

Environmental Protection Act 1986

Section 43A

NOTICE OF DECISION TO CONSENT TO CHANGE TO PROPOSAL DURING ASSESSMENT

PERSON TO WHOM THIS NOTICE IS GIVEN

(a) Mr Vikas Rambal
 Chairman and Managing Director
 Perdaman Chemicals and Fertilisers Pty Ltd (ACN: 121 263 741)
 Level 17, Alluvion Building
 58 Mounts Bay Road
 PERTH WA 6000

PROPOSAL TO WHICH THIS NOTICE RELATES:

Perdaman Urea Project Assessment No. 2184

Pursuant to section 43A of the *Environmental Protection Act 1986* (EP Act), the Environmental Protection Authority (EPA) consents to the proponent making the following changes to the proposal during assessment without a revised proposal being referred:

- 1) Change to the configuration and reduction in size of the Development Envelope for the proposal in the Dampier Port area.
- 2) Excision of the Yatha Aboriginal heritage site from within Site F and an associated reduction in the size of the Development Envelope.
- 3) Wastewater input into the Water Corporation's Multi-User Brine Return Line (MUBRL).
- Increase in the quantity of saline water discharged into the Water Corporation's MUBRL from between 12 to 13 gigalitres per year (GL/yr) up to approximately 20 GL/yr.
- 5) Adoption of the northern realignment option for Hearson Cove Road as the preferred option for the Proposal and deletion of the southern realignment option for Hearson Cove Road.
- 6) Deletion of the gas supply pipeline from the Proposal.

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- 7) Management of stormwater.
- 8) Laydown areas associated with construction.
- 9) The overall extent of the Development Envelope and the total area that will be cleared within it.
- 10) Amendments to the key characteristics of the Proposal.

The updated key characteristics tables and the associated figure depicting the Development Envelope and indicative infrastructure are attached to this Notice.

EFFECT OF THIS NOTICE:

The EPA considers that the change is unlikely to significantly increase any impact that the proposal may have on the environment, and therefore, the proponent may change the proposal as provided for in this notice.

RIGHTS OF APPEAL:

There are no rights of appeal under the EP Act in respect of this decision.

Dr Tom Hatton Delegate of the Environmental Protection Authority CHAIRMAN

20 March 2020

Item	Detail
Proposal title	Perdaman Urea Project
Proponent name	Perdaman Chemical and Fertilisers Pty Ltd
Short description	The Proponent intends to construct and operate a urea plant with a production capacity of approximately 2 million tonnes per annum (Mtpa) on Sites C and F within the Burrup Strategic Industrial Area (BSIA) on the Burrup Peninsula.
	Natural gas for the urea plant will be sourced from a nearby domestic gas plant. The urea product will be transported via closed conveyor to the nearby Dampier Port for export via Panamax vessels.

Table 1 Summary of the Proposal

Table 2 Location and Proposed Extent of Physical and Operational Elements

Element	Location	Proposed extent
Physical elements		
Overall extent of the Perdaman Urea Project	Figure 1	Clearing of no more than 73 ha within a Development Envelope of 106 ha.
Sites C & F	Figure 1	Site C: Approximately 34 ha with clearing of up to 34 ha. Site F: Approximately 32.6 ha with clearing of up to 30 ha. Causeway: Approximately 1.5 ha with clearing of up to 1.5 ha.
Ammonia Plant	Figure 1	3,500 tpd nominal capacity - no 3rd party sales.
Urea Production Plant	Figure 1	Footprint approximately 68.1 ha with clearing of up to 65.5 ha. 6,200 tpd nominal capacity, granulated product nominal 2.05 Mtpa.
Infrastructure and Logistics Buildings	Figure 1	 including: Administration buildings; Operation control room; Maintenance workshop; Parts and materials warehousing; and Plant security.
Utility Block	Figure 1	 Air separation (~2,200 tpd); Power generation (~ 100 MW); Water treatment; Cooling water; Flare; Firefighting facilities; and Other utilities.
Hearson Cove Road realignment to the northern boundary of Site F	Figure 1	Approximately 4 ha with clearing of up to 4 ha including construction laydown.
Laydown associated with Construction	Figure 1	Clearing/fill of approximately 50 ha comprising of up to 21 ha in Site F and up to 29 ha across other construction elements.
Product Conveyor to Port	Figure 1	Closed conveyor along the existing East West Service Corridor (10ha) which is already disturbed. Clearing of 1 ha to connect from site boundary to the East West Service Corridor (3 options under consideration).

Element	Location	Proposed extent
Product Storage Areas	Figure 1	<u>Ammonia</u> : Storage of a maximum of 10,000 tonnes capacity on plant site in refrigerated tank.
		<u>Urea (plant site):</u> minimum 75,000 tonnes capacity, fully enclosed shed.
		Urea (port site): 75,000 tonnes capacity, fully enclosed shed.
Operational elements		
Gas Supply (Natural Gas)		130 terajoules per day supplied via a gas pipeline.
Urea Formaldehyde Input		11 ktpa approximately.
Power Supply		Internal generation.
Water Supply		25.2 GLpa from existing sea water supply by Water Corporation.
Stormwater		Stormwater will be treated and re-used on site to the fullest extent practicable.
Wastewater		Domestic wastewater will be treated and re-used on site. Any excess will be combined with saline water prior to being discharged into the existing Multi-User Brine Return Line (MUBRL), subject to agreement with the Water Corporation.
Saline Water Discharge		Up to approximately 20 GL/yr (including excess treated wastewater) will be discharged into the existing MUBRL, subject to agreement with the Water Corporation.
Solid Waste		Some solid waste from site water treatment residue to appropriate disposal site.
		Spent catalyst/resins to appropriate disposal sites.
		Construction waste streams to be recycled where such services are available from waste management contractors. Residual wastes to local landfill in accordance with landfill classification.
Energy Efficiency		Approximately 21 GJ/t urea (LHV).
		Approximately 5.1 Gcal/t urea (LHV).
Material Transport	Figure 1	Transport of urea (granules) through conveyor to Dampier Port along existing service corridor.
Urea Shiploading System	Figure 1	Travelling (closed) conveyor-fed, cantilever arm loader with direct discharge to ship hold via chute.
		Nominal loading capacity of 2,200 tonnes per hour.
Shipping	Figure 1	Urea 50-100 times per year, depending on destination port limits on vessel capacity.
Noise		< 35 dB(A) at nearest noise sensitive premises. < 65 dB(A) at plant boundary.
Air Emissions		
Oxides of Nitrogen (NO _x) (as NO ₂)		319 tpa approximately from power generation and fired heater.
Carbon Dioxide (CO ₂)		0.7 Mtpa approximately. Includes 0.07 Mtpa of CO ₂ supplied in natural gas.
Sulphur Dioxide (SO ₂)		5 tpa approximately.
Methane (CH ₄)		Traces, < 1 tpa.

Eleme	ent	Location	Proposed extent	
Ammonia (NH ₃)			400 tpa maximum, to be minimised as practicable during detailed engineering design.	
Urea Particulates 353 tpa maximum, to be minimised as practicable detailed engineering design.		353 tpa maximum, to be minimised as practicable during detailed engineering design.		
Methanol < 1 tpa.		< 1 tpa.		
Dust			Construction and fugitive operational emissions.	
Units ar	nd abbreviations			
dB(A) Gcal/t GJ/t GLpa GL/yr ha	decibels, A weighted gigacalories per tonne gigajoules per tonne gigalitres per annum gigalitres per year hectares	ktpa LHV Mtpa MW tpa tpd	kilotonnes per annum lower heating value million tonnes per annum megawatts tonnes per annum tonnes per day	





Environmental Protection Act 1986

Section 43A

STATEMENT OF REASONS

CONSENT TO CHANGE PROPOSAL DURING ASSESSMENT

Proposal: Perdaman Urea Project

Proponent: Perdaman Chemicals and Fertilisers Pty Ltd

Decision

For the reasons outlined below, the EPA has determined to consent to the Proponent changing the Proposal outlined in Schedule 1 attached to this Statement of Reasons.

Background

On 7 May 2018, the Proposal was referred to the Environmental Protection Authority (EPA) by a third party under Section 38 of the *Environmental Protection Act 1986* (EP Act). The Proposal involves the construction and operation of a urea plant with a nominal production capacity of approximately 2 million tonnes per annum (Mtpa) on Sites C and F within the Burrup Strategic Industrial Area on the Burrup Peninsula. The Proposal also includes a product conveyor linking Site C to Dampier Port via the existing East West Service Corridor together with a product storage shed and shiploader located within Dampier Port.

On 28 November 2018, the EPA determined to assess the Proposal at the level of Public Environmental Review with a 12-week public review period for the Environmental Review Document (ERD) and a Proponent-prepared Environmental Scoping Document (ESD) with a 2-week public review period.

Due to the lack of information about the Proposal in the third party referral, the current location and extent of the physical and operational elements of the Proposal is defined in Table 2-2 in the ESD which was approved by the EPA on 22 July 2019.

The Proponent is currently finalising the preparation of the ERD. In advance of the release of the ERD for public review and the EPA preparing a report on the outcome of its assessment of the Proposal, the Proponent has sought the EPA's consent to the proponent changing the Proposal.

Relevant Statutory and Administrative Provisions

Section 3.8 of the Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2016 guides what information the EPA requires from a person wanting to change its proposal during assessment.

Prime House, 8 Davidson Terrace Joondalup, Western Australia 6027. Postal Address: Locked Bag 10, Joondalup DC, Western Australia 6919. In considering the request for consent, the EPA considered the:

- details of the proposed change;
- statement of the significance of the change; and
- rationale for the change.

Materials considered in making this decision

In determining whether to consent to the proponent changing the proposal the EPA has considered the following:

- 1. Proponent's original Request to Change the Proposal under Section 43A of the EP Act (4 March 2020);
- 2. Proponent's revised Request to Change the Proposal under Section 43A of the EP Act which includes additional information (12 March 2020);
- Three emails dated 17 March 2020 from the Proponent's environmental consultant to EPA Services of the DWER providing further clarification on the previously requested changes and information on additional requested changes to the Proposal;
- 4. The approved ESD;
- 5. Public submissions from the 2-week public review period for the draft ESD; and
- 6. Relevant EPA policy and procedures.

Consideration

- 1. Nature of the proposed changes
 - a) Change to the configuration and reduction in size of the Development Envelope for the Proposal in the Dampier Port area.

The Proponent has advised that following further evaluation of the three Port Infrastructure Options depicted in Figure 3 in the ESD, it has identified the preferred option which is shown in Figure 1 (attached). This option was chosen because it is located on previously disturbed land within the Dampier Port area and it effectively reduces the potential direct impacts on the marine environment that were associated with the other options. The land-based wharf associated with the preferred option will augment the capacity of Dampier Port to receive cruise ships. The City of Karratha considers that this would be an important social benefit for the region. The product storage shed will now no longer be located directly adjacent to the shoreline and the shiploader will be installed and operated on a land-backed wharf which will be constructed by the Pilbara Ports Authority. This change will result in the area of the Development Envelope in the Dampier Port area being reduced by 5.6 hectares (ha).

b) Excision of the Yatha Aboriginal heritage site from within Site F and an associated reduction in the size of the Development Envelope.

One of the outcomes of a heritage survey that was recently undertaken for the Proposal was a recommendation that the Aboriginal ceremonial site known as the Yatha, which is located in the south-western corner of Site F, be excised from the Development Envelope with ownership and control transferred to the Murujuga Aboriginal Corporation (MAC). The excision of this site has been endorsed by the MAC and the Circle of Elders, as well as the Ngarluma Yinjibarndi Foundation Limited (NYFL). The Proponent has agreed to modify the Development Envelope in the south-west corner of Site F by moving the boundary approximately 250 metres in a north-easterly direction to avoid the Yatha site. This proposed change will also provide protection to an identified bush tucker foraging site and to bat foraging habitat along the drainage lines in the south-western corner if Site F. The size of the Development Envelope will decrease by approximately 5.4 ha due to the above change.

c) Wastewater input into the Water Corporation's Multi-User Brine Return Line (MUBRL).

The Proponent has advised that domestic wastewater consisting primarily of black and grey water from staff amenities, including toilets, showers, and washing and kitchen facilities will not be discharged separately into the MUBRL. Domestic wastewater will be treated and recycled within the plant, and any excess will be combined with saline water prior to being discharged into the MUBRL. Black water will be treated in a typical pre-treatment package unit to ensure that an acceptable water quality is achieved for reuse on site. There will be no direct discharge of this treated wastewater into the environment or the MUBRL. Solid wastes from the treatment plant will be disposed of offsite by an appropriately licenced waste contractor. This change is not considered to be significant as it reduces the potential impacts of the Proposal on marine environmental quality.

 Increase in the quantity of saline water discharged into the Water Corporation's MUBRL from between 12 to 13 gigalitres per year (GL/yr) up to approximately 20 GL/yr.

The Proponent has advised that the initial design estimate for the annual quantity of saline water that would be discharged from the Proposal into the MUBRL of between 12 to 13 GL/yr was based on original vendor inputs. However, revised design has resulted in the quantity of wastewater that will be disposed of into the MUBRL increasing to approximately 20 GL/yr. The increased saline water input from the Proposal can be accommodated under the Water Corporation's current approval for the MUBRL pursuant to Ministerial Statements 567 and 594 (MS 567 and MS 594) and the associated Operational Marine Environmental Management Plan (OMEMP). In view of the above, this change is not considered to be significant.

 Adoption of the northern realignment option for Hearson Cove Road as the preferred option for the Proposal and deletion of the southern realignment option for Hearson Cove Road.

The Proponent has advised that the northern realignment option for Hearson Cove Road has been adopted as the preferred option due to site layout changes, plant infrastructure being relocated to Site C only, and stakeholder feedback on traffic and safety concerns associated with the southern realignment option (i.e. additional right angle corners and sun glare problems at the Burrup Road intersection). The deletion of the southern realignment option also removes the potential for the Yatha Aboriginal heritage site to be adversely affected by the Proposal. The removal of the southern realignment option for Hearson Cove Road effectively reduces the area within Site F that would need to be cleared as the preferred northern realignment option is significantly shorter in length. The southern realignment option would have required 6.2 ha of vegetation to be cleared whereas the northern realignment option will only require 4 ha of vegetation to be cleared. The deletion of the southern realignment option avoids the potential disturbance of high guality vegetation on the northern periphery of the Murujuga National Park and potential bat foraging habitat along the drainage lines in the south-western corner of Site F. It also avoids disturbance to potential heritage site clusters located on the southern edge of Site F that were identified in previous heritage survey work.

f) Deletion of the gas supply pipeline from the Proposal.

The Proponent has clarified that the natural gas supply for the Proposal will be delivered via a pipeline to be constructed within the existing gas pipeline easement by Woodside. Woodside will be responsible for providing natural gas up to the boundary of Site C as well as obtaining all of the necessary approvals. Accordingly the gas supply pipeline does not constitute part of the Proposal. The one hectare area of clearing required to link the Proposal to the existing gas pipeline easement has already been accounted for in the 34 ha of clearing that will be undertaken within Site C.

g) Management of stormwater.

In the original Proposal, stormwater was to be treated onsite prior to being discharged offsite. The Proponent has clarified that stormwater across Sites C and F will be treated and re-used onsite to the fullest extent possible as this is a valuable water resource for the Proposal that reduces the requirement to bring in seawater which involves energy and other consequences. The use of all the treated stormwater practicable to replace seawater would also assist in the management of the salinity of the saline water returned to the MUBRL and meeting the relevant compliance requirements in MS 594. The Proponent has advised that the site stormwater retention system has been designed to handle storm events of up to a 1:100 years in magnitude. In the event of a 1:100 years or larger storm event, the capacity of the retention system may

be overtopped and excess stormwater would then be discharged offsite by engineered connections to the perimeter drains.

h) Laydown areas associated with construction.

The laydown areas associated with construction for the original Proposal involved the clearing/fill of approximately 50 ha within the Development Envelope. The Proponent has clarified that of the above-mentioned 50 ha, a maximum of 21 ha located in Site F will be used for construction laydown, and on completion of construction, a substantial portion of this area will be rehabilitated. The remaining 29 ha of clearing/fill for construction laydown areas is distributed across the other Proposal elements.

i) The overall extent of the Development Envelope and the total area that will be cleared within it.

Information on the overall extent of the Development Envelope and the total amount of clearing that would be undertaken within it for the original Proposal was not included in Table 2-2 in the ESD. The Proponent has advised that overall size of the original Development Envelope was 117 ha and that up to 83.2 ha would have been cleared within it. The overall size of the new Development Envelope has been reduced by 11 ha to 106 ha and the amount of clearing that will be undertaken within it has been reduced by 10.2 ha to 73 ha (i.e. approximately 12.2%).

j) Amendments to the key characteristics of the Proposal

The Proponent has provided a revised version of the key characteristics table which describes the location and proposed extent of the physical and operational elements of the changed Proposal. The changes involved the:

- insertion of information on the overall extent of the Proposal;
- revision of the information on the amount of clearing required within Site C;
- revision of the information on the extent of Site F and the amount of clearing required within it;
- deletion of the Gas Supply Pipeline;
- revision of the information on the footprint of the Urea Production Plant and the amount of clearing required within it;
- insertion of the realignment of Hearson Cove Road to the northern boundary of Site F;
- revision of the information regarding the clearing that will be undertaken within the construction laydown areas; and

 revision of the information regarding the management of stormwater and wastewater, and the quantity of saline water that would be discharged into the MUBRL;

The above changes to the Proposal are highlighted in bold text in the attached copy of the key characteristics tables with the changed Development Envelope depicted in Figure 1. In addition to the above changes, EPA Services of the DWER has also included a footer at the bottom of the attached table which clarifies the meaning if the various units and abbreviations that appear within it.

2. Stage of the assessment process

The ESD for the Proposal was approved by the EPA on 22 July 2019. The Proponent is currently preparing the ERD for the Proposal. The draft ERD will need to be amended to accommodate the above-mentioned changes. The ERD will be released for a 12-week public review period.

3. Currency, relevance and reliability of the information, including submissions

In a letter to the Proponent dated 6 March 2020, EPA Services of the Department of Water and Environmental Regulation (DWER) requested the provision of additional information about the proposed changes to the proposal referred to in the Section 43A application. The Proponent's consultant was subsequently requested to address the following:

- a) the need for the deletion of the southern realignment option for Hearson Cove Road to be included in the Section 43A application given that it formed part of the original proposal as depicted in Figure 3 in the approved ESD;
- b) the provision of the annual quantity of non-saline wastewater that would be discharged into the MUBRL and how this relates to the proposed increased quantity of saline water that will be discharged into the MUBRL (i.e. 20 GL/yr); and
- c) amendments to Figures 1 and 2 in the Proponent's Section 43A application so that it is easier to identify the proposed changes to the Proposal when comparing both figures.

The Proponent provided a revised Section 43A application to EPA Services of the DWER via an email dated 12 March 2020.

The Proponent's environmental consultant also provided EPA Services of the DWER with further clarification on the requested changes described in the original and revised Section 43A applications, and information on additional requested changes to the Proposal via three emails dated 17 March 2020.

EPA Services of the DWER considers that the currency, relevance and reliability of the information provided in the final revised Section 43A application and the three above-mentioned emails is satisfactory.

4. Community engagement

Forty nine public comments were received in relation to the Proponent's draft ESD during the 2-week public review period which commenced on 5 June 2019 and ended on 19 June 2019. However, one of the submissions that was received did not include any comments. The comments predominantly related to the impacts of industrial air emissions on rock art on the Burrup Peninsula. The Proponent has consulted with the MAC, the Water Corporation, the Pilbara Ports Authority, and the City of Karratha on matters relating to the proposed changes to the Proposal. EPA Services of the DWER considers that this constitutes an adequate level of community engagement.

5. Level of public concern

The main public concern about the Proposal centres on the potential for the Aboriginal rock art located in the surrounding area to be adversely affected by air emissions from the Proposal. EPA Services of the DWER does not expect a significant level of public concern about the proposed changes to the Proposal given that they do not specifically relate to rock art and will mostly result in a reduction in potential environmental impacts.

Consideration of whether the change is unlikely to significantly increase any impact that the Proposal may have on the environment

The following were considered:

a) Values, sensitivity and the quality of the environment which is likely to be impacted

The Proposal is located on Sites C and F and within the East West Service Corridor and Dampier Port on the Burrup Peninsula. Murujuga (the Dampier Archipelago and Burrup Peninsula) is considered to be of international significance supporting significant natural environmental and Aboriginal heritage sites. Murujuga is home to the largest collection of rock art in the world, which is of immense cultural and spiritual significance. In August 2018, the WA Government and the MAC agreed to progress the World Heritage nomination for Murujuga.

Murujuga has been registered on the National Heritage List (NHL) since July 2007. The Proposal is located adjacent to Murujuga National Park. Murujuga National Park covers an area of 4,913 ha. The boundaries of the NHL area and the Murujuga National Park in relation to the Project site are shown on Figures 1 & 2.

Vegetation within the new Development Envelope ranges from excellent to completely degraded. Surveys have recorded the presence of 35 vegetation communities in the Proposal area. Of these, 11 are considered to have local conservation significance. The conservation significant flora species *Rhynchosia bungarensis* and *Terminalia supranitifolia* were identified during the surveys. The P1 Priority Ecological Community (PEC) - Rockpiles of the Burrup was also recorded during the surveys.

No Threatened Ecological Communities (TECs) listed under the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) or the *Biodiversity Conservation Act* 2016 are known to occur on the Burrup Peninsula.

There are no Environmentally Sensitive Areas (ESA) located within 10 km of the Proposal site. Nor are there any Ramsar or Directory of Important Australian wetlands located within the Proposal site, or within 10 km of the Proposal site.

The approved ESD lists the following preliminary key environmental factors for the environmental review:

- Coastal Processes;
- Marine Environmental Quality;
- Marine Fauna;
- Flora and Vegetation;
- Terrestrial Fauna;
- Inland Waters;
- Air Quality; and
- Social Surroundings.

The proposed changes will not require additional factors to be considered as preliminary key environmental factors for the purposes of preparing the draft ERD.

b) Extent (intensity, duration, magnitude and geographic footprint) of the likely impacts

The total area of the Development Envelope for the changed Proposal will decrease by 11 ha from 117 ha to 106 ha (i.e. about 9.4%). The area that will be cleared within the new Development Envelope has been reduced by 10.2 ha (i.e. approximately 12.2%).

The increased quantity of saline water that will be discharged into the Water Corporation's MUBRL is unlikely to increase the potential impacts on marine environmental quality as the additional quantity of saline water when combined with the saline water discharged from the existing Yara Pilbara Ammonia Plant and Technical Ammonium Nitrate Production Facility will not exceed the current approved maximum capacity of the MUBRL which is 75.9 LG/yr. The quality of the increased quantity of saline water that will be discharged is not expected to result in any exceedances of the water quality criteria listed in MS567 and MS 594 and the associated Operational Marine Environmental Management Plan for the MUBRL.

c) <u>Consequence of the likely impacts (or change)</u>

The consequences of the likely impacts of implementing the changes to the Proposal will be less than the original proposal given that the total area of the Development Envelope will be reduced by 11 ha (i.e. about 9.4%).

d) Resilience of the environment to cope with the impacts or change

EPA Services of the DWER considers that the resilience of the environment to cope with the impacts from the changed Proposal remains unchanged from that of the original proposal, should it be implemented.

e) <u>Cumulative impacts with other projects</u>

Cumulative impacts will be considered in the EPA's assessment of the changed Proposal. The approximately 9.4% reduction in the total area of Development Envelope for the changed Proposal has the potential to reduce the cumulative impact at a local or regional scale.

f) <u>Connections and interactions between parts of the environment to inform holistic</u> view of impacts of the whole environment

The impact to the environmental functions and values of the Proposal area is likely to be reduced slightly as a result of the changed proposal being implemented instead of the original proposal given that the total area of the Development Envelope will be reduced by approximately 9.4%. A holistic assessment of the changed Proposal will be undertaken during the EPA's assessment of the Proposal.

g) <u>Level of confidence in the prediction of impacts and the success of proposed</u> <u>mitigation</u>

There is no change to the level of confidence in the prediction of impacts and the success of the proposed mitigation.

h) <u>Public interest about the likely effect of the proposal, if implemented, on the environment, and public information that informs the EPA's assessment</u>

Forty nine comments were received during the 2-week public review period for the draft ESD. As mentioned previously, the main public concern about the Proposal centres on the potential for the Aboriginal rock art located in the surrounding area to be adversely affected by air emissions from the Proposal. EPA Services of the DWER is of the opinion that public interest in the Proposal will likely remain about the same regardless of the proposed changes.



... **Development Envelope** and Indicate

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Schedule 1

Change to Proposal

Table 1 Summary of the Proposal

Item	Detail
Proposal title	Perdaman Urea Project
Proponent name	Perdaman Chemical and Fertilisers Pty Ltd
Short description	The Proponent intends to construct and operate a urea plant with a production capacity of approximately 2 million tonnes per annum (Mtpa) on Sites C and F within the Burrup Strategic Industrial Area (BSIA) on the Burrup Peninsula.
	Natural gas for the urea plant will be sourced from a nearby domestic gas plant. The urea product will be transported via closed conveyor to the nearby Dampier Port for export via Panamax vessels.

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Overall extent of the Perdaman Urea Project	Figure 1	Clearing of no more than 73 ha within a Development Envelope of 106 ha.	
Gas Supply Pipeline	Figure 1	Clearing of 1 ha to link to existing gas pipeline easements.	
Sites C & F	Figure 1	Site C: Approximately 34 ha with clearing of up to 34 ha. Site F: Approximately 32.6 ha with clearing of up to 30 ha.	
		Causeway: Approximately 1.5 ha with clearing of up to 1.5 ha.	
Ammonia Plant	Figure 1	3,500 tpd nominal capacity - no 3rd party sales.	
Urea Production Plant	Figure 1	Footprint approximately 68.1 ha with clearing of up to 65.5 ha. 6,200 tpd nominal capacity, granulated product nominal 2.05 Mtpa.	
Infrastructure and Logistics Buildings	Figure 1	 including: Administration buildings; Operation control room; Maintenance workshop; Parts and materials warehousing; and Plant security. 	
Utility Block	Figure 1	 Air separation (~2,200 tpd); Power generation (~ 100 MW); Water treatment; Cooling water; Flare; Firefighting facilities; and Other utilities. 	
Hearson Cove Road realignment to the northern boundary of Site F	Figure 1	Approximately 4 ha with clearing of up to 4 ha including construction laydown.	

Element	Location	Proposed extent
Laydown associated with Construction	Figure 2	Clearing/fill of approximately 50 ha comprising of up to 21 ha in Site F and up to 29 ha across other construction elements.
Product Conveyor to Port	Figure 2	Closed conveyor along the existing East West Service Corridor (10ha) which is already disturbed.
		Clearing of 1 ha to connect from site boundary to the East West Service Corridor (3 options under consideration).
Product Storage Areas	Figure 2	<u>Ammonia</u> : Storage of a maximum of 10,000 tonnes capacity on plant site in refrigerated tank. <u>Urea (plant site)</u> : minimum 75,000 tonnes capacity, fully enclosed shed.
		Urea (port site): 75,000 tonnes capacity, fully enclosed shed.
Operational elements		
Gas Supply (Natural Gas)		130 terajoules per day supplied via a gas pipeline.
Urea Formaldehyde Input		11 ktpa approximately.
Power Supply		Internal generation.
Water Supply		25.2 GLpa from existing sea water supply by Water Corporation.
Stormwater		Stormwater will be treated and re-used on site to the fullest extent practicable.
Wastewater		Domestic wastewater will be treated and re-used on site. Any excess will be combined with saline water prior to being discharged into the existing Multi-User Brine Return Line (MUBRL), subject to agreement with the Water Corporation.
Saline Water Discharge		Up to approximately 20 GL/yr (including excess treated wastewater) will be discharged into the existing MUBRL, subject to agreement with the Water Corporation.
Solid Waste		Some solid waste from site water treatment residue to appropriate disposal site.
		Spent catalyst/resins to appropriate disposal sites.
		Construction waste streams to be recycled where such services are available from waste management contractors. Residual wastes to local landfill in accordance with landfill classification.
Energy Efficiency		Approximately 21 GJ/t urea (LHV). Approximately 5.1 Gcal/t urea (LHV).
Material Transport	Figure 1	Transport of urea (granules) through conveyor to Dampier Port along existing service corridor.
Urea Shiploading System	Figure 1	Travelling (closed) conveyor-fed, cantilever arm loader with direct discharge to ship hold via chute. Nominal loading capacity of 2,200 tonnes per hour.
Shipping	Figure 1	Urea 50-100 times per year, depending on destination port limits on vessel capacity.
Noise		< 35 dB(A) at nearest noise sensitive premises. < 65 dB(A) at plant boundary.
Air Emissions		
Oxides of Nitrogen (NO _x) (as NO ₂)		319 tpa approximately from power generation and fired heater.
Carbon Dioxide (CO ₂)		0.7 Mtpa approximately.

Eleme	ent	Location	Proposed extent	
			Includes 0.07 Mtpa of CO ₂ supplied in natural gas.	
Sulph	ur Dioxide (SO ₂)		5 tpa approximately.	
Metha	nne (CH4)		Traces, < 1 tpa.	
Ammo	onia (NH₃)		400 tpa maximum, to be minimised as practicable during detailed engineering design.	
Urea I	Particulates		353 tpa maximum, to be minimised as practicable during detailed engineering design.	
Metha	inol		< 1 tpa.	
Dust			Construction and fugitive operational emissions.	
Units ar	nd abbreviations			
dB(A) Gcal/t GJ/t GLpa GL/yr ha	decibels, A weighted gigacalories per tonne gigajoules per tonne gigalitres per annum gigalitres per year hectares	ktpa LHV Mtpa MW tpa tpd	kilotonnes per annum lower heating value million tonnes per annum megawatts tonnes per annum tonnes per day	



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