant overview

The Plant areas include Site C, Site F, the causeway, conveyor, and Port storage and loading Facilities. Figure (4.1) Project site areas below illustrates the project site areas.

Site C is relatively undeveloped except for some access roads. The site is situated adjacent to the Yara Ammonia Plant to its East, to the North are steep rocky outcrops and to the South the saline coastal flat area. Drainage from the site flows in a southerly direction towards the saline coastal flat between Hearson Cove and King Bay.

Once developed Site C will include the main process plant, associated infrastructure and a 75,000-tonne urea storage shed.

Fig (4.1) Project site areas

Site F is situated to the South of Site C, on the opposite side of the saline coastal flat. It includes Hearson Cove Road and a significant proportion of previously disturbed area. Drainage from this area flows primarily North into the saline coastal flat.

During the construction phase of the Project, this area will be used as laydown for equipment and modules. The East portion of Site F will be developed to include the Perdaman Urea Plant's administration, maintenance, storage and warehousing facilities.

The causeway, which links Sites C and F, extends across the saline coastal flat. The causeway will be built above the flat with regular culverts to ensure the structure does not impede natural drainage or tidal action, whilst providing continuous access between Sites C and F.

The 3.2km conveyor will transport urea from the storage shed at Site C to the Port loading shed. From Site C the conveyor will be constructed on relatively undisturbed land, to the West of the existing Water Corp pipeline corridor. It will extend North, connecting to the existing Burrup East West Services Corridor (EWSC).

The EWSC is a bitumen sealed corridor that already includes the Yara Pilbara Fertilizer's ammonia pipeline which extends to the bulk liquids jetty adjacent to the Project's Port

facilities. The Project's conveyor will be positioned within this corridor and where possible use existing culverts to avoid roads and other infrastructure. Where the conveyor crosses Woodside's Haul Road the road will be built up to allow the conveyor to pass under.

The Port Area includes a 75,000-tonne storage shed, conveyor and ship loader. The storage shed will be located within an existing quarry and the ship loader on a wharf which will be constructed by others engaged by Pilbara Port Authority (PPA). The Conveyor will be situated on cleared area associated with the new wharf and quarry, and a 0.2-hectare section of undisturbed rocky ground between these two areas.

4.2 Client information

Perdaman Chemicals and Fertilizers Pty Ltd., ABN 31121263 741of Level 17, 58 Mounts Bay Road, Perth, Western Australia.

Perdaman is a multinational group based in Western Australia with a long-standing track record in involvement within a diverse range of markets. Perdaman Industries (Chemicals & Fertilizers division) has current focus on the production of urea, the most commonly traded nitrogenous fertilizer.

The plant named as project CERES will be located at Karratha, Western Australia. The planned capacity of the Urea plant is two million ton per annum with most of the urea produced by the plant will be exported.

4.3 Scope & Context

This Greenhouse Gas Emissions Management Protocol (GHGEMP) has been developed as an appendix to the CONTRACTOR Construction Environmental Management Plan (CEMP) and align with the following Perdaman Confirmed Management Plans:

- Confirmed Greenhouse Gas Management Plan (PCF-PD-EN-GHGMP)

This Plan has also been developed to comply with the requirements of the Ministerial Statement (1180) (Condition 3) and the management controls specific to the construction methodology that will be applied by the CONTRACTOR during the construction program.

Potential sources of greenhouse gases (GHG) during construction includes (not limited to):

- Emissions during operation and idling of plant, equipment, and machinery.
- Use of diesel and other fuels on site during construction
- Transport of materials required for construction to the Project site.
- Energy use during construction.
- Commissioning of the Plant.

CONTRACTOR and its SUBCONTRACTORS shall ensure the requirements of MS 1180 are complied with.

4.4 Purpose of this Plan

This protocol has been developed to guide activities associated with the construction of the Perdaman Urea Project such that greenhouse gas emissions from the Project is minimised and ensure compliance with the conditions set out in the Project Approvals and Contract.

The Greenhouse Gas Emissions Management Protocol presents in detail:

- Address relevant conditions of the Project Approvals and confirmed management plans including monitoring of greenhouse gas emissions.
- Provide employees and SUBCONTRACTORS with a clear and concise description of their responsibilities in relation to controls to minimise greenhouse gas emissions for the duration of the construction works.
- Consider all relevant legislation, standards and technical guidelines when developing preventative controls.
- Detail the CONTRACTOR monitoring requirements during construction.

The GHGEMP is prepared and maintained by the CONTRACTOR Environmental Team or designated delegate. It is a “live” Protocol and as such may be reviewed periodically and revised as needed.

This GHGEMP must be read and implemented in conjunction with the most recent and approved version of the Confirmed Greenhouse Gas Management Plan and the CONTRACTOR CEMP it is appended to. It **does not** replace the Confirmed Greenhouse Gas Management Plan, it aims to provide the construction team with clear actions, management, and monitoring responsibilities under these plans during the construction program.

Mitigation measures, monitoring and reporting requirements related to the construction team are presented within this protocol. This protocol contains specific references to the Confirmed Greenhouse Gas Management Plan, where the reader may have to review the Confirmed Greenhouse Gas Management Plan to obtain the correct context of a requirement.

4.5 Plan Review

This protocol can be reviewed as updated independently of the CEMP and should be treated as an Appendix to the CEMP, particularly where there are changes to the construction methodology affecting greenhouse gas emissions, and if there are changes to management or monitoring required where management actions and targets are not achieved (refer to the Confirmed Greenhouse Gas Management Plan for further details).

This protocol will be reviewed and amended any time the Confirmed Greenhouse Gas Management Plan has been reviewed and amended, to ensure all Plans appropriately correspond to one another, particularly upon identification of additional risks during the plant design and construction planning stage.

Any review to this protocol will be submitted to Perdaman for review and approval. The Perdaman Environment & Heritage Manager may direct the CONTRACTOR to further amend the protocol where necessary.

4.6 Responsibility

The mitigation measures presented in Section 6 below are the responsibility of the CONTRACTOR and their SUBCONTRACTORS to carry out and implement during Project construction, unless otherwise indicated within the specific control or measure. Further details on the CONTRACTOR role specific authorities and responsibilities can be sighted in section 9 of the CEMP. Appendix D of the CEMP includes Project Organisation Charts.

Any SUBCONTRACTOR engaged to carry out works on behalf of the CONTRACTOR during the construction works must comply with the CEMP and the management measures stated within this protocol.

In certain circumstances a SUBCONTRACTOR working under the CONTRACTOR will be primarily responsible for the implementation of management measures, as indicated per the work packages they will be executing on the Project and will be doing so under the CONTRACTOR authority and oversight.

Any SUBCONTRACTOR carrying out works on behalf of the CONTRACTOR will be required to complete the applicable inductions and training as well as participate in pre-starts and toolbox talks (refer to the CEMP for detail) as well as applicable risk analysis for work activities. The responsibilities of SUBCONTRACTORS are further detailed within the CEMP. The CONTRACTOR will monitor the environmental performance of the SUBCONTRACTORS against the implementation of applicable management measures during environmental inspections and during SUBCONTRACTOR audits (refer to the CEMP for detail).

Where a conditional requirement or a management measure is the responsibility of the OWNER, the measure or conditional requirement (MS No. 1180) will state this.

It is important to note that overall accountability lies with the OWNER for ensuring the conditions of the EPBC 2018/8383 Approval and MS 1180 are met throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance with these approvals. The OWNER is accountable for reporting to regulatory bodies. CONTRACTOR must ensure reporting of data and information is provided to the OWNER to ensure reporting can be carried out within the applicable timeframes.

SUBCONTRACTORS must provide all relevant information and data requested by CONTRACTOR to the Environmental Lead within the specified timeframe to ensure regulatory reporting, incident investigations and corrective actions can be implemented.

5. ENVIRONMENTAL APPROVALS

5.1 Part IV Approval

The Project has approval under the Environmental Protection Act 1986 to carry out the implementation of the Proposal as per the conditions within the Ministerial Statement 1180.

The EPA has identified Air Quality as Key Environmental Factor. The EPA Objective for Air Quality relevant to greenhouse gas emissions is as follows:

- To maintain air quality and minimise emissions so that environmental values are protected.

This GHGEMP will communicate the relevant aspects that are within the Confirmed Greenhouse Gas Management Plan that relate to the construction works. Where a particular objective, trigger, threshold, management action, monitoring event or reporting requirement within the GHGMP relates to the direct implementation of a control detailed within the Protocol, it will be stated within Table 6-1.

Overall accountability lies with the OWNER for ensuring the conditions of the MS 1180 are complied with throughout the Project phases, including construction. CONTRACTOR are responsible for carrying out certain management and controls to ensure compliance.

6. MITIGATION MEASURES

6.1 Management Protocols

Mitigation measures presented in Table 6-1 provide the CONTRACTOR team and its SUBCONTRACTORS with minimum standard controls to mitigate impacts associated with

the CONTRACTOR construction methodology to minimize greenhouse gas emissions. These mitigation measures have been adopted from the OWNER PEMP environmental protocols, and the Confirmed Greenhouse Gas Management Plan.

Table 6-1 Greenhouse Gas Emissions Management Protocol Mitigation Measures

Requirements	Project Area
Project areas = CF – Site C & F / Ca – Causeway / Co – Conveyor / P – Port	
Plan and optimise utilisation of construction crews, materials and services in a way that reduces GHG emissions, including sourcing materials and services from local resources to reduce transport emissions.	CF, Ca, Co, P
Ensure vehicles, plant and equipment are well maintained to reduce exhaust emissions to surrounding environment.	CF, Ca, Co, P
Ensure vehicles, plant and equipment are fitted with systems to reduce pollution where practicable.	CF, Ca, Co, P
Maintain record on GHG emission sources, fuel consumption and energy consumption.	CF, Ca, Co, P
Encourage personnel onsite to switch lighting and appliances off when not in use.	CF, Ca, Co, P
Educate personnel using awareness reminders, posters and signage in offices, toilets and other facilities to encourage energy-saving strategies.	CF, Ca, Co, P
Include timers and sensors on lighting in ablutions and outside offices to reduce energy use.	CF, Ca, Co, P
Ensure vehicles, plant and equipment are not left idling.	CF, Ca, Co, P
Utilise equipment and vehicles that conform with the highest emissions standards available.	CF, Ca, Co, P
Ensure diesel used conforms with the national diesel fuel quality standard (AS)	CF, Ca, Co, P
Avoid the onsite use of diesel- or petrol-powered generators or other equipment by substituting mains electricity or battery powered equipment where practicable.	CF, Ca, Co, P
Reuse waste materials, demolition materials, soil material. Waste reduction strategies will be implemented where practicable.	CF, Ca, Co, P

ATTACHMENT A –WATER QUALITY, EROSION & SEDIMENT CONTROL MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09733.

ATTACHMENT B – FLORA & VEGETATION MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09734.

ATTACHMENT C –NATIVE FAUNA MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09735.

ATTACHMENT D – HERITAGE MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09736.

ATTACHMENT E – PEST MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09737.

ATTACHMENT F – SOLID & LIQUID WASTE MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09738.

ATTACHMENT G – WEED MANAGEMENT SUB-PLAN

Refer to Project Document - 0000-ZA-E-09739.

ATTACHMENT H – ENVID RISK ASSESSMENT

Once ENVID completed, the ENVID assessment will be included as Attachment H to this Plan.