



Application for Licence

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

Licence Number	L9426/2024/1
Applicant	Perdaman Chemicals and Fertilisers Pty Ltd
ACN	121 263 741
File number	DER2024/000051
Premises	Project Ceres Legal description – Part of Lot 700 on Plan P411759 Part of Lot 3014 on Plan P042282 Part of Lot 3013 on Plan P042282 Part of Lot 701 on Plan P411760 Part of Lot 706 on Plan P411760 As defined by the premises maps attached to the issued licence and by the coordinates specified in Schedule 2 of the issued licence
Date of report	19 March 2024
Decision	Licence granted

MANAGER, PROCESS INDUSTRIES

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

Table of Contents

1. Decision summary	1
2. Scope of assessment	1
2.1 Regulatory framework	1
2.2 Application summary and overview of premises	1
2.2.1 Background	1
2.2.2 Works Approval W6630/2021/1	1
2.2.3 Increase to throughput	4
2.2.4 Operation	4
2.3 Premises environmental siting	5
2.3.1 Disturbance footprint	5
2.3.2 Detailed site investigations	7
2.3.3 Risk profile of dust generated from crushing and screening activities	7
2.3.4 Ambient air quality and regional influences	8
3. Legislative context and other approvals	9
3.1 Part IV of the EP Act	9
3.2 Rock art significance and potential impacts	14
3.3 Exclusions	14
4. Risk assessment	15
4.1 Source-pathways and receptors	15
4.1.1 Emissions and controls	15
4.2 Receptors	18
4.3 Risk ratings	22
5. Consultation	24
6. Conclusion	26
References	26
Appendix 1: Application validation summary	28
Appendix 2: Application submission summary	31
Figure 1: Perdaman Urea Project – Prescribed premises boundary	3
Figure 2: Proposed cut and fill locations for Site C	6
Figure 3: Proposed cut and fill locations for Site F	6
Figure 4: Wind roses of prevailing winds from Karratha Airport for summer and winter months	8
Figure 5: Distance to sensitive receptors, including recreational areas	20
Figure 6: Distance to industrial receptors	21

Table 1: Authorised equipment to operate within Site C and Site F	5
Table 2: Relevant Approvals and Tenure	9
Table 3: EP Act Part IV assessment relevant to the assessment of Category 12 activities	10
Table 4: Proposed applicant controls during operation of crushing and screening plant	15
Table 5: Sensitive human and environmental receptors and distance from prescribed activity	18
Table 6: Risk assessment of potential emissions and discharges from the premises during operation	22
Table 7: Consultation	24

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the operation of the premises as originally approved under works approval W6630/2021/1. It also considers operation of additional mobile plant and equipment to support an increase in the annual production rate from 450,000 tonnes per year to 850,000 tonnes per year. As a result of this assessment, licence L9426/2024/1 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 (Figure 1) approximately 9km north-east of Dampier. On 6 February 2024, the applicant submitted an application for a licence to the department under section 57 of the *Environmental Protection Act 1986* (EP Act). The application is in relation to crushing and screening activities at the premises only.

These premises activities relate to Category 12 (*Screening, etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated, 50,000 tonnes or more 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 licence L9426/2024/1. 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 licence L9426/2024/1.

The department notes that additional construction activities for the Project Ceres urea plant and associated infrastructure are currently under assessment via a separate works approval application (W6875/2023/1), submitted to the department on 7 November 2023. Activities under consideration with works approval W6875/2023/1 include Categories 31, 52, 58, 73 and 85.

2.2.1 Background

The crushing and screening activities proposed in this licence application, initially commenced under Works Approval W6630/2021/1, are to continue the construction of the broader Perdaman Urea Production facility – Project Ceres. These bulk earthworks will involve using the processed material to level the site in preparation for the construction of this facility and for pavement materials for site works. The materials being processed includes virgin material excavated from the Sites C and F (Figure 1) processed treated acid sulphate soil materials and sand dunes.

2.2.2 Works Approval W6630/2021/1

The associated works approval W6630/2021/1 that authorised the installation and time-limited operations of crushing and screening plant was granted on 14 July 2022 for a total design capacity of 450,000 tonnes per annum (tpa).

Appeal 028/22

Following the granting of the works approval, 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.

Environmental Compliance Report

Following construction and installation of the plant and equipment associated with the crushing and screening activities, the applicant submitted an Environmental Compliance Report (ECR), as required by condition 2 of the works approval. The Delegated Officer has determined that the evidence provided in the ECR met the requirements specified in the works approval and the applicant sufficiently installed the required infrastructure, to control dust emissions to the intent of the works approval conditions.

Time Limited Operations

Following the submission of the ECR, works approval W6630/2021/1 authorised the time limited operation of the crushing and screening plant. Time limited operations commenced in November 2023 and ceased in February 2024. The departments Incident and Complaint Management System does not contain any records of complaints or incidents associated with the time limited operation of the crushing and screening plant. This licence application and assessment considers the ongoing crushing and screening activities at the premises as commenced though W6630/2021/1.

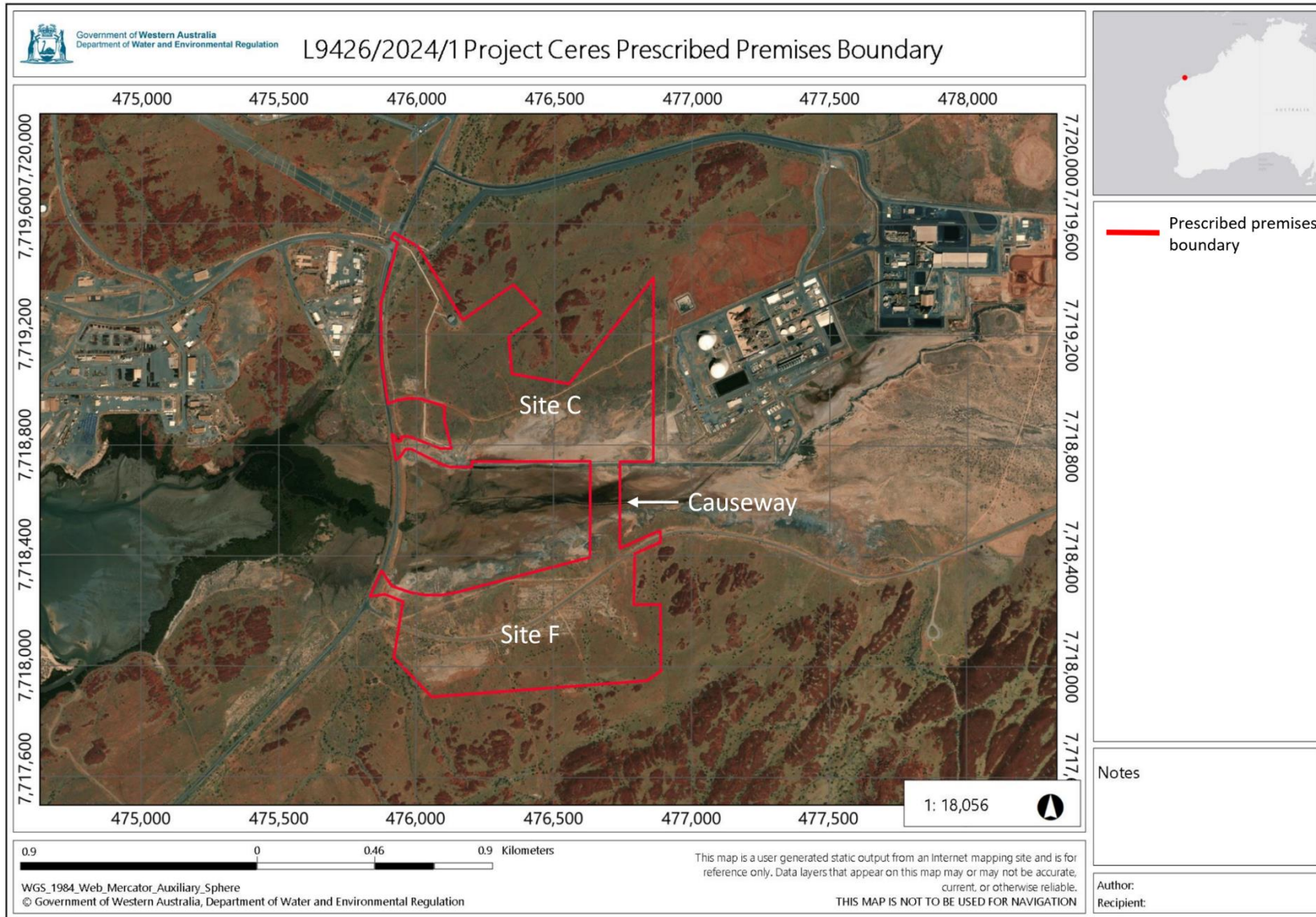


Figure 1: Perdaman Urea Project – Prescribed premises boundary

Licence: L9426/2024/1

2.2.3 Increase to throughput

The applicant has requested as part of the licence application an increase in throughput from 450,000 tpa (as authorised in the works approval) to 850,000 tpa.

The applicant has advised that the initial 450,000 tonnes assessed and authorised in W6630/2021/1 was based on calculations during the Front End Engineering Design stage of the project. Outcomes from additional geotechnical investigations following have determined that higher volumes of material will be required to achieve the desired elevation levels at the project resulting in the request for higher throughput for this licence.

The applicant has committed to not exceeding the revised throughput of 850,000 tpa.

2.2.4 Operation

Timeframes

The applicant has proposed that they will be operating at an average throughput rate of 5,000 t/day (cumulative from both site C and site F), with likely daily throughput tonnages varying from 2,500 to 7,500 tonnes per day. This compares to actual production rates during time limited operation (under W6630/2021/1) up to 8,200 t/day. Based on the total overall production limit of 850,000 tonnes per annual period, the proposed average screening rate equates to approximately 170 days of production across the annual period.

The proposed target end date for the crushing and screening activities is 30 December 2024, however the applicant has advised, that the material types may change, as well as quantities, providing some uncertainty for the exact end date of operations. The department notes that despite this uncertainty, the crushing and screening activities are to support the initial construction and site preparation activities on site and therefore will be comparatively short-term in duration.

Operation of crushing and screening plant

Consistent with the existing works approval, the applicant has advised that crushing and screening activities will only be carried out during daylight hours (therefore varying seasonally) and occur 7 days a week.

Within the proposed prescribed premises boundary, there will be two separate broad locations for crushing and screening activities - Site C and Site F. The applicant has advised that within these two areas, the crushing and screening equipment will be mobilised to, and utilised in various discrete locations, however will be restricted to:

- only occur within locations within the clearing boundary and
- in locations are greater than 100 m from heritage sites.

The plant will also 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. Controls involve water sprays on the plant at material transfer points, crusher and material stockpiles whenever materials are being processed and dust suppression via water trucks on the haul roads and open areas.

Infrastructure and equipment

The infrastructure and equipment that will be present at each site for crushing and screening activities are listed in Table 1 below. Noting that each site also has a 9,000-litre water tank for the purpose of supplying to dust suppression sprays on the plant.

Table 1: Authorised equipment to operate within Site C and Site F

Site C	Site F
<ul style="list-style-type: none"> • 1 x Jaw crusher; • 2 x Secondary cone crusher¹; • 1 x Incline screen; • 2 x Track mounted stacker; • 1 x Excavator (loading tool or equivalent); • 1 x Loader; • 1 x Dust suppression water tank, with a generator 	<ul style="list-style-type: none"> • 1 x Jaw crusher; • 1 x Secondary cone crusher; • 1 x Incline screen; • 1 x Track mounted stacker; • 1 x Excavator (loading tool or equivalent) • 1 x Loader; • 1 x Dust suppression water tank, with a generator

Note¹: The applicant has advised that the additional secondary cone crusher will be used during operations to produce structural fill.

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” 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 (Note: this will be added as **additional** infrastructure to Site C during structural fill processing);
- 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.

As outlined in Table 1, the additional cone crusher that will be used at Site C has been considered as part of the overall crushing and screening activity within Site C to appropriately capture the operations at the premises.

2.3 Premises environmental siting

2.3.1 Disturbance footprint

The applicant has advised that the proposed crushing and screening activities is to prepare the site for construction of the Perdaman Urea Facility (currently under assessment via works approval W6875/2023/1). Figure 2 and Figure 3 demonstrate the proposed cut and fill area and provides a general extent of where material will be sourced for crushing and screening purposes. The department notes the applicant’s approach is to avoid areas that have a high likelihood for acid sulfate soils (ASS).

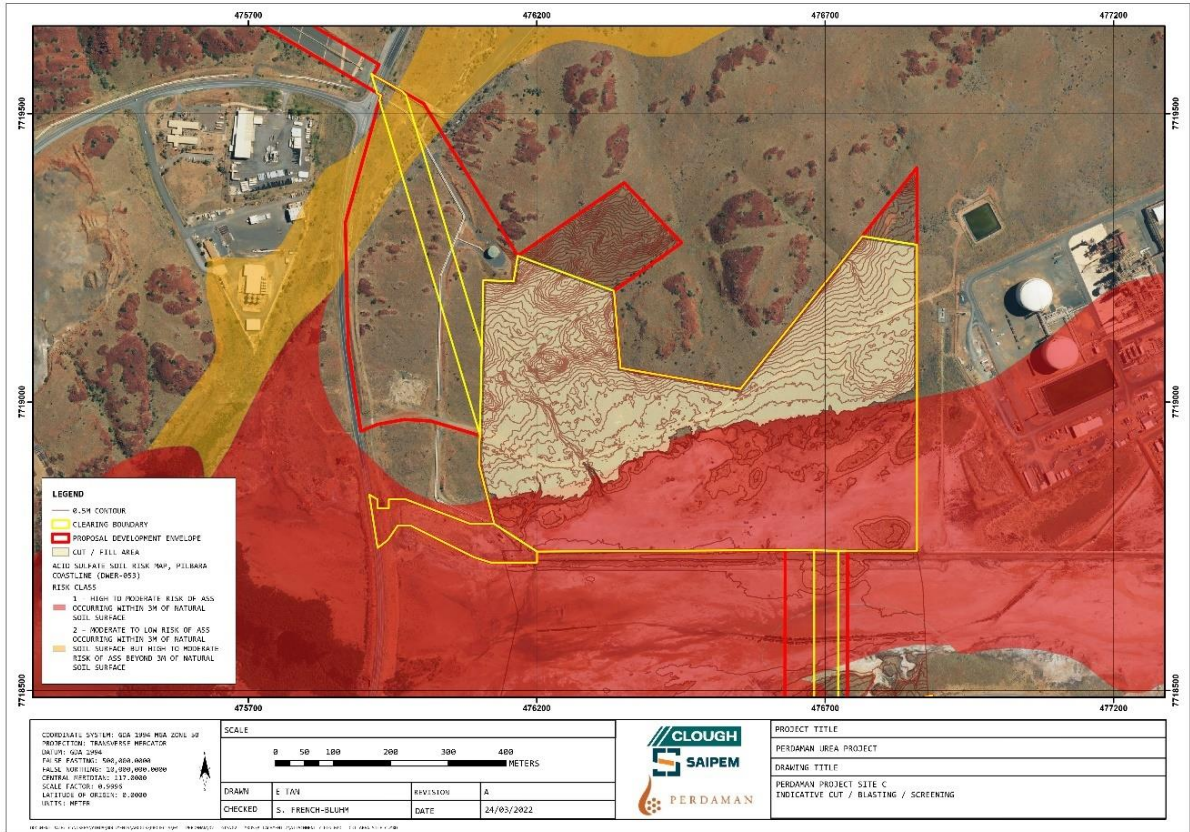


Figure 2: Proposed cut and fill locations for Site C

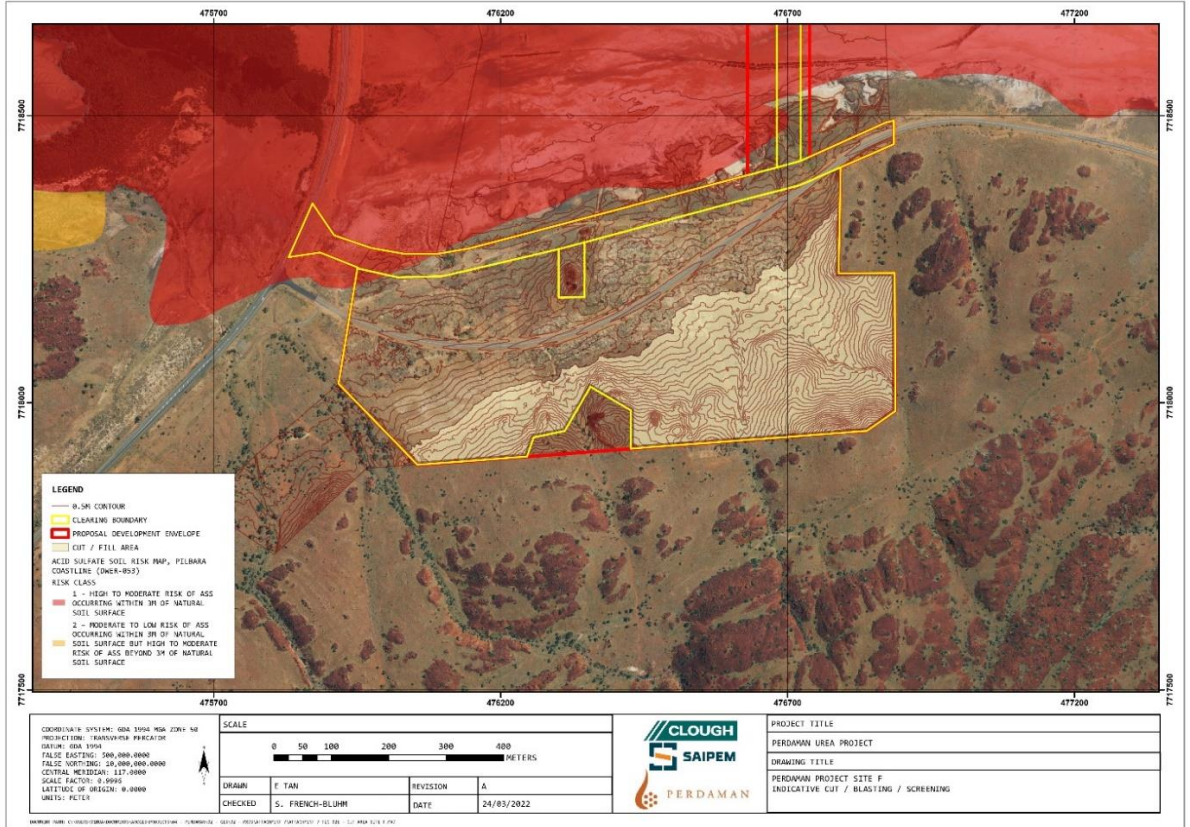


Figure 3: Proposed cut and fill locations for Site F

2.3.2 Detailed site investigations

As part of detailed site investigations for the premises, the applicant commissioned consultant Tetra Tech Coffey to undertake a baseline contamination assessment on the premises. The results of this investigation (Tetra Tech Coffey, 2022) are summarised below.

Groundwater

- detection of following major nutrients: Ammonia (two samples exceeded assessment criteria adopted at 3.64 mg/L and 9.19 mg/L), Nitrate, Nitrite, Total Nitrogen (TN), Total Kjeldahl Nitrogen (TKN) and Total Phosphorous (TP);
- detection of PFAS in sampled groundwater monitoring bores exceeded the PFAS NEMP interim marine 99% species protection limits and *Australian and New Zealand Water Quality Guidelines* (ANZG, 2018) Marine Water 95% LOSP toxicant default guideline values (DGVs);
- exceedances of soluble Cu, Fe, Mg and Zn; and
- out of 9 samples, 3 detected concentrations of total recoverable hydrocarbons (TRH) above assessment levels adopted.

Other chemicals of potential concern (CoPC) concentrations were below the laboratory limit of reporting. It was suggested that external or upgradient industries are possibly contributing to the sampling results obtained. Further it is noted that due to the depth to groundwater within Site C and Site F where construction activities will take place, interception of groundwater is considered unlikely.

Surface Water

Concentrations of TP, ammonia, TN and TKN were detected but below the assessment criteria adopted. PFAS compounds were detected in both surface water samples collected from within the supratidal zone and hydraulically down gradient from neighbouring industries.

The Delegated Officer notes that surface water and groundwater at the premises, including the baseline contamination assessment has been considered through the Surface Water Management Plan (as required by condition 8-2 of MS1180). This plan specifies ongoing surface water and groundwater monitoring and includes trigger and threshold criteria for determining the effectiveness of management actions implemented.

2.3.3 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).

Soil samples obtained during the baseline site investigation (section 2.3.2) from several locations across the proposed prescribed premises were taken at varying intervals of ground depth. Most CoPCs were not detected in soil samples apart from several exceedances of heavy metals (As, Cr, Cu, Pb, Ni, Zn).

PFAS compounds were not detected in most samples except three locations taken at ground surface level. Concentration of PFAS compounds detected at these three sites were low range detections (0.0004 mg/kg, 0.0003 mg/kg and 0.0003 mg/kg), and below the Health Investigation Level (commercial and industrial scenario) (HEPA, 2020) of 50 mg/kg and ecological direct exposure limit of 10 mg/kg. It is also noted that the three samples that had detected PFAS compounds do not occur within the proposed cut and fill areas (as shown in Figure 2 and 3

above).

During the appeal process for works approval W6630/2021/1 and summarised in the Appeal's Convenor Report (2023), the applicant advised that an investigation into contaminant¹ levels of dust found that concentrations were less than the respective Health investigation Levels and Health Screening Levels.

2.3.4 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 (Figure 4).



Figure 4: Wind roses of prevailing winds from Karratha Airport for summer and winter months

Air quality monitoring conducted by the applicant at three locations within Site C and F recorded level of dust deposition for baseline conditions at the proposed premises. Two of the three monitors reported detectable levels of 0.2 g/m²/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 within the proposed prescribed premises. In support of this application and requirements under other approvals (discussed in section 3.1 and Table 4), the applicant has proposed a dust monitoring program specific to construction activities. As part of the risk assessment, the Delegated Officer has considered the suitability of this program with regards to the location of the proposed monitors (as conditioned in the applicant's Construction Dust Management Procedure (Perdaman, 2023e)), 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 on the premises for the purpose of recording meteorological data.

¹ Contaminants listed and advised by applicant included: "all metals, PAH (polycyclic aromatic hydrocarbons), TRH (total recoverable hydrocarbons) and BTEXN (Benzene, Toluene, Ethylbenzene, and Xylenes), OC/OP (Organochlorine / Organophosphorus) pesticides, PCBs (Polychlorinated Biphenyls), ethanalamines and PFAS (Perfluoroalkyl and Polyfluoroalkyl substances)".

3. Legislative context and other approvals

Table 2 below provides a summary of relevant approvals for the premises and assessment.

Table 2: Relevant Approvals and Tenure

Legislation	Details
Development Approval	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. The DA specify that the applicant is required to implement dust management measures during construction and operation and plans under any other relevant legislation and/or approvals.
<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 W6630/2021/1 for Category 12 activities granted 14 July 2022
<i>Rights in Water and Irrigation Act 1914</i>	S17 Permit to Obstruct or Interfere (approval PMB209045(1)), granted 21 August 2023 for the construction of a causeway to provide access between Site C and Site F of the Perdaman Urea Project.

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.

MS 1180 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 3 details the key environmental factors that were considered during the Part IV assessment and conditioned through the MS 1180, including specific requirements from the various management plans, that are relevant to the scope of this licence application.

Table 3: EP Act Part IV assessment relevant to the assessment of Category 12 activities

Environmental factor	Summary of Part IV assessment related to this proposal
Air quality (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 Environmental Management Plan (CEMP) Air Quality Management Protocol (discussed further in Table 4) under their confirmed Cultural Heritage Management Plan (required by MS1180 conditions).</p>
Cultural heritage (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"> • avoid, where possible, and otherwise minimise direct and indirect impacts to social, cultural, heritage and archaeological values within and surrounding the development envelope; • allow ongoing Traditional Owner and Custodian access to enable traditional activities and connection to culturally significant areas within and surrounding the development area; and • avoid, where possible, and otherwise minimise direct and indirect impacts to visual and amenity impacts to social and cultural places and activities. <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"> • construction equipment will be checked to ensure is in good condition; • 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; • minimise vehicle speeds on and around work sites to be reduced where necessary to minimise dust emissions; • dust suppression techniques used on unsealed roads and access tracks; and • avoiding earthworks during high winds (>40km/hr). <p>Requirements found to be specific to impacts to rock art are:</p> <ul style="list-style-type: none"> • undertake monitoring during construction and commissioning ;and • adopt future environmental air quality objectives and standards derived from

	<p>the results of the Murujuga Rock Art Monitoring Program.</p> <p>Relevant requirements from this management plan to control noise emissions include:</p> <ul style="list-style-type: none"> 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. <p>The management plan also includes the following commitments to management impacts to cultural heritage sites and value:</p> <ul style="list-style-type: none"> lighting will be designed to reduce light spills. <p>Revisions of management plans for key environmental factors specified in MS 1180 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 (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"> the extent of native vegetation clearing within the development envelope shall not exceed 73.05ha; and 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 <p>and to minimise indirect impacts to native vegetation.</p> <p>It is noted that the proposed crushing and screening activities are to occur only with the approved clearing extent.</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"> visual monitoring for signs of vegetation stress from dust emissions; implementation of dust suppression on unsealed roads and access roads, when there is visible dust (except during topsoil stripping); implementation of controls relevant to dust in the CEMP Air Quality Management Protocol; and inspections regarding dust emissions. <p>During the assessment for works approval W6630/2021/1, 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 (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</p>

	<p>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, 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 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 licence application) do not include any further clearing.</p>
<p>Acid sulfate soils (ASS) (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. 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 licence, 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"> • 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; • neutralising and treatment of any stockpiles that may contain ASS; • ASS can be stockpiled for up to 70 hours before soil must be treated; • capture and management of leachate, treatment of stockpile with lime to neutralise material that will be stockpiled for longer than 70 hours; and • 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. <p>As shown in Figure 2 and Figure 3, given that the indicated cut and fill locations associated with 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 (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"> • construction of sedimentation controls such as batters and cut-off drains throughout site;

	<ul style="list-style-type: none"> • diverting clean surface water from upstream of the works; • use of sediment traps, silt fences and other control structures; • developing site specific Erosion and Sediment Control Plans for each site within the development area; <i>implemented around stockpiles to limit contaminated run-off;</i> • prepare stockpiles prior to rainfall or potential flood events; and • surface water monitoring points located around Site C and Site F to be sampled monthly (during construction works) for metals, nutrients and physical parameters. • Quarterly groundwater monitoring at locations within Site C and Site F for metals, nutrients, TRH, BTEX and physical parameters. <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"> • accidental spills prevented where possible and emergency response actions to remediate accidental spills; • maintain and keep spill kits in areas designated for refuelling activities; • proposed bunding and storage (110% containment) for fuels/chemicals; • containment bunding around vehicle servicing facilities, chemical/fuel storage areas; and • commitments that potentially contaminated stormwater (e.g. runoff which contains hydrocarbons) will not be discharged into the environment.
<p>Greenhouse gas emissions (Conditions 3-1 to 3-11)</p>	<p>Conditions of MS1180 require the proponent to:</p> <ul style="list-style-type: none"> • take measures to ensure that net greenhouse gas emissions do not exceed a series of tapering volumes of CO_{2-e} tonnes, up until 1 July 2049 when net zero tonnes of CO_{2-e} emissions must be achieved, as specified in conditions 3-1 and 3-2; and • 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. <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 (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 licence, 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 MS 1180 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 licence.

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 licence application has considered the risk of dust emissions as part of construction activities (specifically category 12 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 Exclusions

As discussed in section 2.2, the scope of this assessment is limited to category 12 screening activities only. Activities relating to the construction of the broader urea plant are the subject of a separate works approval application (W6875/2023/1), currently under assessment by the department.

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 4. The table also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 4: Proposed applicant controls during operation of crushing and screening plant

Emission	Sources	Potential pathways	Proposed controls
Operation			
Dust	Crushing and screening vehicle movements, lift off from stockpiles and earthworks	Air / windborne pathway	<p><u>Proposed operational controls:</u></p> <ul style="list-style-type: none"> Utilisation of developed Construction Dust Management Procedure; 4 x 60,000 litre water supply tanks, 3 x 40,000 litre dust suppression trucks and 1 x 8 wheel dust suppression truck located onsite; Water carts 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; Dust suppression water used throughout the premises and for the operation of crushing and screening plant is not extracted from groundwater but rather potable water is carted on site for this purpose; Excavated material will be stockpiled to 5m in height near the mobile crushing and screening plant and a maximum of three stockpiles at each site (6 in total at premises); Crushing and screening equipment will not be operated within 100m of cultural heritage sites; Water systems will be used as required to minimise the generation of dust at material transfer points, crusher and at the material stockpiles; Dust suppression sprays installed at material transfer locations on the jaw crusher, cone crushers, triple deck screen and product

Emission	Sources	Potential pathways	Proposed controls
			<p>stackers;</p> <ul style="list-style-type: none"> • Partial enclosure of stacker track and cone crusher transfer points; • Chemical dust suppressants or water trucks utilised on roads to minimise dust generation; • Vehicle speeds reduced where necessary to reduce dust liftoff; <p><u>Controls as required by other plans:</u></p> <p>Implementation of the CEMP Air Quality Management Protocol which involves requirements for dust suppression (with water systems, water carts and chemical dust suppressants) and decrease of vehicle speeds to reduce dust generation.</p> <p>Preparation and implementation of the CEMP Construction Dust Management Procedure (required by the CEMP Air Quality Management Protocol) that includes measures conditioned in works approval W6630/2021/1 and the requirements for dust monitoring:</p> <ul style="list-style-type: none"> • 6 dust deposition monitoring gauges (installed) located near the sensitive receptors within the prescribed premises; • Installation of 4 dust monitors (a telemetry network of 'near real-time' data using ETS Tp-2510 Dust Concentration Sensors) to monitor PM₁₀ and PM_{2.5} data as a 10min average µg/m³ value; <p><u>Applicants proposed additions to monitoring plan:</u></p> <ul style="list-style-type: none"> • A proposed trigger value of 80 µg/m³ will alert supervisory/management staff to implement management actions including: <ul style="list-style-type: none"> ○ increase to dust suppression activities; ○ reducing work on site to only essential tasks, decreasing speed of plant and movement of equipment and potentially ceasing work during excessively high readings; ○ monitoring of levels until there is no longer an exceedance; and ○ identification of high-risk weather conditions (faster winds / warmer temperature).
Noise	Crushing of material, vehicle movements, reverse		<ul style="list-style-type: none"> • All plant will be equipped with exhaust mufflers from the Original Equipment Manufacturer (OEM) or systems meeting or exceeding the OEM specifications; • Works carried out during daylight hours;

Emission	Sources	Potential pathways	Proposed controls
	beeping		<p>CEMP Noise Management Protocol, required by conditions of MS 1180 include following relevant measures:</p> <ul style="list-style-type: none"> • Equipment fitted with appropriate noise reduction devices; • Regularly inspect, maintain and replace mobile equipment; and • Broadband reversing alarms installed on mobile plant.
Sediment laden stormwater ¹	<p>Crushing and screening of material</p> <p>Material stockpiles</p>	Overland run off	<p>Earthen bund constructed around the plant area at both Site C and F to prevent surface water ingress into the premises 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 ¹	<p>Screening and crushing plant</p> <p>Refueling equipment</p> <p>Machinery maintenance</p>	<p>Direct spill to land; and</p> <p>Contaminated surface/ stormwater and leachate</p>	<p>Implementation of the Hydrocarbons and Hazardous Substances Management Protocol (HHSMP) that include measures:</p> <ul style="list-style-type: none"> • Chemicals stored on or within a bunded structure; • 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; • No vehicle or mobile plant refueling shall occur within 50m of a watercourse or intertidal zone. • Servicing of mobile plant will be conducted within an earthen bunded area; • 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>; • 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; • Drip trays will be placed under the fuel delivery vehicle, the plant / machinery being refuelled

Emission	Sources	Potential pathways	Proposed controls
			<p>and any joins in fuel delivery hoses to capture any spills or leaks associated with the refuelling process.</p> <p>Conditions of Ministerial Statement 1180 require management of hydrocarbons under the implementation of the Surface Water Management Plan.</p>
Artificial Light ¹	<p>Crushing and screening plant</p> <p>Vehicle movements</p>	Air pathway	<ul style="list-style-type: none"> Only operated during day light hours <p>Conditions of Ministerial Statement 1180 require management of artificial light overspill under the implementation of the Light Management Plan.</p>

Note 1: Refer to Table 3 for the relevant requirements and management of specified emissions as part of Part IV assessment and conditioning under MS1180.

4.2 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 5, Figure 5 and Figure 6 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 5: 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 – Yara Pilbara Fertiliser; and Business Park. King Bay Supply Base – 130m south of port Woodside Energy (Pluto LNG) 1.2km east
Ngajarli (Deep Gorge) (recreational site)	1 km southeast of the Site C boundary
Hearson's Cove: a popular public recreation and fishing beach	Approximately 2 km east of the premises boundary (Sites C & F)
Dampier Townsite	Approximately 5.4 km south-west of the premises boundary
Karratha Townsite	11.5 km SSE <i>Considering the distance of proposed category 12 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>
Environmental receptors	Distance from prescribed activity
Murujuga National Park	Directly south and east of the project site
Tidal flat	Between sites C and F
Ephemeral creeks	Within the premises boundary

Aboriginal and other heritage sites	Within and adjacent to the premises boundary
Threatened/Priority Fauna	<p>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>).</p> <p>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.</p> <p>Another two bird species, the Bar-tailed Godwit (Baueri) (<i>Limosa lapponica bauera</i>) and Northern Siberian Bar-tailed Godwit (<i>Limosa lapponica menzbieri</i>), are also listed as threatened but are not considered to be migratory.</p> <p>Due to the nature of the proposed activities in this assessment and regulation under MS 1180, these receptors are not further considered in the risk assessment.</p>
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>Due to the nature of the proposed activities in this assessment and regulation under MS 1180, these receptors are not further considered in the risk assessment.</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>Considering the distance of proposed category 12 activities to this receptor, the Delegated Officer considers that impacts to this receptor are not foreseeable and therefore are not further considered in the risk assessment.</p>
Groundwater	<p>Flows towards tidal flat with water levels close to surface (1m close to tidal zone). pH neutral (6.5 – 7.7) with EC ranging from 5,200 – 190,000 µS/cm.</p> <p>Site F - between 10.8 – 7.7 metres below ground level (mbgl)</p> <p>Site C - between 10.2 – 7 mbgl</p>

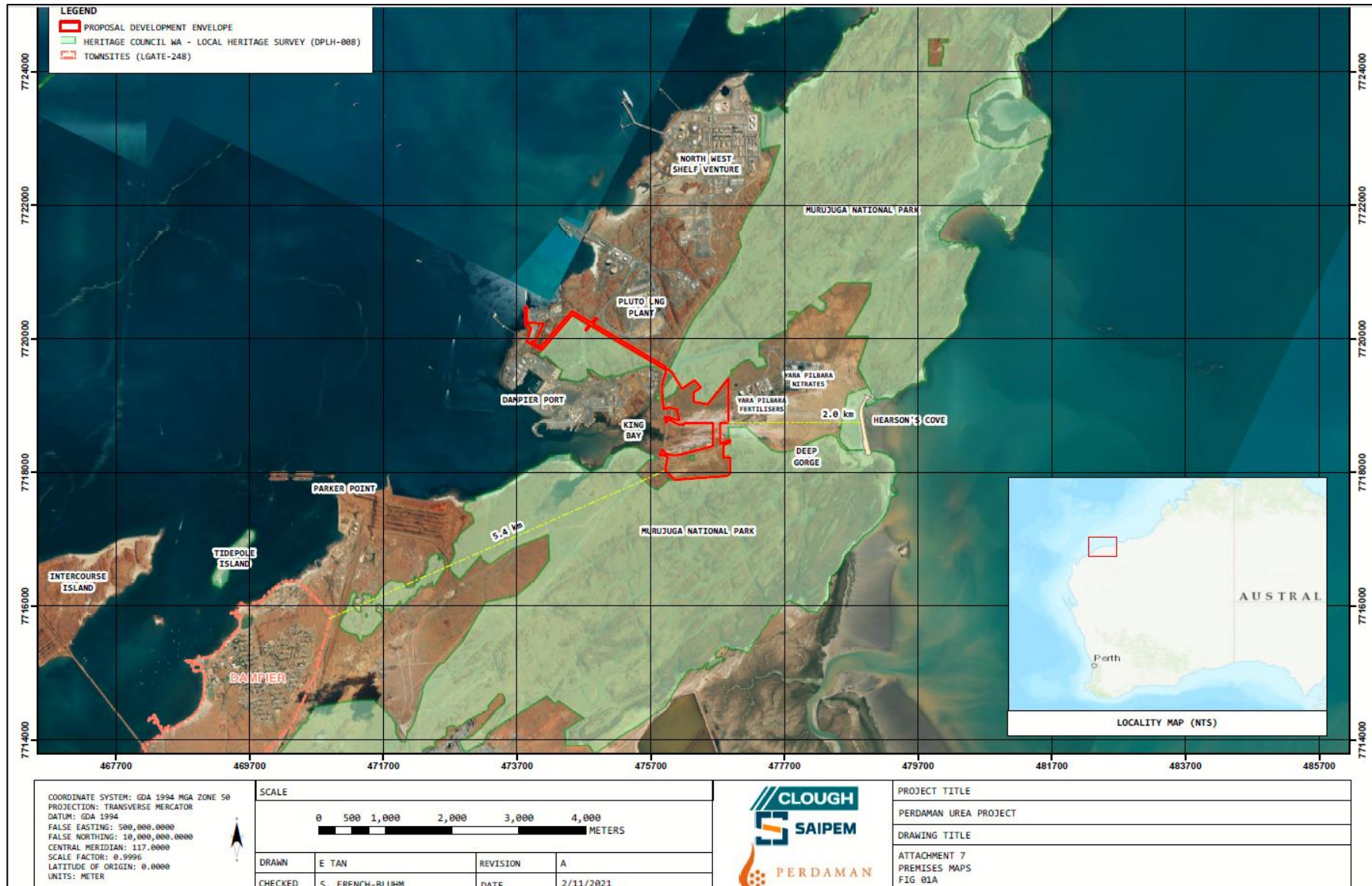


Figure 5: Distance to sensitive receptors, including recreational areas

Licence: L9426/2024/1

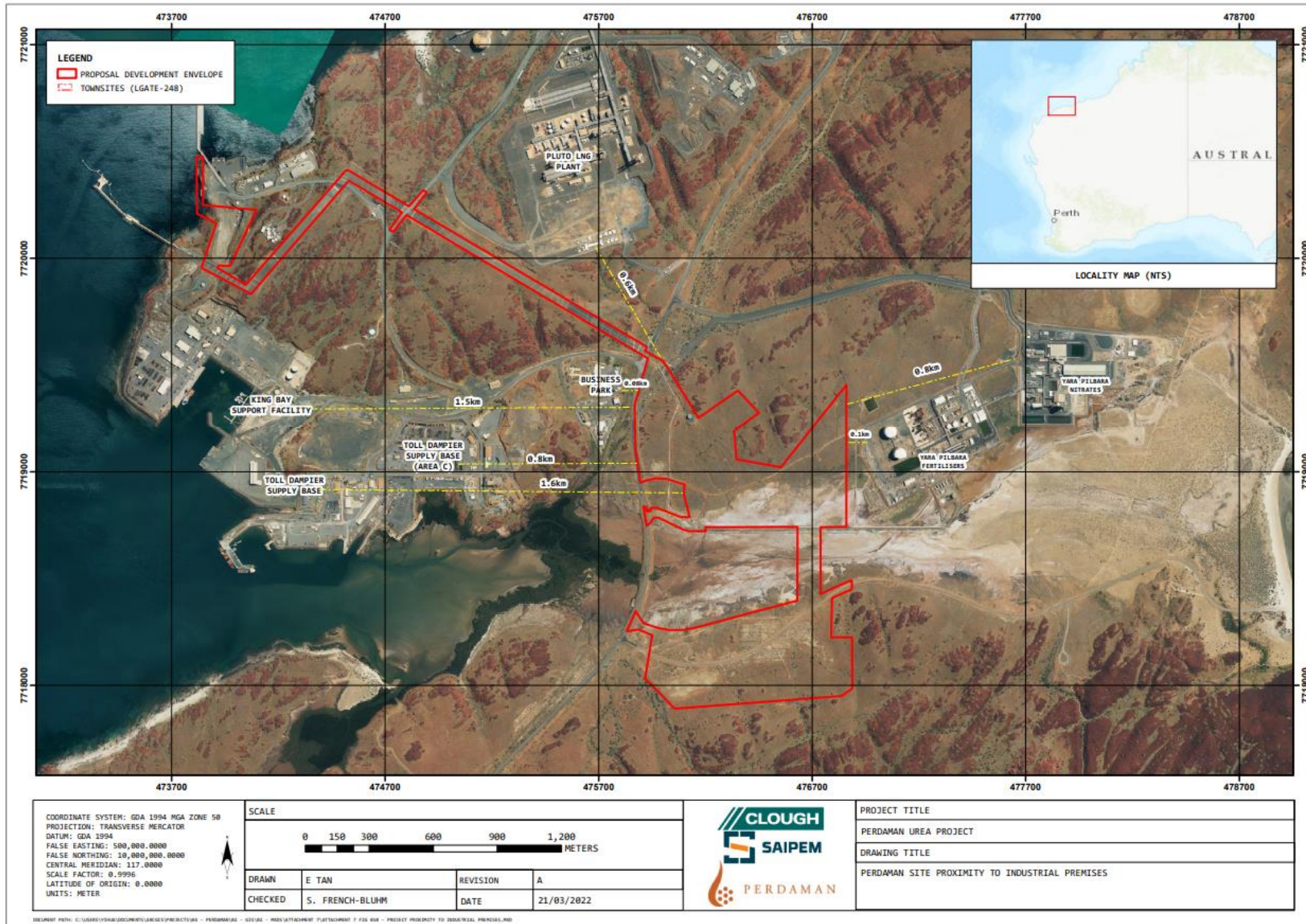


Figure 6: Distance to industrial receptors

Licence: L9426/2024/1

4.3 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 6.

Licence L9426/2024/1 that accompanies this decision report authorises emissions associated with the operation of the premises i.e. screening and crushing activities

The conditions in the issued licence, as outlined in Table 6 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015b).

Table 6: Risk assessment of potential emissions and discharges from the premises during operation

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of licence	Justification for regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Operation								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust (granophyte /sand/alluvium material)	<p>Pathway: Air / windborne pathway Impact: Health and amenity impacts</p>	<p>Neighboring industrial sites adjacent to premises Residential receptors at Dampier Townsite 5.4km away Recreational users of Ngajarli and Hearson's Cove</p>	Refer to Section 4.1.1	<p>C = Slight L = Unlikely Low Risk</p>	Y	<p>Condition 2 (Table 2): dust sprays and dust suppression Condition 4, 7, 8 and 9: Dust monitoring and management</p>	<p>The applicant's proposed controls have been conditioned in the licence 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 residential receptors and type of potential exposure, no additional regulatory controls are required beyond those conditioned.</p>
		<p>Pathway: Air / windborne pathway and deposition of particulate matter on rock art Impact: Causing erosion through abrasion</p>	<p>Petroglyphs - within and immediately adjacent to premises boundary</p>	Refer to Section 4.1.1	<p>C = Severe L = Unlikely High Risk</p>	N	<p>Condition 2 (Table 2): plants to be operated >100 m from heritage sites; Condition 2 (Table 2): dust sprays and dust suppression Condition 3: Production limits Condition 4, 7, 8 and 9: Dust monitoring and management Condition 7: additional monitoring location Condition 8: Trigger exceedance investigation and response Condition 10: ambient meteorological monitoring</p>	<p>The Delegated Officer has determined the consequence of this impact to be severe, 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 initial risk assessment in works approval W6630/2021/1 determined that, based on the material composition, short duration, local and regional ambient air setting and the proposed controls for dust emissions, the likelihood rating for the risk event was rare. These factors, specifically the duration of the proposed activities, the material composition and the local and regional ambient air setting remain relevant for this licence assessment.</p> <p>In recognition of the current proposal that includes an increase to the annual throughput of the crushing and screening activity, the likelihood is revised to unlikely, noting the proposed equipment utilised onsite. The Delegated Officer notes however, that the day to day crushing and screening tonnage rate (average 5,000 tonnes per day) is lower than that processed during time limited operations under works approval W6630/2021/1 (~8,000 tonnes per day), and considers that while the assessment for licence includes an overall increase in throughput, the alteration can be managed by the following requirements:</p> <ul style="list-style-type: none"> • Controls transferred from the works approval and conditioned in the licence that include location restrictions and dust suppression; • Additional dust monitoring and management actions proposed by the applicant as part of this application. The Delegated Officer has conditioned the applicants proposed controls to implement management actions when dust monitoring trigger levels are reached • Additional condition relating to the monitoring of ambient meteorological conditions (as conducted by the applicant) to ensure that site-based weather conditions are evaluated as part of the dust management actions; and • In consideration of the prevailing winds (easterly in winter and westerly in summer), and potential impacts to receptors, the Delegated Officer has conditioned additional regulatory controls that include: <ul style="list-style-type: none"> ○ Additional mobile dust monitor(s) as part of the monitoring program to ensure that impacts from dust emissions to receptors are appropriately captured and to ensure that the management actions are efficient in controlling impacts to receptors; ○ proactive dust management strategies; and ○ additional specific management actions in the event that dust events occur. <p>In addition to the above, the Delegated Officer considers the controls specified within the Flora Management Plan (as required by conditions of MS 1180) and the Cultural Heritage Management Plan (as required by conditions of MS 1180) are likely to also mitigate the impact of dust emissions to rock art.</p>

Licence: L9426/2024/1

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of licence	Justification for regulatory controls	
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood				
	Noise	Pathway: Air / windborne pathway Impact: Health and amenity impact	Neighboring industrial sites adjacent to premises Residential receptors at Dampier Townsite 5.4km away	Refer to Section 4.1.1	C = Slight L = Unlikely Low Risk	Y	Condition 2 (Table 2): plant operated with exhaust mufflers.	The Delegated Officer considers the controls originally required by works approval W6630/2021/1, as nominated by the applicant to operate the plant with exhaust mufflers remain suitable and have been conditioned as ongoing requirements in the licence. It is noted that the <i>Environmental Protection (Noise) Regulations 1997</i> (EP Noise Regulations) also apply. Given the distance to residential receptors, the Delegated Officer considers that residential receptors are unlikely to be impacted by the crushing and screening activities.	
	Hydrocarbons (associated with operational activities – equipment, machinery, generators)	Pathway: Overland transport via contaminated stormwater Impact: Ecosystem disturbance of impacting surface water quality	Ephemeral creek within the premises Tida flats between Site C and site F	Refer to Section 4.1.1	C = Slight L = Unlikely Low Risk	Y	Condition 2 (Table 2): plants to be only operated within bunding	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. The Delegated Officer considers that these requirements under MS1180 are sufficient and consequently has not conditioned additional regulatory controls within the licence. 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.	
		Pathway: Leaching through soil profile Impact: Contamination of groundwater	Shallow groundwater Site F (between 10.8 –7.7 mbgl) Site C (between 10.2 – 7 mbgl)	Refer to Section 4.1.1				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.
	Sediment laden stormwater	Pathway: Overland runoff potentially Impact: Ecosystem disturbance or impacting surface water quality	Ephemeral creek within the premises Tida flats between Site C and site F	Refer to Section 4.1.1				Condition 2 (Table 2): plants to be only operated within bunding	The Delegated Officer has determined that the bunds constructed through the works approval W6630/2021/1 and the requirements to only allow operation of the plant within the bunding area is sufficient in capturing any sediment laden surface / stormwater as a result of the operation of the crushing and screening plant and any run-off from the stockpiles. The Delegated Officer also considers that other controls as required under conditions of MS 1180 and the relevant management plans, specifically the Surface Water Management Plan, has provided confidence that this potential emission will be adequately managed, and no additional regulatory controls are required.
	Leachate from disturbed acid sulphate soils	Pathway: Overland transport Impact: Ecosystem disturbance of impacting surface water quality	Ephemeral creek within the premises Tida flats between Site C and site F	Refer to Section 4.1.1				N/A	The Delegated Officer has determined that requirements under MS 1180, and specially 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 in managing risk of acid sulfate soils during crushing and screening activities. Consequently, no additional regulatory controls will be conditioned under this Part V licence.
		Pathway: Leaching through soil profile Impact: Contamination of groundwater	Shallow groundwater Site F (between 10.8 –7.7 mbgl) Site C (between 10.2 – 7 mbgl)	Refer to Section 4.1.1					
	Light overspill	Pathway: Air pathway Impacts: Amenity at nearby recreational areas	Recreational users of Ngajarli and Hearson's Cove	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 MS 1180) which considers impact of light overspill to nearby receptors such as fauna and human use of nearby Aboriginal Heritage sites.
		Pathway: Air pathway Impacts: Disruption to fauna activity and behaviour	Environmental receptors in King Bay	Refer to Section 4.1.1				N/A	

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 7 provides a summary of the consultation undertaken by the department.

Table 7: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 19 February 2024.	Comments received from the Conservation Council Western Australia (CCWA) on 5 March 2024. A summary of comments is provided in Appendix 2.	Refer to Appendix 2.
City of Karratha advised of proposal on 19 February 2024.	<p>City of Karratha provided comments on 8 March 2024. The development was considered by the Regional Joint Development Assessment Panel on 15 March 2022 wherein the development was approved subject to conditions.</p> <p>The development is to comply with the DA issued by JDAP on 17 March 2022 and the conditions of that DA, including condition 2 that requires a revised operational site plan to be submitted to and approved by the City of Karratha, and thereafter bring implemented to the satisfaction of the City of Karratha.</p>	Noted. The department recognises that the applicant is required to comply with all regulatory requirements under separate legislation and approvals.
Department of Jobs, Tourism, Science and Innovation (JTSI) advised of proposal on 19 February 2024.	None received.	N/A.
Department of Planning Lands and Heritage (DPLH) advised of proposal on 19 February 2024.	<p>DPLH provided comments on 14 March 2024. In the response DPLH have noted that conditions of the Section 18 consent include:</p> <ul style="list-style-type: none"> - Development of a Cultural Heritage Management Plan (CHMP) with the Murujuga Aboriginal Corporation (MAC) covering ground disturbing works, site salvage and protection, monitoring and management of Aboriginal heritage; - Cultural monitors to be present for ground disturbing works that impact any Aboriginal site; and - Annual and final report to the Registrar of Aboriginal Sites. <p>DPLH note that the reviewed Heritage Management Sub-Plan addresses the specific controls and management of surveys, ground disturbing works, unexpected finds procedures, site salvage strategy, overall heritage management, as well as cultural protocols and ongoing communication with MAC.</p> <p>DPLH requests that applicant review the list of Aboriginal places (as listed the CHMP) within the</p>	Noted. The department recognises that the applicant is required to comply with all regulatory requirements under separate legislation and approvals.

	development envelope to ensure accuracy with the section 18 consent.	
Friends of Australian Rock Art (FARA) advised of proposal on 19 February 2024.	None received.	N/A.
Murujuga Aboriginal Corporation (MAC) advised of proposal on 19 February 2024.	None received.	N/A.
The Save Our Songlines group advised of proposal on 19 February 2024.	Save Our Songlines group provided comments on 13 March 2023. A summary of the comments provided in Appendix 2.	Refer to Appendix 2.
Applicant provided draft licence and decision report on 15 March 2024.	<p>Applicant provided a response on 15 March 2024 with the following comments:</p> <ol style="list-style-type: none"> 1. Request to change daily throughput from 'nominal' to 'average' as daily throughputs may vary from 2,500 tonnes/day up to 7,500 tonnes/day; 2. Other minor clarifications; and 3. Request to waive the remainder of the comment period and issue the licence as soon as possible. 	<ol style="list-style-type: none"> 1. Noted and actioned. The Delegated Officer considers that the proposed change is acceptable, noting the daily operational variability as suggested. The Delegated Officer notes that the applicant is required to manage daily crushing and screening activities to remain within the overall crushing and screening limit applied to the licence; 2. Updates completed where relevant; 3. Noted.

6. Conclusion

In granting the licence 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*. In keeping with DWER's published guidance, the Delegated Officer has 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.

Based on the assessment in this decision report, the Delegated Officer has determined that a Licence will be granted (for category 12 activities), subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements. Where necessary, and to ensure appropriate regulatory controls are in place, additional requirements for dust management have been conditioned that require the licence holder to monitor for and respond to dust events.

This assessment has considered the cumulative dust emissions from operation of all infrastructure listed in Table 1. The Delegated Officer has determined that the applicant's request for back-up equipment (described in section 2.2.4) is reasonable and will not increase the risk profile of operations where the equipment is used at it is intended and only for this purpose. This distinction is conditioned within the licence, specifying the use of only authorised equipment.

As discussed in section 2.2.3, this licence application assessment has included an increase to throughput from that authorised in the associated works approval from 450,000 to 850,000 tpa. The Delegated Officer has determined that this increase is acceptable noting the short duration of the activities (less than 12 months) and that additional controls are conditioned in the licence to mitigate potential dust emissions from premises activities and require management action to respond to dust events.

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10. Donaldson, M., 2011, Understanding the Rocks: Rock Art and the Geology of Murujuga (Burrup ‘Peninsula’), *Rock Art Research* Vol. 28, No. 1, pp. 000-000.
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14. Perdaman 2022d, *Light Management Plan, Perdaman Urea Project, Burrup Peninsula, Western Australia*.
15. Perdaman 2022e, *Surface Water Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
16. Perdaman 2022f, *Threatened Species Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
17. Perdaman 2023a, *Acid Sulfate Soil Management Plan Perdaman Urea Project Burrup Peninsula, Western Australia*.
18. Perdaman 2023b, *Construction Environmental Management Plan*.
19. Perdaman 2023c, *Construction Environmental Management Plan Appendix J Air Quality Management Protocol*.
20. Perdaman 2023d, *Construction Environmental Management Plan Appendix K Noise Management Protocol*.
21. Perdaman 2023e, *Construction Dust Management Protocol*.
22. Perdaman 2023f, *Cultural Heritage Management Plan 2021– Project Ceres, Perth, Western Australia*.
23. Safe Work Australia 2022, *Workplace Exposure Standards for Airborne Contaminants*.
24. Smith B, Black J, Hoélé S, Ferland M, Differy S, Neumann J, Geisler T 2022, *Rock Art Res.*, v. 39.
25. Tetra Tech Coffey 2022a, *Perdaman Urea Project – Project Destiny Baseline Contamination Assessment – Detailed Site Investigation, Perth, Western Australia*.

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY			
Application type			
Licence	<input checked="" type="checkbox"/>	Relevant works approval number:	W6630/2021/1
		Has the works approval been complied with?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Date application received	6 February 2024		
Applicant and Premises details			
Applicant name/s (full legal name/s)	Perdaman Chemicals and Fertilisers Pty Ltd		
Premises name	Not entered on form (Project Ceres)		
Premises location	Part of Lot 700 on Plan P411759 Part of Lot 3014 on Plan P042282 Part of Lot 3013 on Plan P042282 Part of Lot 701 on Plan P411760 Part of Lot 706 on Plan P411760		
Local Government Authority	City of Karratha		
Application documents			
HPCM file reference number:	DWERDT901257 & DWERDT901259		
Key application documents (additional to application form):	Construction Environmental Management Plan Construction Environmental Management Plan – Protocols Construction Environmental Management Plan – Subplans Management plans approved under MS1180		
Scope of application/assessment			
Summary of proposed activities or changes to existing operations.	Operation of crushing and screening equipment authorised under W6630/2022/1 The application also seeks to increase production capacity from 450,000tpa to 850,000tpa		

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Proposed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 12: Screening etc. of material	850,000tpa Note this in an increase from 450,000tpa authorised under works approval W6630.	

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input checked="" type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: 1180 EPA Report No: 1705
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Reference No: 2018/8383
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input type="checkbox"/> General lease <input checked="" type="checkbox"/> Expiry: 31/03/2063 Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Approval: DA21261 granted for the Urea Production Facility and associated works. Expiry date: 15 March 2026 (4 years after grant date).
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Managed under Part IV.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	N/A for the scope of this application.

<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: Pilbara Groundwater/Surface Water Areas Type: Proclaimed Groundwater Area/Surface Water Areas Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A <input type="checkbox"/></p>
<p>Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>N/A</p>
<p>Is the Premises subject to any other Acts or subsidiary regulations</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p><i>Aboriginal Heritage Act 1972</i></p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	

Appendix 2: Application submission summary

Stakeholder	Summary of submission points	DWER comments
<p>Conservation Council WA (DWERDT915422)</p>	<p><u>Management strategies for dust are inadequate:</u></p> <p>a) The proposed targeted water loading management actions from the exceedance of air quality trigger is unclear on the timeframe to bring dust under control or types of preventative control that are in place;</p> <p>b) Concerns for health risks regarding the 80 µg/m³ value for the trigger limit when NEPM guidelines for daily average are 50 µg/m³ and 25 µg/m³ and annual averages are 25 µg/m³ and 8 µg/m³ for PM10 and PM2.5 respectively;</p> <p>c) The location of the proposed dust monitoring locations is inadequate to capture dust emissions from the activities to impact significant petroglyphs within the south-eastern area of the site. It is possible that areas beyond the tidal flats will be dryer and will generate more dust during site works;</p> <p>d) Although there is a control to 'avoid' earthworks and other dust generating activities during windy over 40km/hr, there is no plan to prohibit dust generating operations in windy conditions;</p> <p>e) CCWA requires further clarification on the dust suppression water run-off controls and would like DWER consideration on potentially contaminated water run-off as a result of dust suppression activities and the use of chemical dust suppressants given the close proximity to sensitive groundwater and tidal flats zones.</p>	<p>a) Noted. As described in section 4.2, the Delegated Officer has considered and conditioned controls within the licence that include dust trigger management actions. These controls require the licence holder to monitor dust emissions during crushing and screening activities and respond to exceedances of the specific trigger with targeted management actions. These actions are required immediately upon notification of the exceedance event;</p> <p>b) The Delegated Officer acknowledges the comments regarding NEPM standards for air quality criteria. As identified, the NEPM standards specify 24 hour and annual exposure limits for particles as PM₁₀. Given that the NEPM standard is an average over a 24-hour period it is not considered appropriate for reference to short term visitors to the area (as receptors). The nearest residential receptors to the proposal are located approximately eight km away and therefore, unlikely to be exposed to dust concentrations from the proposal.</p> <p>Noting that the main purpose of the specified trigger limits is for the immediate management of fugitive dust emissions, the proposed trigger value has been considered sufficient for this purpose.</p> <p>c) Noted. As detailed in the risk assessment (section 4.3), the Delegated Officer has conditioned the nominated dust monitors, noting that the proposed locations are likely to intercept dust emissions from premises activities and nearby receptors (noting prevailing wind directions). To further ensure potential dust emissions are monitored appropriately, the Delegated Officer has conditioned an additional mobile dust monitor be utilised and positioned in a manner that most appropriately captures potential dust emissions from the crushing and screening activity to nearby receptors (particularly petroglyphs within the prescribed premises boundary).</p> <p>d) Noted. The Delegated Officer considers that the controls relevant to controlling dust emissions from crushing and screening activities are conditioned within the licence, and management actions that include restricting and/or ceasing activities have been specified that require the licence holder to respond to dust events. These controls are considered to complement those required under MS1180.</p> <p>e) Noted. Dust suppression activities on the crushing and screening plant and those for the conditioning of stockpiles will occur within a bunded area that is considered sufficient to capture and contain runoff from dust suppression water used on the crushing and screening plant. The applicant is also required to manage its use of dust suppression water in accordance with the approved management plans under MS1180, including:</p> <ul style="list-style-type: none"> • Potable water to be carted onto site for the use of dust suppression occurring on site; • Restrictions regarding the use of saline water (when used) including weekly dust suppression water quality field test to ensure TDS does not exceed 5,000 mg/L limit; • Maintaining logs on the location and volume of water used for dust suppression purposes. • The Delegated Officer also notes that surface water management across the premise is regulated under MS 1180 requiring the implementation of a Surface Water Management Plan (discussed in Table 2).
	<p><u>Risks from PFAS contamination migrating off site:</u></p> <p>Following new information regarding potential contamination at the site, CCWA requests additional dust management controls and updated surface water sampling regime for PFAS contamination in soil and water which could result in further spread and mobilisation as a result of processing of 'virgin material excavated from Sites C and F. It is not clear whether this material has been tested for contamination. CCWA notes that PFAS was not considered by EPA in the setting of environmental controls for the proposal and requires further assessment and review.</p>	<p>Noted. The Delegated Officer considers that the controls conditioned within the licence to mitigate and manage dust emissions from the crushing and screening activities, along with the requirements under MS1180 will be adequate in managing this risk. Controls within the licence include:</p> <ul style="list-style-type: none"> • Crushing and screening plant located within bunded areas to contain runoff; • Dust suppression required throughout the plant and equipment, as well as on site roads and material stockpiles to mitigate dust emissions; • Dust monitoring and specific dust mitigation strategies to be implemented for dust events; and • Potable water from offsite used for dust suppression activities. <p>Requirements for surface water sampling and monitoring is currently regulated via the Surface Water Management Plan (as required by MS1180). As detailed in this decision report, detailed site investigations for this premises indicate that the proposed cut and fill locations:</p> <ul style="list-style-type: none"> • avoid potential ASS locations and cut and fill activities; • are not considered likely to intercept groundwater; and • soil samples obtained during baseline site investigation indicate that PFAS is not present or present at low concentrations (below health investigation levels ecological direct exposure limits)

<p>Save Our Songlines (DWERDT919191)</p>	<p><u>Increase to tonnage:</u> Increase to tonnage will results in more area (Murujuga) disturbed and destroyed. The requested increase will also mean almost double the amount of dust produced from crushing and screening activities. It is not sufficient for the applicant to increase the tonnage to almost double from what was sought in the works approval W6630/2021/1 through this application.</p>	<p>Noted. As described in section 4.3 (Table 6), the increase in annual tonnage under this licence application has been considered within the risk assessment. The Delegated Officer considers that while an overall increase to annual tonnage, that the day to day crushing and screening tonnage rate is lower than that processed under time limited operations with the works approval W6630/2021/1. Notwithstanding this, and in consideration of the requested increase, conditions in the licence include additional requirements to that conditioned in W6630/2021/1. These conditions include:</p> <ul style="list-style-type: none"> • further specifications and operational requirements on the crushing and screening plant, • requirements to monitor dust emissions from premises activities, and • requirements to respond to dust events. <p>These additional controls are considered suitable for managing the ongoing processing rates for the crushing and screening equipment.</p>
	<p><u>Dust management and monitoring:</u> Several comments were provided on the efficiency of the proposed dust monitoring to adequately manage risk of dust emissions to receptors.</p>	<p>The Delegated Officer acknowledges the detailed submission regarding dust management and mitigation. In assessing the risks associated with the proposal, and considering controls proposed, the Delegated Officer has conditioned the requirement to conduct air quality monitoring under the conditions of this licence which includes:</p> <ul style="list-style-type: none"> • Four fixed dust monitoring locations (in accordance with coordinates listed in the CEMP). These current positions were chosen to capture dust emissions from current crushing and screening locations, and are considered adequate with respect to receptor locations and prevailing wind directions; • The requirement for an additional mobile dust monitor to be utilised and located based on the specific location of crushing and screening plant (where re-located) to appropriately capture potential dust impacts to the nearest sensitive receptor considering the prevailing wind conditions at the premises; • Utilising dust monitors to identify emissions (rather than rely solely on visual assessment) by setting a trigger limit of 80 µg/m³ for PM₁₀ averaged over a 10 minute period for the purpose of immediate management (within 20 minutes from alert) of fugitive dust emissions. This trigger value, and the associated response requirement is considered appropriate for the purposes of onsite dust management from the crushing and screening activities; • Conditions that require the licence holder to ensure that monitoring equipment is calibrated, operated and maintained in accordance with manufacturer's specifications; • Specified management actions in the event that dust emissions from the premises activities are produced, including the implementation of a range of actions, including ceasing activities; and • Requirements to record and report to the department details of any dust events, implemented management actions and outcomes. <p>The Delegated Officer has also included conditions in the licence that require the licence holder to proactively manage dust generating activities on site by utilising weather forecasting tools and implementing air quality inspection reports that require action on those occasions that pose a higher risk of emissions. In conditioning this suite of controls, the Delegated Officer considers that potential dust emissions from crushing and screening activities are adequately captured. Further, as identified in section 3.1 and 4.1.1, requirements of MS1180 via the premises CEMP (through the CHMP) include dust management and monitoring that are also considered relevant for managing emissions from the crushing and screening activities.</p>
	<p><u>Concerns regarding water quality for dust suppression</u></p>	<p>Noted. Dust suppression activities on the crushing and screening plant and those for the conditioning of stockpiles will occur within a bunded area that is considered sufficient to capture and contain runoff from dust suppression water used on the crushing and screening plant. The applicant is also required to manage its use of dust suppression water in accordance with the approved management plans under MS1180, including:</p> <ul style="list-style-type: none"> • Potable water will be carted onto site for the use of dust suppression occurring on site; • Restrictions regarding the use of saline water including weekly dust suppression water quality field test to ensure TDS does not exceed 5,000 mg/L limit; • Maintaining logs on the location and volume of water used for dust suppression purposes. <p>The Delegated Officer also notes that surface water management across the premise is regulated under MS 1180 requiring the implementation of a Surface Water Management Plan (discussed in Table 2).</p>
	<p><u>Project impacts to natural surrounding environment.</u></p>	<p>As detailed in the decision report, and through the assessment under Part IV of the Environmental Protection Act 1986, the Perdaman Urea Project is required to manage its construction and operational activities to minimise impacts to the surrounding environment. In particular, conditions within MS1180 require the applicant to manage impacts to cultural heritage, terrestrial fauna and flora and surface waters, along with managing noise, light, greenhouse gases and others. The Murujuga Rock Art Strategy and the ongoing work of the Murujuga Rock Art Monitoring Program will also inform ongoing regulatory requirements.</p>

	<p><u>Absence of consultation from the applicant.</u></p>	<p>The Delegated Officer acknowledges the comments with regards to consultation. Following the assessment and granting of works approval W6630/2021/1, the department updated its list of direct interest stakeholders to ensure that opportunities were afforded to stakeholders to make comment on approval assessments for the Perdaman Urea Plant. Comments submitted during the assessment of this licence are welcome and have been taken into consideration.</p> <p>Obligations within MS1180 also require the applicant to consult and engage with various groups including traditional owners. Beyond this engagement, the Murujuga Rock Art Strategy was finalised in 2019 and is being implemented by the Department in partnership with the Murujuga Aboriginal Corporation, representing the traditional custodians of Murujuga (Burrup Peninsula and Dampier Archipelago) and in consultation with stakeholders, including the community and industry.</p> <p>The Murujuga Rock Art Stakeholder Reference Group, an advisory group established in 2018, is facilitating engagement between the Murujuga Aboriginal Corporation and key Government, industry and community representatives on the development and implementation of the Murujuga Rock Art Strategy. The Stakeholder Reference Group is also the primary forum for stakeholders to inform the Government's broader consideration of strategic issues relating to the monitoring and protection of the rock art.</p> <p>Noting the comments regarding consultation with the applicant, it is recommended that direct contact is made where appropriate.</p>
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