



## Application for Works Approval

### Part V Division 3 of the *Environmental Protection Act 1986*

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**Works Approval Number** W6946/2024/1

**Applicant** Perdaman Chemicals and Fertilisers Pty Ltd

**ACN** 121 263 741

**File number** DER2024/000272

**Premises** Project Ceres (Portside)  
Part of Lot 3003 on Plan 421422  
As defined by the coordinates in Schedule 2 of the works approval

**Date of report** 3 October 2024

**Proposed Decision** Works approval granted

#### MANAGER, PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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## 1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6946/2024/1 has been granted.

## 2. Scope of assessment

### 2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

### 2.2 Application summary and overview of premises

Perdaman Chemicals and Fertiliser Pty Ltd (the applicant) has proposed and sought approvals to develop a urea production facility (Project Ceres) on the Burrup Peninsula approximately 9km north-east of Dampier. Process infrastructure, including the urea manufacturing plant, utilities and support service are located on Site C and Site F. A conveying system will connect Site C to the export facility located approximately 2 km west-northwest of Site C within the Pilbara Port Authority lease area (Figure 1).

On 11 June 2024, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). These premises activities relate to Category 70 (*Screening, etc. of material: premises on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated, More than 5,000 but less than 50,000 tonnes per year*) as listed under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) and as per the assessed production / design capacity which is defined in works approval W6946/2024/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6946/2024/1.

#### 2.2.1 Background

The crushing and screening activities proposed in this works approval application relate to bulk earthworks required to facilitate the construction of Project Ceres portside facilities (urea storage shed, urea transfer conveyors and shiploader) within the port lease boundary. Bulk earthworks will involve using the processed material to level the site in preparation for the construction of the portside facilities and for pavement materials for site works. Materials to be processed include gravel and rocks excavated from within the premises boundary. The proposed premises is an existing disturbed site, and no clearing is required.

Additional construction activities to support the construction of the broader Project Ceres urea plant and associated infrastructure at Sites C & F (including crushing and screening activities) are authorised via separate instruments:

- Works Approval W6875/2023/1 and
- Licence L9426/2024/1.

Licence L9426/2024/1 authorises Category 12 (crushing and screening) activities to support construction of the urea manufacturing plant, with construction of the primary plant infrastructure (associated with Categories 31, 52, 58 and 85) authorised under W6875/2023/1.

## 2.2.2 Proposal description

### Timeframe

The applicant states that the plant will only be used up to and until the maximum throughput of 49,999 tonnes is reached and is only expected to operate for a short-term duration commencing mid November 2024. To achieve target production, the plant is likely to only operate every few days, processing up to 2,500 tonnes per day (tpd) when operated. On this basis, the plant is only expected to operate for a total of 20 days over a period of approximately two months.

### Operation of crushing and screening plant

The premises is located on previously disturbed area within Pilbara Port Authority land. It is surrounded by steep rocky embankments on the east, south and western boundaries limiting the potential location of crushing and screening equipment within the premises. The Applicant proposes two separate locations for crushing and screening activities: Option 1 to the south and Option 2 to the north (Figure 2). Within these two areas, the crushing and screening equipment will be restricted to locations greater than 60 m from heritage sites.

The plant will only be operated within adequately bunded areas (750 mm windrows). Stockpiles will be maintained to a maximum height of 5 m above the existing ground level with a maximum of three stockpiles at each site. Dust controls involve water sprays on the plant at material transfer points, crusher and material stockpiles whenever materials are being processed and dust suppression via a fogging cannon and water trucks on the haul roads and open areas.

### Infrastructure and equipment

The following infrastructure and equipment will be present onsite for crushing and screening activities:

- 1 x primary jaw crusher;
- up to 2 x secondary cone crushers;
- 1 x incline screen;
- 1 x track mounted stacker;
- 1 x excavator (loading tool or equivalent);
- 1 x loader;
- 1 x 9,000-litre water tank for the purpose of supplying to dust suppression sprays on the plant; and
- 1 x water cart (40,000L).

### Back-up equipment

In addition to the items of infrastructure / equipment listed above, the applicant has advised that there are several pieces of “back-up equipment” that will be situated at the premises ready to be mobilised immediately in the instance that authorised operating equipment is offline. The back up equipment proposed by the applicant includes:

- 1 x jaw crusher;
- 1 x secondary cone crusher;
- 1 x incline screen;
- 1 x excavator; and
- 1 x loader.

The applicant has advised that having back up equipment on site will enable operations to continue while equipment that is not available for use is repaired etc. The method would involve swapping one jaw or cone crusher for the same or similar jaw or cone crusher.



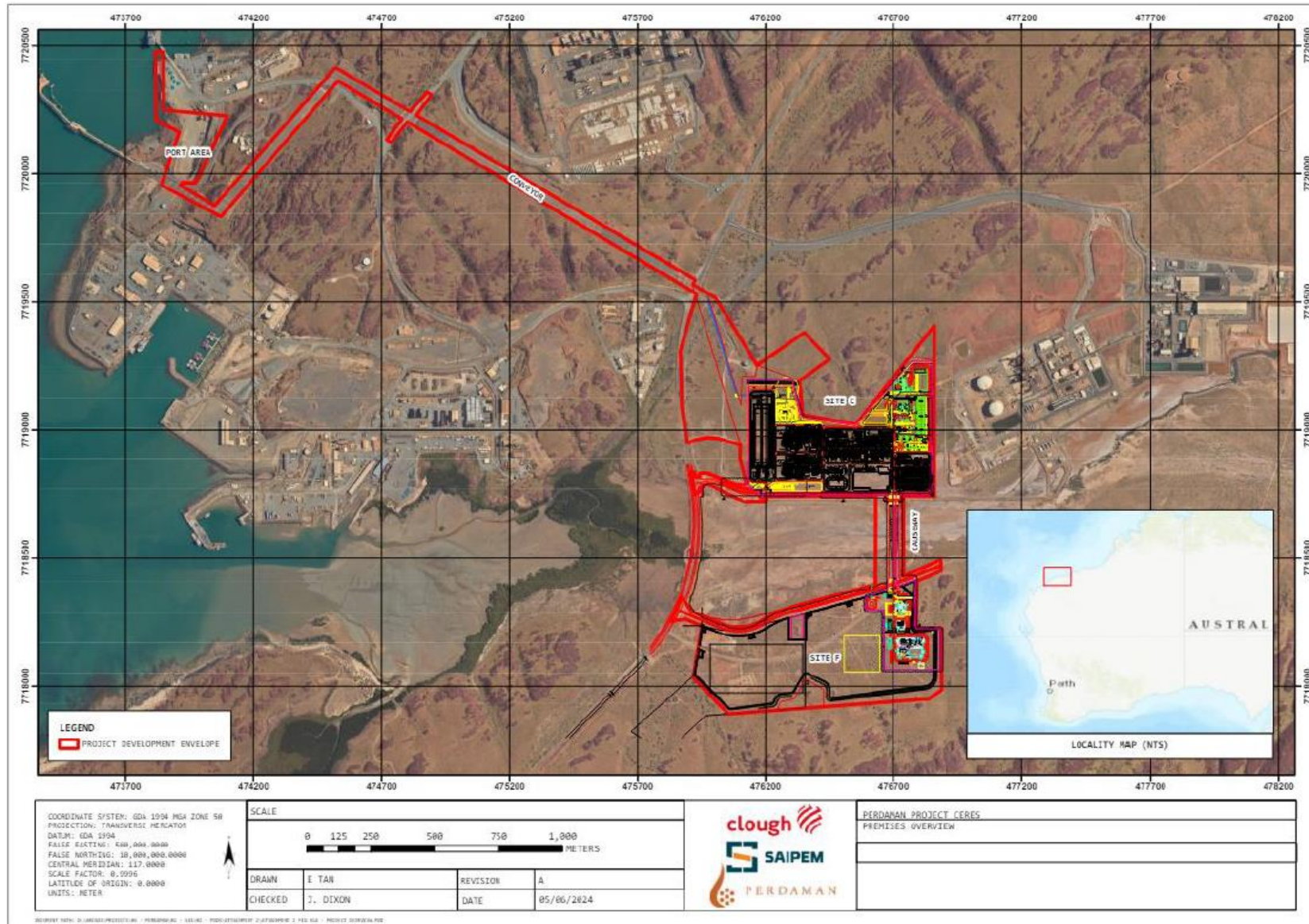
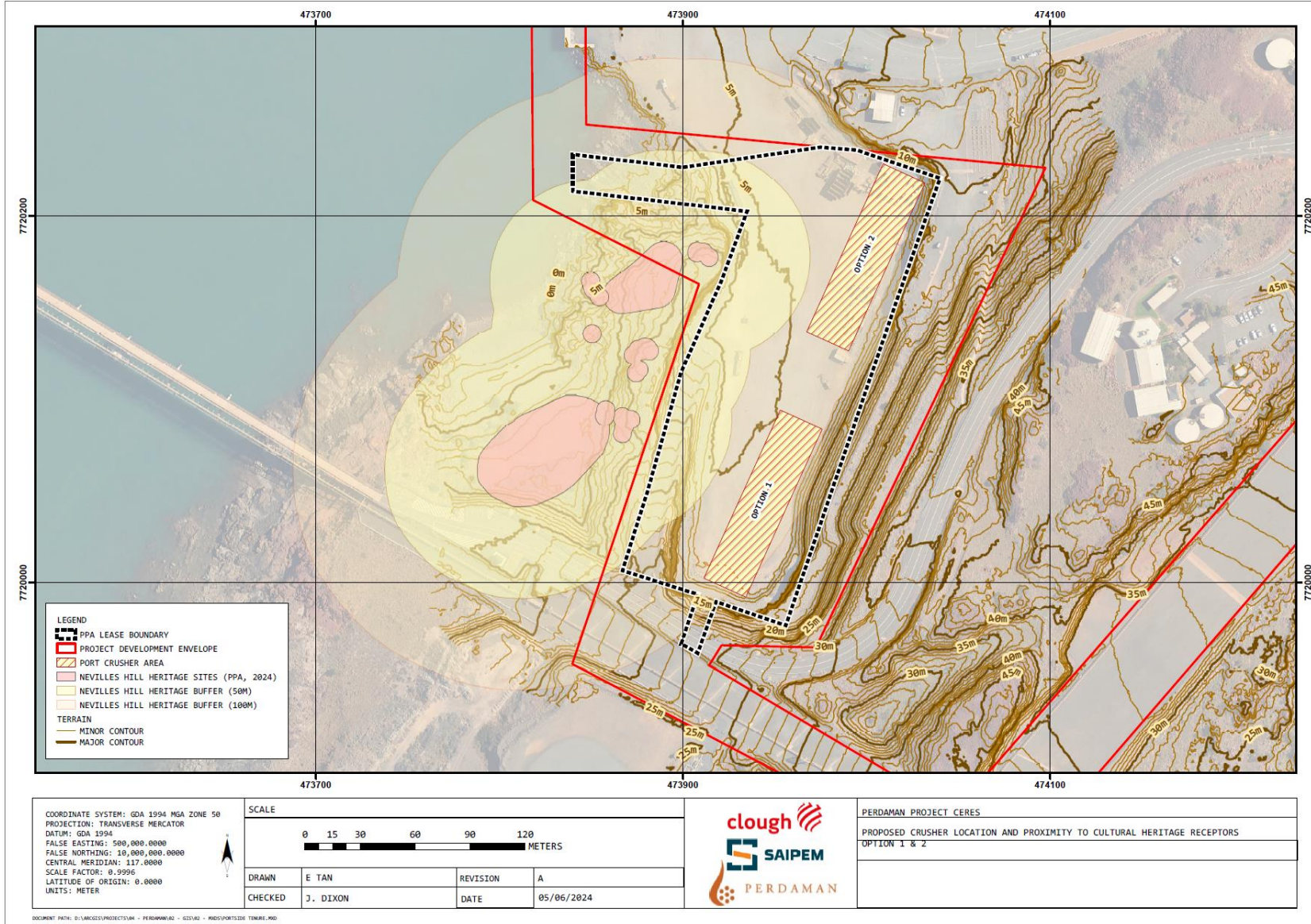


Figure 1: Project Ceres site overview and location





**Figure 2: Crushing and screening locations within the Project Ceres port lease boundary**

### 2.2.3 Risk profile of dust generated from crushing and screening activities.

Geological properties of the material sourced for the proposed crushing and screening activities have the potential to influence the risk profile of dust emissions. The material being crushed and screened has been identified to comprise generally of granophyre, sand and alluvium material (Donaldson, 2011). Materials being processed are not sulphur or nitrous-rich and any subsequently deposited particulates are not expected to form acids following period of rainfall or dew, which has been identified as a risk to rock art from exposure of acidic dust pollution on rock surfaces mixing with water to form corrosive acids (Smith et al, 2022).

The applicant commissioned consultant Enveng Group to undertake a baseline assessment of the premises to determine potential risks of contamination. Soil samples were obtained from multiple locations across the site and analysed for various potential contaminants. Results indicated that all potential contaminants of concern<sup>1</sup>, including PFAS compounds, were not detected in soil samples. Heavy metals (As, Cr, Cu, Pb, Ni, Hg, Zn) were detected above the limit of reporting but below the nominated assessment criteria (NEPC 2013).

### 2.2.4 Ambient air quality and regional influences

The Burrup Peninsula is a semi-arid climate of generally hot summers with period heavy rains and mild winters with occasional rainfall. Tropical cyclones can occur between the months of December and April.

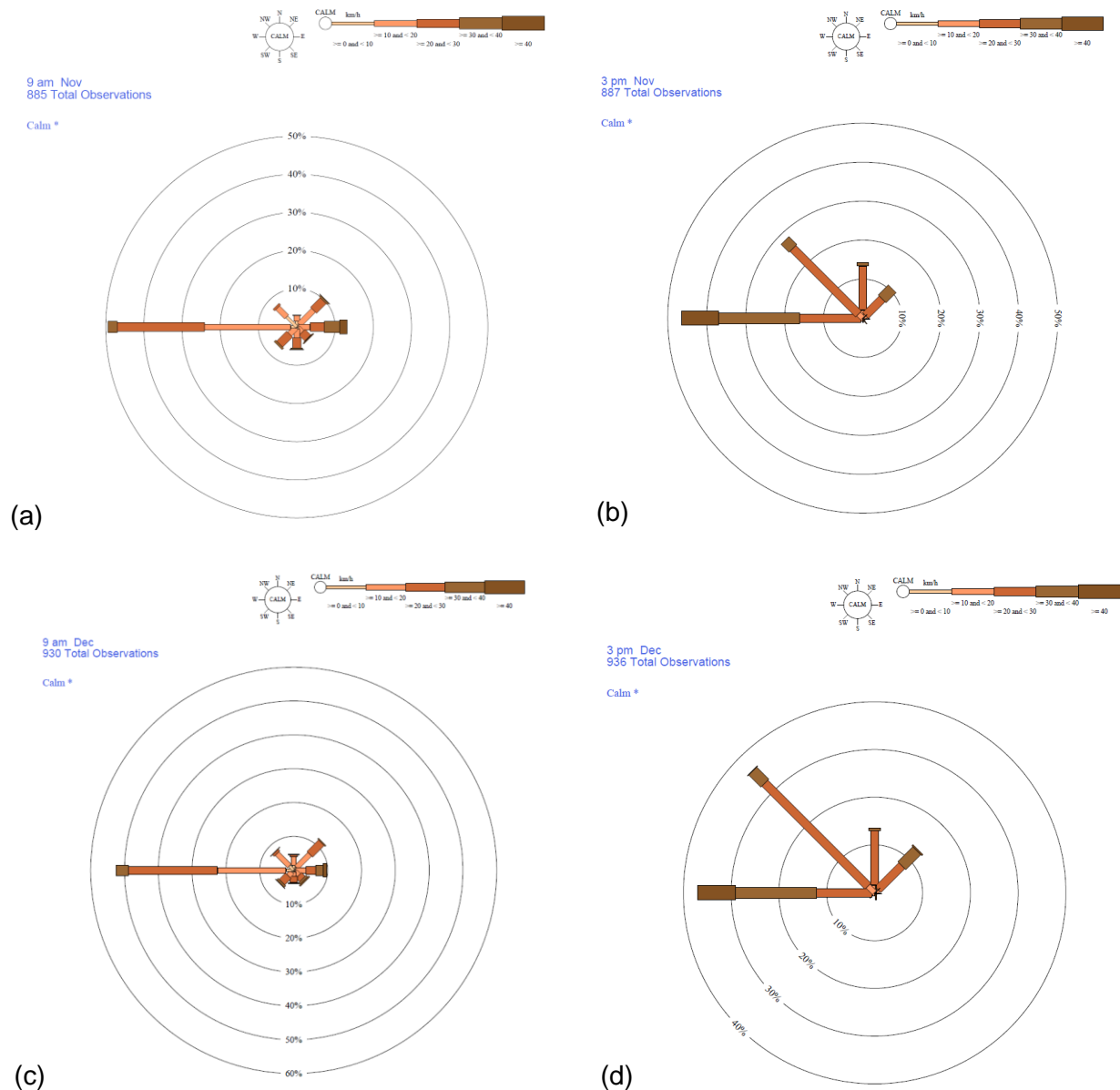
The wind conditions for the area are characterised by prevailing easterlies during the dry season between April and August, and westerlies during the wet season between October and February. The applicant has indicated that the plant will only operate for short term period commencing November 2024 when westerly winds prevail (Figure 3).

Air quality monitoring conducted by the applicant at three locations within Site C and F recorded level of dust deposition for baseline conditions at those sites. Two of the three monitors reported detectable levels of 0.2 g/m<sup>2</sup>/month, and the third monitor was below the detection limit, indicating generally low dust levels during this monitoring.

As part of the risk assessment framework, the department considers that wind direction will influence the pathway for an emission to impact a receptor, specifically for any dust emission from the crushing and screening activities to impact identified heritage sites near the proposed prescribed premises. In support of this application and requirements under other approvals (discussed in section 3.1 and 4.1.1), the applicant has proposed a dust monitoring program specific to construction activities associated with Project Ceres. The program includes a monitor at the portside premises to address potential dust associated with works at that site. Installation of a monitor at the port is also a requirement of works approval W6875/2024/1. As part of the risk assessment, the delegated officer has considered the suitability of this program with regards to the location of the proposed monitor, the location of the sensitive receptors in relation to the crushing and screening activities, and regional meteorological conditions. The applicant has advised that there is a weather station at Site C for the purpose of recording meteorological data.

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<sup>1</sup> Contaminants of concern include Polychlorinated biphenyls (PCBs), Organochlorine pesticides / Organophosphorus pesticides (OC/OP), Phenols, Polynuclear aromatic hydrocarbons (PAHs), Total recoverable hydrocarbon (TRH), Benzene, Toluene, Ethylbenzene and Naphthalene (BTEXN) and Per- and polyfluoroalkyl substances (PFAS) compounds..



**Figure 3: Wind roses of prevailing winds from Karratha Airport for (a) November morning, (b) November afternoon, (c) December morning and (d) December afternoon [www.bom.gov.au]**

### 3. Legislative context and other approvals

Table 1 below provides a summary of relevant approvals for the premises and assessment.

**Table 1: Relevant Approvals and Tenure**

| Legislation          | Details   |
|----------------------|---|
| Development Approval | <p>The Development Approval DA21261 was granted in accordance with regulation 8 of the <i>Planning and Development (Development Assessment Panels) Regulation 2011</i> on 15 March 2022.</p> <p>The DA specify that the applicant is required to implement dust management measures during construction and operation and plans</p> |



|  |  |
|--|--|
|  | under any other relevant legislation and/or approvals.   |
| Pilbara Ports Authority  | A Construction Licence has been agreed between the applicant and Pilbara Ports Authority. A Development Approval Decision Notice was issued in May 2023 by Pilbara Ports Authority covering the works that will be carried out by the applicant in the portside area.  |
| <i>Environmental Protection and Biodiversity Conservation Act 1999</i> | This proposal was referred under the EPBC Act and determined to be a controlled action (EPBC 2018/8383) pursuant of section 75 of the EPBC Act. The action assessed involved the construction and operation of the urea plant and associated infrastructure. The controlling provisions are section 15B and 15C (national heritage values of a national heritage place), section 18 & 18A (threatened species and communities), section 20 & 20A (migratory species) and section 23 & 24A (Commonwealth marine area). The decision to approve the action passed on 26 February 2022. |
| <i>Aboriginal Heritage Act 1972</i>                                    | This proposal has consent under section 18 of the <i>Aboriginal Heritage Act 1972</i> issued on 27 January 2022.   |
| <i>Biodiversity Conservation Act 2016</i>                              | Authorisation to take or disturb threatened species under section 40 of the <i>Biodiversity Conservation Act 2016</i> for the purpose of taking threatened fauna in a management operation to facilitate the construction and operation of a urea production plant and associated activities. This was originally approved on 28 June 2023.  |
| Part IV of the <i>Environmental Protection Act 1986</i>                | Ministerial Statement 1180 (discussed further below).  |
| Part V of the <i>Environmental Protection Act 1986</i>                 | Works Approval W6875/2023/1 for Category 31, 52, 58 and 85 activities granted on 25 June 2024.<br><br>Licence L9426/2024/1 for Category 12 activities at Sites C and F granted 19 March 2024.  |

### 3.1 Part IV of the EP Act

The Perdaman Urea Project was referred to Environmental Protection Authority (EPA) under section 38 of the EP Act on 7 May 2018 and was assessed (Assessment No: 2184) at the level of Public Environmental Review (PER). The EPA released its report and recommendation on the project (EPA Report 1705) on 1 September 2021. The Ministerial Statement (MS) 1180 was published on 24 January 2022.

The approved proposal authorised the construction and operation of a urea production plant with a nominal production capacity of about 2 million tonnes per annum (Mtpa) within Development Envelopes named Site C and Site F, located within the Burrup Strategic Industrial Area (BSIA) on the Burrup Peninsula.

MS1180 was granted with the requirements that revised management plans (under Conditions 3-3, 4-3, 5-3, 7-2, 8-2, 9-2 and 10-2) and supplementary studies (under condition 6-3 and 7-1) must be submitted at least six months prior to ground disturbing activities and that the proponent must not undertake the commencement of ground disturbing activities until the CEO has confirmed in writing that the management plans have been revised and satisfy the requirements of those conditions.

On 6 July 2022, the applicant received final notification from the EPA that it had complied with the requirements in accordance with the Part IV approval (MS1180) for the management plans required at least 6 months prior to Ground Disturbing Activities.

Table 2 details the key environmental factors that were considered during the Part IV assessment and conditioned through the MS1180, including specific requirements from the various management plans, that are relevant to the scope of this licence application.

**Table 2: EP Act Part IV assessment relevant to the assessment of Category 70 activities**

| Environmental factor                         | Summary of Part IV assessment related to this proposal  |
|--|---|
| Air quality<br>(Conditions 2-1 to 2-10)      | <p>Conditions of MS1180 require that no air emissions from the proposal have an adverse impact accelerating the weathering of rock art within Murujuga beyond natural rates. Air emissions from the overall urea plant proposal are required to be managed in accordance with an Air Quality Management Plan (as required by condition 2-3 of MS1180). Further, the applicant is required to implement the Construction Dust Management Procedure and Construction Environmental Management Plan (CEMP) under the Air Quality Management Protocol (discussed further in Table 3) that was developed to support their confirmed Cultural Heritage Management Plan (required by MS1180 conditions).</p>   |
| Cultural heritage<br>(Conditions 9-1 to 9-8) | <p>Conditions of MS1180 require that the implementation of the proposal achieves the following outcomes:</p> <ul style="list-style-type: none"> <li>• avoid, where possible, and otherwise minimise direct and indirect impacts to social, cultural, heritage and archaeological values within and surrounding the development envelope;</li> <li>• allow ongoing Traditional Owner and Custodian access to enable traditional activities and connection to culturally significant areas within and surrounding the development area; and</li> <li>• avoid, where possible, and otherwise minimise direct and indirect impacts to visual and amenity impacts to social and cultural places and activities.</li> </ul> <p>The applicant has a confirmed Cultural Heritage Management Plan to meet the objectives specified in condition 9-1 and to the requirements of condition 9-2. Relevant requirements from this management plan relating to the control of dust emissions include:</p> <ul style="list-style-type: none"> <li>• construction equipment will be checked to ensure is in good condition;</li> <li>• machines to be operated at low speeds where practical and will be switched off when not being used rather than left idling for prolonged periods;</li> <li>• minimise vehicle speeds on and around work sites to be reduced where necessary to minimise dust emissions;</li> <li>• dust suppression techniques used on unsealed roads and access tracks; and</li> <li>• avoiding earthworks during high winds (&gt;40km/hr).</li> </ul> <p>Requirements found to be specific to impacts to rock art are:</p> <ul style="list-style-type: none"> <li>• undertake monitoring during construction and commissioning; and</li> <li>• adopt future environmental air quality objectives and standards derived from the results of the Murujuga Rock Art Monitoring Program.</li> </ul> <p>Relevant requirements from this management plan to control noise emissions include:</p> <ul style="list-style-type: none"> <li>• machines found to produce excessive noise compared to industry best practice will be removed from the site or stood down until repairs or modifications can be made.</li> </ul> <p>The management plan also includes the following commitments to management</p> |

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|  | <p>impacts to cultural heritage sites and value:</p> <ul style="list-style-type: none"> <li>lighting will be designed to reduce light spills.</li> </ul> <p>Revisions of management plans for key environmental factors specified in MS1180 are required to be made in consultation with the Murujuga Aboriginal Corporation to ensure heritage and cultural values are continued to be considered in a holistic way.</p>   |
| <p>Terrestrial flora and vegetation</p> <p>(Conditions 4-1 to 4-9)</p> | <p>Conditions of MS1180 contain restrictions on the extent of clearing to meet the following environmental outcomes:</p> <ol style="list-style-type: none"> <li>(1) the extent of native vegetation clearing within the development envelope shall not exceed 73.05ha; and</li> <li>(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 0.16ha</li> </ol> <p>and to minimise indirect impacts to native vegetation.</p> <p>It is noted that the proposed crushing and screening activities are to occur within an existing disturbed site and no additional clearing is required.</p> <p>The applicant has a confirmed Flora Management Plan submitted under condition 4-3 that satisfies the requirements of condition 4-7 including provisions relevant to managing impacts from crushing and screening activities such as impacts to native vegetation from changes to surface water flows, changes to surface water quality and dust.</p> <p>The Flora Management Plan also involves the requirements for:</p> <ul style="list-style-type: none"> <li>visual monitoring for signs of vegetation stress from dust emissions;</li> <li>implementation of dust suppression on unsealed roads and access roads, when there is visible dust (except during topsoil stripping);</li> <li>implementation of controls relevant to dust in the Air Quality Management Protocol; and</li> <li>inspections regarding dust emissions.</li> </ul> <p>During the assessment for works approval W6630/2021/1 (relating to Category 12 activities at Sites C and F), the department's EPA Services directorate confirmed that specific requirements of MS1180 will manage dust impacts on terrestrial flora as the confirmed plans discussed above will include management controls that include the proposed crushing and screening activities, provided they are undertaken within the approved disturbance footprint of the proposal.</p> |
| <p>Terrestrial fauna</p> <p>(Condition 5-1 to 5-8)</p>                 | <p>The conditions of MS1180 restrict the applicant from clearing specific vegetation species that may provide habitat to fauna and further impacts to short-range endemic fauna species are to be avoided where possible. The environmental objective specified in the MS is to minimise direct and indirect impacts to the northern quoll, Pilbara olive python and ghost bat within the development envelope (which involves the spatial scope of this application).</p> <p>The applicant is required to implement their confirmed Fauna Management Plan and a Threatened Species Management Plan that satisfies the requirements of condition 5-3 including the management of impacts from lighting, dust, noise, vibration, and vehicle and machinery movement strikes.</p> <p>During the assessment for works approval W6630/2021/1 (relating to Category 12 activities at Sites C and F), the department's EPA Services directorate confirmed that specific requirements of the MS will manage dust impacts on terrestrial fauna as the confirmed plans discussed above will include management controls that include the proposed crushing and screening</p>   |

|  |   |
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|  | <p>activities, provided they are undertaken within the approved disturbance footprint of the proposal.</p> <p>The activities associated with the crushing and screening (as under consideration within this works approval application) do not include any further clearing.</p>  |
| <p>Acid sulfate soils (ASS)</p> <p>(Condition 7-1 and 7-2)</p> | <p>As per the conditions of MS1180, the applicant was required to undertake an intrusive acid sulfate soils investigation in accordance with the requirements of DWER's guideline on the <i>Identification and investigation of acid sulfate soils and acidic landscapes</i> (DER, 2015a) at least six months prior to ground disturbing activities.</p> <p>Results from the assessment identified presence of ASS within the supratidal zones between Site C and Site F. The portside area is considered to have a low risk of ASS. If ASS is disturbed during the proposal, it is to be treated and managed in accordance with the requirements the guideline on the <i>Treatment and management of soil and water in acid sulfate soil landscapes</i> (DER, 2015c) as per condition 7-2.</p> <p>For the scope of the activities under the assessment of this works approval, the potential risks would involve the crushing, screening and stockpiling of any potential ASS material and handling of ASS material during this process. The Surface Water Management Plan (SWMP), required by condition 8-2 of MS1180 includes measures that will manage against ASS risk during these activities. This includes the requirements below:</p> <ul style="list-style-type: none"> <li>• stockpiles identified to be ASS contaminated to be located on a crushed limestone 300 mm thick layer with a bunded guard of 150 mm high and will be managed in accordance with CEMP Erosion, Sediment and Surface Water Management Protocol;</li> <li>• neutralising and treatment of any stockpiles that may contain ASS;</li> <li>• ASS can be stockpiled for up to 70 hours before soil must be treated;</li> <li>• capture and management of leachate, treatment of stockpile with lime to neutralise material that will be stockpiled for longer than 70 hours; and</li> <li>• restrictions on the re-use of treated ASS material to have a field soil pH of +/-0.5 when compared to field soil pH naturally occurring in background levels.</li> </ul> <p>Given that the locations of the proposed crushing and screening activities are outside the ASS risk areas, the risk of direct disturbance of ASS is not considered significant.</p> |
| <p>Surface water</p> <p>(Conditions 8-1 to 8-7)</p>            | <p>Conditions of MS1180 require the implementation of the proposal to maintain the hydrological regimes and quality of surface water so that environmental values are protected.</p> <p>The confirmed Surface Water Management Plan (SWMP) required by condition 8-2 contains requirements regarding management of water from disturbed areas and stockpiles with the following controls:</p> <ul style="list-style-type: none"> <li>• construction of sedimentation controls such as batters and cut-off drains throughout site;</li> <li>• diverting clean surface water from upstream of the works;</li> <li>• use of sediment traps, silt fences and other control structures;</li> <li>• developing site specific Erosion and Sediment Control Plans for each site within the development area; <i>and</i></li> <li>• prepare stockpiles prior to rainfall or potential flood events.</li> </ul>   |



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|  | <p>Aspects of the SWMP also detail the management of hydrocarbon emissions that considered relevant in managing the proposed crushing and screening activities, such as requirements to manage spills during refueling activities. The SWMP includes controls relevant to the management of chemicals and hydrocarbons such as:</p> <ul style="list-style-type: none"> <li>• accidental spills prevented where possible and emergency response actions to remediate accidental spills;</li> <li>• maintain and keep spill kits in areas designated for refuelling activities;</li> <li>• proposed bunding and storage (110% containment) for fuels/chemicals;</li> <li>• containment bunding around vehicle servicing facilities, chemical/fuel storage areas; and</li> <li>• commitments that potentially contaminated stormwater (e.g. runoff which contains hydrocarbons) will not be discharged into the environment.</li> </ul> |
| <p>Greenhouse gas emissions<br/>(Conditions 3-1 to 3-11)</p> | <p>Conditions of MS1180 require the proponent to:</p> <ul style="list-style-type: none"> <li>• take measures to ensure that net greenhouse gas emissions do not exceed a series of tapering volumes of CO<sub>2-e</sub> tonnes, up until 1 July 2049 when net zero tonnes of CO<sub>2-e</sub> emissions must be achieved, as specified in conditions 3-1 and 3-2; and</li> <li>• not undertake the commencement of Ground Disturbing Activities until the CEO has confirmed in writing that the revised Greenhouse Gas Management Plan satisfies the requirements of conditions 3-3 and 3-4 which has since been submitted and approved.</li> </ul> <p>The proponent is required to continue implementing the most recent version of the Greenhouse Gas Management Plan until the emissions specified in condition 3-1 are achieved.</p>   |
| <p>Light management<br/>(Conditions 10-1 to 10-7)</p>        | <p>The conditions of MS1180 require the applicant to 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.</p> <p>The applicant is required to implement a Light Management Plan that the CEO has confirmed satisfies the requirements of condition 10-2.</p>  |

In accordance with DWER's *Guidance Statement: Setting Conditions* (DER, 2015b), conditions of a Part V licence must not be "...contrary to, or otherwise than in accordance with, an implementation agreement or decision under Part IV of the EP Act." Further, that conditions "will not unnecessarily duplicate requirements imposed on licensees directly by the EP Act or another written law."

In granting the works approval, the delegated officer has taken into consideration conditions applied under Part IV of the EP Act through MS1180, and DWER's *Guidance Statement: Setting Conditions* and determined that the following environmental factors are managed through the Ministerial Statement (MS1180) and therefore require no further regulation under the Part V licence:

- Flora and vegetation, including impacts from dust and changes to surface water quality and/or groundwater regimes;
- Terrestrial fauna, including impacts from dust, noise and vibration;
- Greenhouse gas emissions;
- Hydrogeological and surface water management;

- Groundwater protection;
- Acid sulfate soils; and
- Light management.

Due to the conditions applied through MS1180 and the requirements of the relevant management plans, the delegated officer has determined that duplication of controls to manage impacts associated with the proposed crushing and screening activities are not required within the conditions of this works approval.

The EPA's Assessment Report 1705 identified that there is a requirement for air emissions from the proposal to be regulated by the DWER under Part V of the EP Act on the provision that Part V regulation is not inconsistent with the Part IV conditions. In this regard, the assessment of crushing and screening activities as part of this works approval application has considered the risk of dust emissions as part of construction activities (specifically category 70 screening activities), the duration of these activities and the proposed controls.

### 3.2 Rock art significance and potential impacts

Murujuga (the Dampier Archipelago, including the Burrup Peninsula and surrounds) is a unique ecological and archaeological area containing one of the largest collections of Aboriginal engraved rock art (petroglyphs) in the world. The rock art is of continuing cultural, archaeological and spiritual significance for Aboriginal people and also has significant state, national and international heritage value.

The Western Australian Government is committed to the ongoing protection of Murujuga's rock art and is working in partnership with the Murujuga Aboriginal Corporation (MAC), representing the Traditional Custodians of Murujuga, to protect and manage this important area.

The department recognises the cultural importance and heritage value of rock art both internationally and locally and is committed to conducting further detailed scientific investigations and continuing the coordinated approach involving implementation of the Murujuga Rock Art Strategy (MRAS) and Murujuga Rock Art Monitoring Program (MRAMP).

The results from the monitoring program will identify relevant environmental quality indicators and define acceptable and unacceptable environmental quality conditions, therefore providing data for measuring and assessing environmental performance against environmental quality criteria.

### 3.3 Appeal under Part V of the EP Act (028/22)

Following the granting of works approval W6630/2021/1, appeals were lodged that opposed the conditions of the works approval on the basis that the conditions do not adequately protect the rock art in the surrounding environment which the appellants contended has significance at State, national and international level.

On 1 November 2023, the Minister determined to allow the appeal in part, with additional requirements imposed that clarified the use of dust control equipment, and introduced buffers from heritage sites to further reduce potential impacts from crushing and screening activities. The Minister determined that a minimum separation of 100m between crushing and screening operations and heritage sites was required noting that most dust from crushing and screening activities would be expected to fall within 100m of the source (Office of the Appeal Convenor 2023).

### 3.4 Exclusions

As discussed in section 2.2, the scope of this assessment is limited to category 70 crushing and screening activities only. Activities relating to the construction of the broader urea plant,

including associated crushing and screening activities (Category 12) at Site C and Site F, are regulated under separate approvals (W6875/2023/1 and Licence L9426/2024/1) granted in June 2024 and March 2024 respectively.

## 4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

### 4.1 Source-pathways and receptors

#### 4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

**Table 3: Proposed applicant controls**

| Emission - Potential pathway       | Sources  | Proposed controls  |
|------------------------------------|--|--|
| Dust –<br>Air/windborne<br>pathway | Crushing of generally graphophyte/ sand/ alluvium material, vehicle movements, dust lift-off from stockpiles and earthworks. | <ul style="list-style-type: none"> <li>1 x 9,000 litre water supply tank located onsite to supply water for dust suppression;</li> <li>A water cart will be available at the site for dust suppression during establishment of the crushing and screening plant and will be operated as required to wet stockpiles and prevent any visible dust from leaving the site;</li> <li>Dust suppression water used throughout the premises and for the operation of crushing and screening plant is not extracted from groundwater;</li> <li>Excavated material will be stockpiled to 5m in height near the mobile crushing and screening plant and a maximum of three stockpiles operated at any one time;</li> <li>Crushing and screening equipment will not be operated within 60m of cultural heritage sites;</li> <li>Water spray systems will be used as required to minimise the generation of dust at material transfer points, crusher and at the material stockpiles;</li> <li>Dust suppression sprays installed at material transfer locations on the jaw crusher, cone crushers, screen and product stacker;</li> <li>Partial enclosure of stacker track and cone crusher transfer points;</li> <li>A fogging system will be installed and operated at the premises;</li> <li>Chemical dust suppressants or water trucks utilised on</li> </ul> |

| Emission - Potential pathway    | Sources  | Proposed controls   |
|---------------------------------|--|---|
|                                 |  | <p>roads to minimise dust generation; and</p> <ul style="list-style-type: none"> <li>Vehicle speeds reduced where necessary to reduce dust liftoff.</li> </ul> <p>Implementation of the developed Air Quality Management Protocol, Portside Construction Environmental Management Plan (CEMP) and Construction Dust Management Procedure and which involve requirements for dust suppression (with water systems, water carts and chemical dust suppressants) and decrease of vehicle speeds to reduce dust generation.</p> <p>The Construction Dust Management Procedure and Portside CEMP include the installation of a dust monitor at the port (additional to the dust monitors located at Sites C and F) for continuous measurement of dust emissions associated with portside works. The monitor uses a telemetry network of 'near real-time' data using ETS Tp-2510 Dust Concentration Sensors to monitor PM<sub>10</sub> and PM<sub>2.5</sub> data as a 10min average µg/m<sup>3</sup> value.</p> <p>A mobile dust monitor will be installed on the premises between crushing and screening activities and heritage sites. The monitor will be relocated as required to avoid being impacted by construction works.</p> <p>A trigger value of 80 µg/m<sup>3</sup> will alert supervisory/ management staff to visually inspect the area and implement management actions including:</p> <ul style="list-style-type: none"> <li>increase to dust suppression activities;</li> <li>reducing work on site to only essential tasks, decreasing speed of plant and movement of equipment and potentially ceasing work during excessively high readings;</li> <li>stopping work if excessive high readings are obtained and the activities onsite are identified as contributing to the dust load;</li> <li>monitoring of levels until there is no longer an exceedance; and</li> <li>identification of high-risk weather conditions (faster winds / warmer temperature).</li> </ul> <p>A weather monitoring station is located at Site C which provides weather measurements to inform dust management. Weather monitoring is a requirement of L9426/2024/1.</p> |
| Noise – Air / windborne pathway | Crushing of material, vehicle movements, dust lift-off from stockpiles and earthworks. | <ul style="list-style-type: none"> <li>All plant will be equipped with exhaust mufflers from the Original Equipment Manufacturer (OEM) or systems meeting or exceeding the OEM specifications; and</li> <li>Works carried out during daylight hours.</li> </ul> <p>The Noise Management Protocol, required by conditions of MS1180 include following relevant measures:</p> <ul style="list-style-type: none"> <li>Equipment fitted with appropriate noise reduction devices;</li> <li>Regularly inspect, maintain and replace mobile equipment; and</li> </ul>   |



| Emission - Potential pathway   | Sources  | Proposed controls  |
|--|--|--|
|  |  | <ul style="list-style-type: none"> <li>Broadband reversing alarms installed on mobile plant.</li> </ul>  |
| Sediment laden stormwater <sup>1</sup> – Overland run off  | Crushing and screening of material<br><br>Material stockpiles                        | <p>Earthen bund constructed around the plant area at the premises to prevent surface water ingress into the plant areas and prevents surface water runoff from crushing and screening plant and associated processed material stockpiles.</p> <p>Conditions of Ministerial Statement 1180 require management of surface water via the implementation of the Surface Water Management Plan.</p>   |
| Hydrocarbons <sup>1</sup> – Direct spill to land and contaminated surface/ stormwater and leachate | Screening and crushing plant<br><br>Refueling equipment<br><br>Machinery maintenance | <p>Implementation of the Hydrocarbons and Hazardous Substances Management Protocol (HHSMP) that include measures:</p> <ul style="list-style-type: none"> <li>Chemicals stored on or within a bunded structure;</li> <li>In the event of a spill, the spill will be contained using spill kits available, removed and soil contaminated by spills will be removed to an appropriate stockpile location for remediation;</li> <li>No vehicle or mobile plant refueling shall occur within 50m of a watercourse or intertidal zone.</li> <li>Servicing of mobile plant will be conducted within an earthen bunded area;</li> <li>All minor volumes of chemicals will be stored on or within a bunded structure with capacity 110% of largest container, or 25% of the total storage capacity of all containers (whichever is larger), impermeable walls and floor (soil floors are not sufficient) and roofed in accordance with <i>Australian Standard AS1940:2004 – The storage and handling of flammable and combustible liquids</i>;</li> <li>Chemicals, oily or contaminated products that are no longer required to be removed from site by licenced controlled waste contractor. Hazardous waste material and dangerous goods to be disposed of in accordance with the relevant legislation at approved and certified facilities;</li> <li>Drip trays will be placed under the fuel delivery vehicle, the plant / machinery being refuelled and any joins in fuel delivery hoses to capture any spills or leaks associated with the refuelling process.</li> </ul> <p>Conditions of Ministerial Statement 1180 require management of hydrocarbons under the implementation of the Surface Water Management Plan.</p> |
| Lighting – Air pathway   | Crushing and screening plant   | <p>Plant will only be operated during daylight hours.</p> <p>Lighting is managed under Part IV of the EP Act through implementation of the Light Management Plan.</p>  |

Note 1: Refer to Table 2 for the relevant requirements and management of specified emissions as part of Part IV assessment and conditioning under MS1180.

#### 4.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 4 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

**Table 4: Sensitive human and environmental receptors and distance from prescribed activity**

| Human receptors  | Distance from prescribed activity   |
|--|---|
| Neighboring industrial premises (zoned strategic industry City of Karratha Planning Scheme No.8) | Immediately adjacent to the Premises – Pilbara Port Authority administration (about 100m east) and Dampier Cargo Wharf (200m north)<br>King Bay Supply Base – 130m south<br>Business Park - 1.6km ESE<br>Woodside Energy (Pluto LNG) - 1.3km east<br>Yara Pilbara Fertiliser - 3km ESE  |
| Ngajarli (Deep Gorge) (recreational site)  | 4.5 km southeast of the boundary  |
| Hearson's Cove: a popular public recreation and fishing beach                                    | Approximately 5 km east of the premises boundary  |
| Dampier Townsite   | Approximately 5 km south-west of the premises boundary  |
| Karratha Townsite  | 13km SSE<br><b><i>Considering the distance of proposed category 70 activities to this receptor, the delegated officer considers that impacts to this receptor are not foreseeable and therefore is not further considered in the risk assessment.</i></b>   |
| Environmental receptors  | Distance from prescribed activity   |
| Murujuga National Park   | 2km east of the premises  |
| Aboriginal and other heritage sites  | Directly west of the premises boundary (between 10-50m) and about 65-70m from the proposed locations of the crushing and screening equipment.<br>Other sites >100m from the premises boundary (e.g. Site ID: 11818 – OMP-04-Engraving located 170m east.  |
| Threatened/Priority Fauna  | 27 conservation significant fauna species have been identified as being "known to occur" or are considered "likely to occur" within a 10km buffer of the Project area. This includes the Ghost Bat ( <i>Macroderma gigas</i> ), Northern Quoll ( <i>Dasyurus hallucatus</i> ) and Olive Python ( <i>Lialis olivaceus barroni</i> ).<br>32 migratory bird species are also known to, or likely to occur within the project area 10km buffer, of which five are listed as threatened species.<br>Another two bird species, the Bar-tailed Godwit (Baueri) ( <i>Limosa lapponica baueri</i> ) and Northern Siberian Bar-tailed Godwit ( <i>Limosa lapponica menzbieri</i> ), are also listed as threatened but are not considered to be migratory.<br><b><i>Due to the nature of the proposed activities in this assessment and regulation under MS1180, these receptors</i></b> |

|   |  |
|---|--|
|   | <b><i>are not further considered in the risk assessment.</i></b>   |
| Threatened/Priority Flora   | <p>Three priority species have been recorded within 5km of the project; <i>Terminalia supranitifolia</i> (Priority 3), <i>Stackhousia clementii</i> (Priority 3) and <i>Rhynchosia bungarensis</i> (Priority 4).</p> <p><b><i>Due to the nature of the proposed activities in this assessment and regulation under MS1180, these receptors are not further considered in the risk assessment.</i></b></p>  |
| Threatened Ecological Communities and Priority Ecological Communities | <p>Several priority ecological communities have been identified in the area. Priority 1 ecological communities exist within 5 km of the premise including the Burrup Peninsula rock pool and rock piles communities. The Burrup Peninsula rock pile communities consist of short-range endemic land snails.</p> <p><b><i>Due to the nature of the proposed activities in this assessment and regulation under MS1180, these receptors are not further considered in the risk assessment.</i></b></p>   |
| Marine waters (Mermaid Sounds/King Bay)                               | <p>The premises is situated &lt;100m from marine waters of Mermaid Sound and just north of King Bay. The waters of King Bay are afforded a high level of ecological protection with the exception of a one hectare area surrounding the Multiuser Brine Return Line outfall, where industry discharges occur in King Bay and the surrounding Mermaid Sound. These areas have been afforded a low level of ecological protection and moderate level of ecological protection respectively (DoE 2006).</p> <p>The Dampier Cargo Wharf and Dampier Liquids Berth are located directly west and north of the premises.</p> |
| Groundwater   | <p>There are no registered groundwater supply bores within 5km of the premises. Groundwater at the site is shallow, expected to be between 2-3 metres below ground level (mbgl).</p>   |

## 4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 4.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6946/2024/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015). The assessment considers both the construction and operational phases of the works.

**Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation**

| Risk events   |                    |   |   |                        | Risk rating <sup>1</sup>                           | Applicant controls sufficient? | Conditions <sup>2</sup> of works approval  | Justification for additional regulatory controls  |
|---|--------------------|---|---|------------------------|--|--------------------------------|--|---|
| Sources / activities  | Potential emission | Potential pathways and impact   | Receptors   | Applicant controls     | C = consequence<br>L = likelihood                  |                                |  |   |
| Construction  |                    |   |   |                        |  |                                |  |   |
| Placement of screen and associated equipment including vehicle movements (reversing beepers).<br><br>Construction of stormwater channels and stormwater sump. | Dust               | Air / windborne pathway causing impacts to health and amenity   | Neighboring industrial sites adjacent to premises<br><br>Residential receptors at Dampier Townsite 5.4km away<br><br>Recreational users of Ngajarli and Hearson's Cove (4.5km east) | Refer to Section 4.1.1 | C = Slight<br>L = Unlikely<br><b>Low Risk</b>      | Y                              | Condition 1  | Plant to be installed is mobile equipment and therefore minimal works are required for installation. Dust emissions during installation of the plant are likely to be limited to vehicle movements during mobilisation of plant and minor dust associated with construction of earthen stormwater bunds. Based on the nature of the works, emissions during construction are expected to be limited in scale and duration. The delegated officer considers that the controls proposed by the applicant (described below and in section 4.1.1) are sufficient for managing short term dust emissions during plant installation and has conditioned controls on the works approval.   |
|   |                    | Air / windborne pathway and deposition of particulate matter on rock art causing erosion through abrasion | Petroglyphs – adjacent (west) of the premises boundary  |                        | C = Severe<br>L = Rare<br><b>High Risk</b>         |                                |  |   |
|   | Noise              | Air / windborne pathway causing impacts to health and amenity   | Neighboring industrial sites adjacent to premises<br><br>Residential receptors at Dampier Townsite 5.4km away<br><br>Recreational users of Ngajarli and Hearson's Cove (4.5km east) | Refer to Section 4.1.1 | C = Slight<br>L = Rare<br><b>Low Risk</b>          | Y                              | Condition 1  |   |
| Operation (including time-limited-operations operations)  |                    |   |   |                        |  |                                |  |   |
| Screening, crushing, unloading, loading and storage of material<br><br>Vehicle movements  | Dust               | Air / windborne pathway causing impacts to health and amenity   | Neighboring industrial sites adjacent to premises<br><br>Residential receptors at Dampier Townsite 5.4km away<br><br>Recreational users of Ngajarli and Hearson's Cove (4.5km east) | Refer to Section 4.1.1 | C = Moderate<br>L = Unlikely<br><b>Medium Risk</b> | N                              | Condition 1 (Table 1): Installation of dust control equipment including dust sprays, partial covers on transfer chutes and fogging system.<br><br>Condition 7: Limits on number of plant to be operated<br><br>Condition 8 (Table 3): Plant to be operated >60 m from heritage sites;<br><br>Condition 8 (Table 3): Dust sprays and dust suppression (including fogging system)<br><br>Condition 9: Production | The applicant's proposed controls have been conditioned in the works approval to reduce and manage dust emissions. These include dust suppression requirements throughout the crushing and screening process, as well as dust monitoring and management action requirements in the event of dust events. The delegated officer notes that visitors to the nearby area, for cultural and/or recreational purposes, are not expected to be exposed to inhalable particulate concentrations beyond occupational exposure standards (Safe Work Australia, 2022) even during upset conditions. Further, the delegated officer considers that due to the distance to nearest recreational and residential receptors and type of potential exposure, no additional regulatory controls are required beyond those conditioned.<br><br>The delegated officer also considered the potential for dust emissions impacting workers within the Pilbara Port Authority leases during summer prevailing winds (e.g. nearby office accommodations to the east). Noting the duration for potential exposure to dust emissions is likely to be short term, the risk of health impacts from dust emissions are considered to be low, however, the delegated officer acknowledges that there may be some impacts from nuisance dust impacting amenity of people accessing the offices. The delegated officer determined that the distance to receptors (100m) and potential for receptors to be impacted by nuisance dust during summer prevailing winds warrants additional control. On this basis, an additional portable dust monitor is required on the eastern boundary of the premises between the crushing and screening plant and the nearest human receptor (offices). The same dust management triggers will apply to ensure that management actions can be implemented in response to high dust events that may occur during summer prevailing winds.<br><br>Noting that prevailing winds during the expected period of operation are generally from the east, west or north (Figure 3), and that the human receptors on the Dampier Cargo Wharf are located to the north, the Delegated Officer did not |



| Risk events  |  |   |   |  | Risk rating <sup>1</sup><br>C = consequence<br>L = likelihood   | Applicant controls sufficient? | Conditions <sup>2</sup> of works approval  | Justification for additional regulatory controls   |
|--|--|---|---|--|---|--------------------------------|--|--|
| Sources / activities   | Potential emission   | Potential pathways and impact   | Receptors   | Applicant controls   |   |                                |  |  |
|  |  |   |   |  |   |                                | limits<br><br>Condition 10: Dust management  | consider it necessary to require an additional monitor relating to this receptor. Site dust controls, including application of dust suppression and operation of the fogging canon, are considered sufficient for managing this risk. The Applicant is required to record any complaints received in relation to the crushing and screening activities and report this information, in addition to the actions taken, to the Department.   |
|  |  | Air / windborne pathway and deposition of particulate matter on rock art causing erosion through abrasion | Petroglyphs – adjacent (west) of the premises boundary  |  | C = Severe<br>L = Rare<br><b>High Risk</b>  | Y                              | Condition 11, 12 and 13: Dust monitoring and management<br><b><u>Condition 13: Portable dust monitoring</u></b><br><br>Conditions 14 and 15: Trigger exceedance investigation and response<br><br>Time limited operations authorised for three months.   | <p>The delegated officer has determined the consequence of this impact to be <b>severe</b>, the highest rating, in recognition of the high conservation and cultural value of the rock art, as well as the uncertainty of the impacts caused by dust emissions to rock art and in the absence of interim guidelines from the MRAMP.</p> <p>The delegated officer notes that works are only expected to occur for a short period between the months of November and December 2024. Prevailing winds are predominantly from the west / northwest during the period, directing dust away from nearest heritage sites situated to the west of the premises. The delegated officer notes that heritage sites to the east of the premises are situated greater than 100m away.</p> <p>Based on the very short-term nature of the works (less than three months), prevailing wind direction, the low quantity of material to be processed (less than 50,000 tonnes), the material composition which is non-acidic, local and regional ambient air setting and the proposed controls for dust emissions, the delegated officer determined that the likelihood rating for the risk event is <b>rare</b>.</p> <p>Dust management controls proposed by the applicant are consistent with measures to be implemented under L9426/2024/1 and W6875/2024/1 and as outlined in Section 4.1.1. Noting topographical constraints will reduce the buffer between crushing/screening &amp; heritage sites to the west from 100m to 60m, the Applicant proposes to install and operate a fogging system as an additional measure for mitigating dust. The fogging system will provide further removal of airborne dust particles surrounding the plant.</p> <p>A portable real-time dust monitoring station will be installed between crushing and screening equipment and the heritage receptors and can be relocated in response to the location of the crushing and screening plant, or to avoid impact from construction activities. A requirement to monitor dust using the proposed monitor is included in the conditions of the works approval. Dust management triggers are also set to ensure that management response is taken in the event of high dust events. The delegated officer considers that the above measures, combined with applicant controls outlined in section 4.1.1, and the restriction of activities to a maximum of 90 days (under time limited operation) are appropriate for managing dust risks during the short-term operation of the mobile crushing and screening plant despite the reduced buffer to heritage sites.</p> <p>In addition to the above, the delegated officer considers the controls specified within the Flora Management Plan (as required by conditions of MS1180) and the Cultural Heritage Management Plan (as required by conditions of MS1180) are likely to also mitigate the impact of dust emissions to rock art. Condition 9.2(3) of MS1180 also includes provisions for traditional owners to observe any ground disturbing activities.</p> |
|  | Noise  | Air / windborne pathway causing impacts to health and amenity   | Neighboring industrial sites adjacent to premises<br><br>Residential receptors at Dampier Townsite 5.4km away<br><br>Recreational users of Ngajarli and Hearson's Cove (4.5km east) | Refer to Section 4.1.1   | C = Slight<br>L = Rare<br><b>Low Risk</b>   | Y                              | Condition 1 (Table 1) plant installed with exhaust mufflers<br><br>Condition 7 (Table 3): plant operated with exhaust mufflers   | Noting the existing industrial landscape and distance to the nearest recreational receptors, the delegated officer considers the controls proposed by the applicant to install and operate the plant with exhaust mufflers are suitable and have been conditioned as ongoing requirements in the licence. It is noted that the EP Noise Regulations also apply to the operation of the plant. Given the distance to residential receptors, the Delegated Officer considers that residential receptors are unlikely to be impacted by the crushing and screening activities.  |
|  | Sediment laden stormwater  | Overland runoff potentially causing ecosystem disturbance or impacting surface water quality              | Marine waters of King Bay/ Mermaid Sound <100m west.  | Refer to Section 4.1.1   |   |                                | Condition 1 (Table 1) requiring construction of stormwater bunds<br><br>Condition 7 (Table 3): plants to be only operated within bunding   | <p>The delegated officer considers that the applicant’s proposed controls are sufficient for managing sediment laden surface water / stormwater associated with operation of the crushing and screening plant and run-off from stockpiles. The requirement to construct stormwater bunding and ensure that crushing and screening plant is operated within the installed bunding has been conditioned on the works approval.</p> <p>The delegated officer also notes other controls required under conditions of MS1180 and the relevant management plans, specifically the Surface Water Management Plan, and considers that these requirements provide sufficient confidence that stormwater will be adequately managed, and that no additional regulatory controls are required.</p>  |
| Hydrocarbons (associated with operational activities – equipment, machinery, generators) | Overland runoff potentially causing ecosystem disturbance or impacting surface water quality | Marine waters of King Bay/ Mermaid Sound <100m west.  | Refer to Section 4.1.1  | Condition 1 (Table 1) requiring construction of stormwater bunds<br><br>Condition 7 (Table 3): plants to be only operated within bunding |   |                                | <p>The delegated officer notes that MS1180 requires the applicant to develop and implement a Surface Water Management Plan that includes requirements to manage hydrocarbons, implement spill response measures and manage risks associated with the potential contamination of surface water from hydrocarbons at the premises.</p> <p>The delegated officer considers that these requirements under MS1180 are sufficient and consequently has not conditioned additional regulatory controls within the works approval.</p> <p>It is noted that the crushing and screening plant will operate within areas surrounding by earthen bunding and this bunding will also mitigate impacts associated with potentially hydrocarbon contaminated surface water.</p> |  |
|  | Leaching through soil profile causing groundwater contamination                              | Groundwater 2 - 3 mbgl  |   | N/A  | The delegated officer has determined that the requirements under the Surface Water Management Plan (as required by MS1180) that specify controls for refueling activities and spill response are adequate to manage the risk of hydrocarbon spills to receptors and that duplication of controls is not required. |                                |  |  |

| Risk events          |   |   |  |                        | Risk rating <sup>1</sup><br>C = consequence<br>L = likelihood | Applicant controls sufficient? | Conditions <sup>2</sup> of works approval | Justification for additional regulatory controls  |
|----------------------|---|---|--|------------------------|---|--------------------------------|---|---|
| Sources / activities | Potential emission                          | Potential pathways and impact   | Receptors  | Applicant controls     |   |                                |   |   |
|                      | Leachate from disturbed acid sulphate soils | Overland transport potentially causing ecosystem disturbance or impacting surface water quality | Marine waters of King Bay/ Mermaid Sound <100m west. | Refer to Section 4.1.1 |   |                                | N/A                                       | The premises is located in an area considered to have a low risk of acid sulfate soils. The delegated officer has determined that requirements under MS1180, and especially via the Surface Water Management Plan (MS1180 condition 7-1, 7-2) that requires the investigation of acid sulfate soils and subsequent management requirements (as specified in Table 2) are sufficient for managing the risk of acid sulfate soils during crushing and screening activities. Consequently, no additional regulatory controls will be conditioned under this works approval.  |
|                      |   | Leaching through soil profile causing groundwater contamination                                 | Groundwater 2 - 3 mbgl                               |                        |   |                                |   |   |
|                      | Light overspill                             | Air pathway impacting amenity of nearby recreational users (4.5km)                              | Neighboring industrial sites adjacent to premises    | Refer to Section 4.1.1 |   |                                | N/A                                       | The delegated officer has determined that additional regulatory controls are not required considering crushing and screening activities will only be undertaken during day light hours, and the applicant is required to implement the Light Management Plan (under MS1180) which considers impact of light overspill to nearby receptors such as fauna and human use of nearby Aboriginal Heritage sites. Furthermore, the delegated officer notes that there is sufficient separation to recreational areas (e.g. Deep Gorge located 4.5km east) that these receptors are unlikely to be impacted by lighting from the proposed crushing and screening plant. |
|                      |   | Air pathway causing disruption to fauna activity and behaviour                                  | Environmental receptors in King Bay                  |                        |   |                                |   |   |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

## 5. Consultation

Table 6 provides a summary of the consultation undertaken by the department. All stakeholders were notified of the proposal on 18 July 2024.

**Table 6: Consultation**

| Consultation method  | Comments received  | Department response  |
|--|--|--|
| Application advertised on the department's website               | No submissions received.   | N/A  |
| Department of Jobs, Tourism, Science and Innovation (JTSI)       | No comment provided.   | N/A  |
| Local Government Authority                                       | A summary of comments and the department's response is provided in Appendix 1.   |  |
| Pilbara Ports  |  |  |
| Department of Planning Lands and Heritage (DPLH)                 |  |  |
| Friends of Australian Rock Art (FARA)                            |  |  |
| Murujuga Aboriginal Corporation (MAC)                            | <p>MAC indicated that, in principle, there were no objections to the proposed works. Given the limitation in space, the location of works within a previously disturbed area, existing and historic operations in the vicinity of the sensitive sites and the environmental controls proposed for managing dust, MAC confirmed that a 60m buffer to heritage sites is sufficient in this instance.</p> <p>MAC recommended that additional criteria regarding compliance with buffer zones be included in sub-contractor audits to confirm that no-go-zones have been established and are maintained for the duration of the works.</p> | <p>Comments regarding the proposed separation to heritage sites is noted.</p> <p>The Applicant advised that sub-contractor audits will include compliance criteria to ensure that the works are not conducted within the 60m buffer area. Conditions within the works approval also require that screening activities take place outside the 60m buffer.</p> |
| The Save Our Songlines group                                     | No comment provided.   | N/A  |
| Applicant was provided with draft documents on 25 September 2024 | The Applicant did not provide any comment relating to the nature of the conditions or content of the Decision Report.  | N/A  |

## 6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

This assessment report has considered environmental risks associated with both the construction and operational phases of the proposal. As discussed in section 2.2.2, the applicant has stated that crushing and screening will only occur for a short period (between November and December 2024), up to and until 50,000 tonnes of material has been processed. On this basis, the delegated officer has authorised a three-month period of time limited operations during which time it is expected that the full scope of works can be completed. Noting that no more than 50,000 tonnes of material will be processed, ongoing operation of the crushing and screening plant is not expected beyond the time limited operation phase, and an application for registration is not expected to be submitted by the applicant. Should additional crushing and screening be required (i.e. more than 50,000 tonnes) within the specified annual period, the application of Category 70 may need to be reconsidered and a registration may no longer be an appropriate operational regulatory instrument.



## References

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10. Perdaman Chemical and Fertilisers Pty Ltd (Perdaman) 2022a, *Fauna Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
11. Perdaman 2022b, *Flora Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
12. Perdaman 2022c, *Greenhouse Gas Emissions Management Plan, Perdaman Urea Project, Western Australia*.
13. Perdaman 2022d, *Light Management Plan, Perdaman Urea Project, Burrup Peninsula, Western Australia*.
14. Perdaman 2022e, *Surface Water Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
15. Perdaman 2022f, *Threatened Species Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
16. Perdaman 2023a, *Acid Sulfate Soil Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
17. Perdaman 2023b, *Construction Environmental Management Plan for Port of Dampier (Portside CEMP)*.
18. Perdaman 2023c, *Construction Environmental Management Plan Appendix J Air Quality Management Protocol*.
19. Perdaman 2023d, *Construction Environmental Management Plan Appendix K Noise Management Protocol*.
20. Perdaman 2023e, *Construction Dust Management Protocol*.
21. Perdaman 2023f, *Cultural Heritage Management Plan 2021– Project Ceres*, Perth, Western Australia.
22. Safe Work Australia 2022, *Workplace Exposure Standards for Airborne Contaminants*.

23. Smith B, Black J, Hœlé S, Ferland M, Differy S, Neumann J, Geisler T 2022, The Impact of Industrial Pollution on the Rock Art of Murujuga, Western Australia, *Rock Art Research*, Vol 39, pp 3-14

## Appendix 1: Summary of stakeholder comments on the application

| Stakeholder                                   | Summary of stakeholder's comment  | Department's response   |
|---|---|---|
| Local Government Authority (City of Karratha) | City of Karratha sought clarification regarding additional management measures for dust suppression when winds exceed 40kmph.   | <p>The Applicant advised that additional dust mitigation measures which may be considered during high winds (over 40km/hr) include:</p> <ul style="list-style-type: none"> <li>Increased water loading activity across site, or target areas as defined by dust concentrations at receiving monitoring locations. This is done either by increasing conditioning of material, increase watercart operations on dust generating sites and/or targeting/planning watercart use to coincide with construction/earthworks activities.</li> <li>Changing the water fogger droplet size.</li> <li>Decreasing the speed of plant.</li> </ul> <p>If excessively high readings are obtained and are perceived to be the result of works, then a stop work will be issued. The port dust monitor will be monitored until levels drop back below threshold trigger levels.</p> <p>Conditions have been included on the works approval reflective of these commitments.</p> |
|   | The City raised potential issues with mosquito breeding in storm water collection ponds if vegetation is not kept under control.  | The Portside CEMP states that artificial water sources that could breed pests will be avoided. According to the Portside CEMP, pooled water will be inspected/assessed following significant rainfall events and if required, be removed or pest treatment applied. The Fauna Management Plan developed under MS1180 also includes specifications for managing pests.   |
|   | It was confirmed that no planning approval is required as the premises is located with the Pilbara Ports Authority lease area.  | Noted.  |
| Pilbara Ports                                 | Pilbara Ports noted that the Applicant's EPC contractor will be operating under their own Construction Environmental Management Plan (CEMP) which will be reviewed and approved by Pilbara Ports. | Noted.  |

| Stakeholder | Summary of stakeholder's comment  | Department's response  |
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|             | <p>The proposed location for the dust monitoring station is outside of the Applicant's Pilbara Ports issued Licenced Area and limited detail has been provided regarding the design, construction, operation (including access) and maintenance of the dust monitoring equipment. Pilbara Ports also notes that the proposed location for the monitor is within an area that contains known Aboriginal heritage values and it is unclear whether these values would be impacted by the proposed monitor. Pilbara Ports requested further detail regarding the design and operation of the dust monitoring equipment and the potential impacts to Aboriginal heritage values that exist in the area.</p>                     | <p>The Applicant has advised that the dust monitor will be located within the lease boundary (refer to Schedule 1 of Works Approval W6946/2024/1). A mobile dust monitor will be utilised and positioned between crushing and screening equipment and heritage sites. The works approval requires that that dust monitor should be located at an appropriate location between the operating plant and sensitive receptors with consideration for prevailing winds.</p>   |
|             | <p>It was raised that the proposed dust monitoring equipment is located upwind of the proposed crushing and screening operations during prevailing summer winds. The monitoring equipment does not consider the dust impacting Pilbara Ports operational areas and office accommodation at the Port of Dampier located east (downwind) of the premises that would represent the nearest human related sensitive receptor when summer winds are experienced. Pilbara Ports requested that further consideration is given to the location of the dust monitor to ensure that it is sited in a located that is more appropriate for monitoring dust using the source-pathway-receptor model and safeguarding human health.</p> | <p>As discussed in Table 5, the delegated officer acknowledged the potential for nuisance dust impacts. Consequently, conditions of the works approval require an additional mobile dust monitor to be located on the eastern side of the premises between crushing and screening equipment and the Pilbara Ports administration building. The same dust triggers and management response actions will apply to ensure dust is managed to minimise impacts to receptors.</p>   |
|             | <p>It was noted that documents submitted in the Application refer to previous decisions by the Minister regarding a separation of 100m from heritage sites but that the proposed activities will occur within this buffer area.</p>   | <p>As discussed in Table 5, the delegated officer acknowledges that site constraints limit the ability for the Applicant to maintain a 100m buffer distance between crushing and screening activities and heritage sites. Installation of a 100m buffer distance was the result of an appeal against W6630/2021/1 which relates to other crushing activities being undertaken by the Applicant under Category 12 of the EP Regulations.</p> <p>The delegated officer has considered controls proposed by the Applicant for managing dust emissions which includes the installation and operation of a fogging canon. This is an additional dust control to those applied to the Applicant's other crushing and screening (Category 12) operations regulated under L9426/2024/1 (previously W6630/2021/1). In determining risk, the delegated officer has also had regard for the nature and scale of the work noting the limited throughput of 50,000 tonnes per annum and short duration of works (3 months). MAC was also consulted in relation to the proposal (refer to Table 6) and indicated that the proposed heritage separation distance of 60m is sufficient in this instance (considering site limitations, historical uses and controls proposed by the Applicant for managing dust). The delegated officer determined that dust emissions from the premises could be sufficiently managed and has imposed conditions on the works approval requiring implementation of dust controls.</p> |

| Stakeholder | Summary of stakeholder's comment   | Department's response   |
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| DPLH        | DPLH advised that a review of the Register of Places and Objects, as well as the DPLH Database, concluded that the proposed works area intersects with the actual boundary of Aboriginal Site BSC-14 Engraving (ID 19834) and that approvals under the <i>Aboriginal Heritage Act 1972</i> (AHA) are required. It was noted that the Section 18 Consent (MIN 2021-0354) does not include the land identified in the application, being Part Lot 3003 on Plan 421422.   | Information provided by the Applicant confirmed that the Site ID 19834 was salvaged and relocated in 2003 and is therefore no longer present on the premises.   |
|             | DPLH noted that a Statement of Intent has been entered into between Murujuga Aboriginal Corporation (MAC) and the State Government that commits the State Government and MAC to negotiating the terms of a Strategic Head Agreement (SHA) in support of the World Heritage Nomination of the Murujuga Cultural Landscape. The SHA will act as a framework for engagement between the MAC, the State Government and industry partners on matters relating to the Murujuga Cultural Landscape. The SHA will be negotiated based on the guiding principles derived from the United Nations Declaration on the Rights of Indigenous People, providing a framework for the parties to enter into negotiations, in good faith, for the purpose of engagement on all matters regarding Murujuga country.<br><br>In recognition of the above, DPLH recommended that ongoing consultation be undertaken with Murujuga Aboriginal Corporation (MAC) to allow for best practice management of the Aboriginal heritage extant in the vicinity of the current National Heritage Listed and World Heritage Listing nominated place. All reasonable steps should also be taken to comply with the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) by avoiding all and any impacts on the heritage values of the Dampier Archipelago (including Burrup Peninsula) National Heritage Listed place. | Noted. The delegated officer consulted directly with MAC seeking comment on the application which have been considered in its determination of this works approval. The delegated officer also notes ongoing requirements for consultation with MAC under MS 1180 in relation to the review and implementation of various management plans developed under the Ministerial conditions.  |
| FARA        | The submission queried the ability for the Applicant to have commenced construction works prior to relevant approvals being sought.  | Section 3 describes the various approvals that have been issued in relation to Project Ceres. This includes a range of approvals granted under Parts IV and V of the EP Act, <i>Aboriginal Heritage Act 1972</i> and the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> .<br><br>As outlined in the <i>Guideline: Industry Regulation Guide to Licensing</i> (DWER 2019), subject to any other approvals or restrictions (including but not limited to native vegetation clearing, and state or local government planning approvals) site preparation works can be undertaken without a works approval under Part V of the EP Act. Site preparation works include clearing, leveling and construction of access roads, construction of facilities not part of the prescribe premises activities such as car parks and office buildings, and the establishment of hardstands areas for use in construction works. It should be noted that the Department does not guarantee that a works approval or licence will be approved for prescribed activities even if |



| Stakeholder | Summary of stakeholder's comment  | Department's response   |
|-------------|---|---|
|             |   | substantial or costly preparation works have been undertaken.   |
|             | A number of matters were raised that are not directly related to the works approval application. These include queries regarding the processes for applying State and Federal funding to Project Ceres, and taxes and royalty payments applicable to Project Ceres. | These matters are considered to be outside the scope of the assessment under Part V of the EP Act.  |
|             | The submission queried the location of Project Ceres suggesting that Maitland Industrial Estate is a more appropriate location.   | The Department's risk-based assessment undertaken for the Works Approval is limited to assessing the impact of emissions and discharges from prescribed premises under Schedule 1 of the <i>Environmental Protection Regulations 1987</i> . The location of the broader Project Ceres is not within the scope of this assessment. The delegated officer notes that the location of Project Ceres was considered under Part IV of the EP Act and authorised under MS1180. While the specific location of the project is not the subject of assessment under Part V of the EP Act, the Department's assessment does consider the location of plant in relation to sensitive receptors for context to determine the risk of emissions and apply suitable regulatory controls to manage those risks.  |
|             | The submission sought clarification on conditions imposed relating to rehabilitation of the landscape following the proposal's end of life.   | Decommissioning and rehabilitation of the premises following end of life is managed through conditions 13-1 to 13-4 of MS1180 which require the Applicant to prepare and implement a Decommissioning and Rehabilitation Plan. The delegated officer notes that conditions also include provisions for consultation with MAC and the Department of Biodiversity, Conservation and Attractions throughout development and review of the Plan.<br><br>Contamination of land within the premises boundary is also managed under the <i>Contaminated Sites Act 2003</i> and may include investigation and remediation of contaminated areas.   |
|             | Clarification was sought regarding the removal of rock art associated with Project Ceres. The submission also sought further information regarding compensation for Traditional Custodians for restricted access to adjacent heritage sites.                        | The Delegated Officer notes that the relocation of cultural heritage sites is managed under the Applicant's approval under section 18 of the <i>Aboriginal Heritage Act 1972</i> (AH Act), which authorises the disturbance of selected heritage sites. Under the section 18 approval, the Applicant is required to provide a written report to the Registrar of Aboriginal Sites advising the extent to which the project has impacted on all or any sites, including the level, effect and type or impact, and in the case of salvage works, details such as when and how the salvage took place, who was present and where the material was relocated. The data submitted to the Registrar is managed by the Department of Planning, Lands and Heritage (DPLH).<br><br>DPLH is the most appropriate contact for access to reported information regarding any salvage works conducted under the AH Act. The Delegated Officer also understands that should this report be yet to be submitted to DPLH (i.e. where salvage works are ongoing), information regarding |

| Stakeholder | Summary of stakeholder's comment  | Department's response  |
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|             |   | <p>salvage works can be sought direct from the Applicant or the Murujuga Aboriginal Corporation.</p> <p>The section 18 approval also specified that the Cultural Heritage Management Plan (as conditioned to be implemented under the MS1180) include a clear management strategy for the salvage of Aboriginal sites in consultation with MAC, and that these works are to be undertaken under the supervision of appropriate Traditional Owner monitors and a qualified archaeologist.</p>   |
|             | <p>Concern was raised regarding the impact of blasting activities on nearby rock art. The submission sought clarification on restrictions in place for blasting activities associated with construction activities such as laying concrete foundations and installing steel structural supports of the port storage facility.</p> <p>The submission also sought clarification on the reparation/compensation conditions that have been applied for damage to rock art by blasting activities (vibrations, fly rock and dust pollution).</p> | <p>This works approval application is limited to Category 70 (screening) activities associated with site preparation works being undertaken at the port facility. This excludes activities associated with extraction of material (including blasting) as these are outside the scope of Category 70 activities as described under the <i>Environmental Protection regulations 1987</i>. As outlined in Section 3.4, it also excludes emissions associated with construction of urea storage and handling infrastructure at the port relating to the broader Project Ceres authorised under W6875/2023/1.</p> <p>Impacts to cultural heritage have been considered under Part IV of the EP Act and are managed through MS1180 and the Cultural Heritage Management Plan. The Cultural Heritage Management Plan includes a number of measures for managing impacts to heritage sites from blasting such as:</p> <ul style="list-style-type: none"> <li>• utilising low percussion explosives and blast mats to minimise fly rock and ground vibration;</li> <li>• installing demarcations, buffers and barricades around heritage sites that overlap the lease boundary or are within 50m of the lease boundary;</li> <li>• requiring that pre-disturbance inspections are conducted by MAC nominated representatives where the lease overlies or abuts a heritage site or where activities occur within 50m of a heritage site to confirm that appropriate protection measures have been implemented (e.g. signage, buffers, fencing, etc.);</li> <li>• provisions for stop work in the immediate area due to heritage requirements enacted by MAC representatives.</li> <li>• provisions for supervision of ground disturbance activities by MAC representatives; and</li> <li>• requiring post-work inspections to be conducted to confirm that heritage sites have not been disturbed.</li> </ul> |

| Stakeholder | Summary of stakeholder's comment   | Department's response  |
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|             | The submission sought clarification on the consideration of emissions and discharges relating to the manufacturing, storage, handling and export of urea (e.g. urea dust and urea discharges to King Bay). | This works approval application is limited to Category 70 (screening) activities associated with site preparation works being undertaken at the port facility. No urea particles will be emitted as a result of these works. Emissions and discharges associated with the broader Project Ceres, including urea dust and discharge of urea on wastewater, have been considered under works approval W6875/2023/1 granted in June 2024. This works approval is currently subject to appeal. |