Government of Western Australia
Department of Environment Regulation

Works Approval

Environmental Protection Act 1986, Part V

Works Approval Holder: **Lanco Resources Australia Pty Ltd**

Works Approval Number: **W5722/2014/1**

Registered office: First Floor
677 Murray Street
WEST PERTH WA 6005

ACN: 147 835 452

Premises address: Bunbury Inner Harbour - Berth 14A
Estuary Drive
BUNBURY WA 6230
Being Lot 1 and Lot 2 on Plan 23101, Portion of Lot 428 on Plan 30984, Portion of Lot 963 and 965 on Plan 220558.
As depicted in Schedule 1

Issue date: Thursday, 15 October 2015

Commencement date: Monday, 19 October 2015

Expiry date: Sunday,18 October 2020

The following category/s from the *Environmental Protection Regulations 1987* cause this Premises to be a prescribed premises for the purposes of the *Environmental Protection Act 1986*:

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
58	Bulk material loading or unloading: premises on which clinker, coal, ore, ore concentrate or any other bulk granular material is loaded onto or unloaded from vessels by an open materials loading system.	100 tonnes or more per day.	144,000 tonnes per day (15 Million tonnes per annual period).

Conditions
This Works Approval is subject to the conditions set out in the attached pages.

Date signed: 15 October 2015
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Danielle Eyre
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Works Approval Conditions

1 General

1.1 Interpretation

1.1.1 In the Works Approval, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 In the Works Approval, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'annual period' means the inclusive period from 1 April until 31 March in the following year;

'AS 3580.14' means the Australian Standard AS 3580.14 Methods for sampling and analysis of ambient air – meteorological monitoring for ambient air quality monitoring applications;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means;
Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'Commissioning' means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with the design specification set out in the works approval application;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Works Approval;

'Schedule 1' means Schedule 1 of this Works Approval unless otherwise stated;

'Stage 1' means construction of the coal unloading, handling, reclaiming and ship loading facilities and the first 275 metres of the 750 metre long coal storage shed;

'Stage 2' means the construction of the remainder of the coal storage shed to the final length of 750 metres.

'Works Approval' means this Works Approval numbered W5722/2014/1 and issued under the Act;

'Works Approval Holder' means the person or organisation named as the Works Approval Holder on page 1 of the Works Approval;

1.1.3 Any reference to an Australian or other standard in the Works Approval means the relevant parts of the standard in force from time to time during the term of this Works Approval.

1.1.4 Any reference to a guideline or code of practice in the Works Approval means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Works Approval.

1.2 General conditions

1.2.1 The Works Approval Holder shall construct the works in accordance with the documentation detailed in Table 1.2.1:

Table 1.2.1: Construction Requirements[1]

Document	Parts	Date of Document
Works Approval Application Form	All	22 August 2014
Griffin Coal Lanco - Lanco Resources Australia Pty Ltd Works Approval: Berth 14A Supporting Information prepared by GHD reference 61/31006	All including tables, figures, specifications and Appendices	July 2014
Griffin Coal Lanco - Bunbury Coal Export Facility Dust collection Specification reference LC-0410-MS-SP-0123.docx	All	January 2013
Response to submissions in GHD correspondence.	All	10 November 2014
GHD letter response to interested party submissions.	All	5 December 2014
GHD letter confirming the dust control systems to be constructed.	All	12 March 2015
Lanco response to email titled “Commission plan and wastewater ponds”	All	5 June 2015

Note 1: Where the details and commitments of the documents listed in condition 1.2.1 are inconsistent with any other condition of this works approval, the conditions of this works approval shall prevail.

1.2.2 The Works Approval Holder shall install and maintain permanent markers along the boundary of the Premises so it can be identified on the ground.

1.2.3 The Works Approval Holder shall commission the coal unloading, handling, storage, reclaiming and ship loading for a maximum of 4 shipments of coal from the Port of Bunbury or for a period not exceeding 2 months, whichever occurs first.

1.3 Premises conditions

1.3.1 The Works Approval Holder shall construct the water treatment ponds so that:
(a) the permeability of the pond liners is < 1.0 x10^{-9} metres/second;
(b) the pond surface area is greater than 2.8 hectares; and
(c) there is at least a 2 metre vertical separation between the base of the ponds and the highest seasonal groundwater level.

2 Emissions

2.1 Fugitive emissions

2.1.1 The Works Approval Holder shall manage dust emissions from the Premises in accordance with the following documents (and any updates of those documents):
(a) Department of Environment and Conservation (2011) *Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites, Remediation and Other Related Activities*;
(b) Department of Health (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*.

2.2 Noise

2.2.1 The Works Approval Holder shall only carry out construction works approved under this Works Approval between the hours of 7:00 AM to 7:00PM Monday to Saturday (excluding Public Holidays).

3 Monitoring

3.1 Meteorological monitoring

3.1.1 The Works Approval Holder shall construct a meteorological monitoring station at the Premises that measure the parameters indicated in Table 3.1.1.

3.1.2 The Works Approval Holdershall undertake continuous meteorological monitoring in Table 3.1.1 according to the specifications and standards in that table.

Table 3.1.1: Meteorological monitoring

Monitoring station & location	Parameter	Units	Height	Method
Admin Building	Wind speed	m/s	10 m	AS 3580.14
	Wind direction	Degrees	10 m	
	Air temperature	°C	10 m	
	Relative humidity	%	> 2 m	
	Barometric pressure	hPa	Not specified	
	Rainfall	mm	> 0.3 m	

4 Improvements

4.1.1 The Works Approval Holder shall complete the improvements in Table 4.1.1 by the dates of completion in Table 4.1.1.

Table 4.1.1: Improvement program

Improvement reference	Improvement	Date of completion
IR1	The Works Approval Holder shall, prior to commencing commissioning of Stage 1, submit a commissioning plan to the CEO. The commissioning plan shall provide details relating to: (a) the commissioning stages and expected timescales for commissioning; (b) expected emissions and discharges during commissioning and the environmental implications of those emissions and discharges; (c) how emissions and discharges will be managed during commissioning; (d) the monitoring that will be undertaken during the commissioning period; (e)groundwater bores to monitor any seepage from the water treatment ponds or collection drainage system; (f) how accidents or malfunctions will be managed; (g) start up and shut down procedures; and (h) reporting proposals including accidents, malfunctions, and reporting against the commissioning plan. Commissioning shall be carried out in accordance with the commissioning plan.	3 months prior to commissioning of Stage 1.

IR2	The Works Approval Holder shall, prior to commencing commissioning of Stage 1, submit a Commissioning Air Quality Monitoring Plan to the CEO. The Commissioning Air Quality Monitoring Plan is to provide for intensive air quality monitoring during the commissioning process to determine the effectiveness of dust control management measures. The Commissioning Air Quality Monitoring Plan shall provide for monitoring to determine whether the air quality limit as set out below is being met at sensitive receptors. Parameter: PM10 Limit:50 µg/m^3 Averaging period: 24 hours Frequency: Continuous Standard: AS 3580.1.1 In the event the limit is exceeded as a result of activities on the premises, the plan shall provide for further investigation and remedial action. The Commissioning Air Quality Monitoring Plan is to include: (a) real time monitoring; (b) dust speciation to determine the type of dust; (c) continuous monitoring at the premises boundary; (d) continuous monitoring at sensitive receptors; (e) background monitoring to enable attribution of source; and (f) identification of sources of dust (within and outside the premises). The siting of ambient air quality monitoring equipment shall be in accordance with AS 3580.1.1	3 months prior to commissioning of Stage 1.
IR3	The Works Approval Holder shall undertake a noise assessment of the Premises during commissioning of Stage 1. A report on the noise assessment shall be prepared in accordance with Part 3 of the *Environmental Protection (Noise) Regulations 1997 (Noise Regulations).* The report shall be submitted to the CEO and shall include: (a) methods used for monitoring and modelling of noise; (b) an assessment of whether noise emissions from the Premises comply with the assigned noise level in the Noise Regulations; and (c) where they are not met, proposed measures to reduce noise emissions to assigned levels together with timescales for implementing the proposed measures.	1 month following completion of commissioning of Stage 1.
IR4	The Works Approval Holder shall submit an Operational Dust, Noise, Groundwater, Stormwater and Wastewater Monitoring Plan to the CEO. The Monitoring Plan shall include details relating to: (a)the equipment proposed and monitoring locations; (b) expected emissions and discharges during operations and the environmental implications of the emissions and discharges; (c) how emissions and discharges will be managed during operations; (d) the parameters and monitoring frequency that will be undertaken during the operations of this facility;	1 month following completion of commissioning of Stage 1.

	(e) how accidents or malfunctions will be managed; (f) start up and shut down procedures; and (g) reporting proposals including annual plan review, annual reporting, accidents, malfunctions and reporting against the operational licence.	

5 Information

5.1 Reporting

5.1.1 The Works Approval Holder shall submit a compliance document to the CEO, following the construction of each of Stage 1 and Stage 2 and prior to commissioning of the same.

5.1.2 The compliance document shall:
- (a) certify that the works were constructed in accordance with the conditions of the works approval;
- (b) be signed by a person authorised to represent the Works Approval Holder and contain the printed name and position of that person within the company; and
- (c) include final certified engineering drawings.

5.1.3 The Works Approval Holder shall submit a commissioning report for Stage 1 to the CEO within 1 month of the completion of commissioning.

5.1.4 The Works Approval Holder shall ensure the report includes:
- (a) a summary of the monitoring results recorded under conditions IR1, IR2 and IR3;
- (b) a list of any original monitoring reports submitted to the Licensee from third parties for the commissioning period;
- (c) a summary of the environmental performance of the coal unloading, handling, storage, reclaiming and ship loading facility as installed, against the design specification set out in the works approval application;
- (d) a review of performance against the works approval conditions; and
- (e) where they have not been met, measures proposed to meet the design specification and/or works approval conditions, together with timescales for implementing the proposed measures.

5.2 Notification

5.2.1 The Works Approval Holder shall ensure that the parameters listed in Table 5.2.1 are notified to the CEO and are in accordance with the notification requirements of the table.

Table 5.2.1: Notification requirements

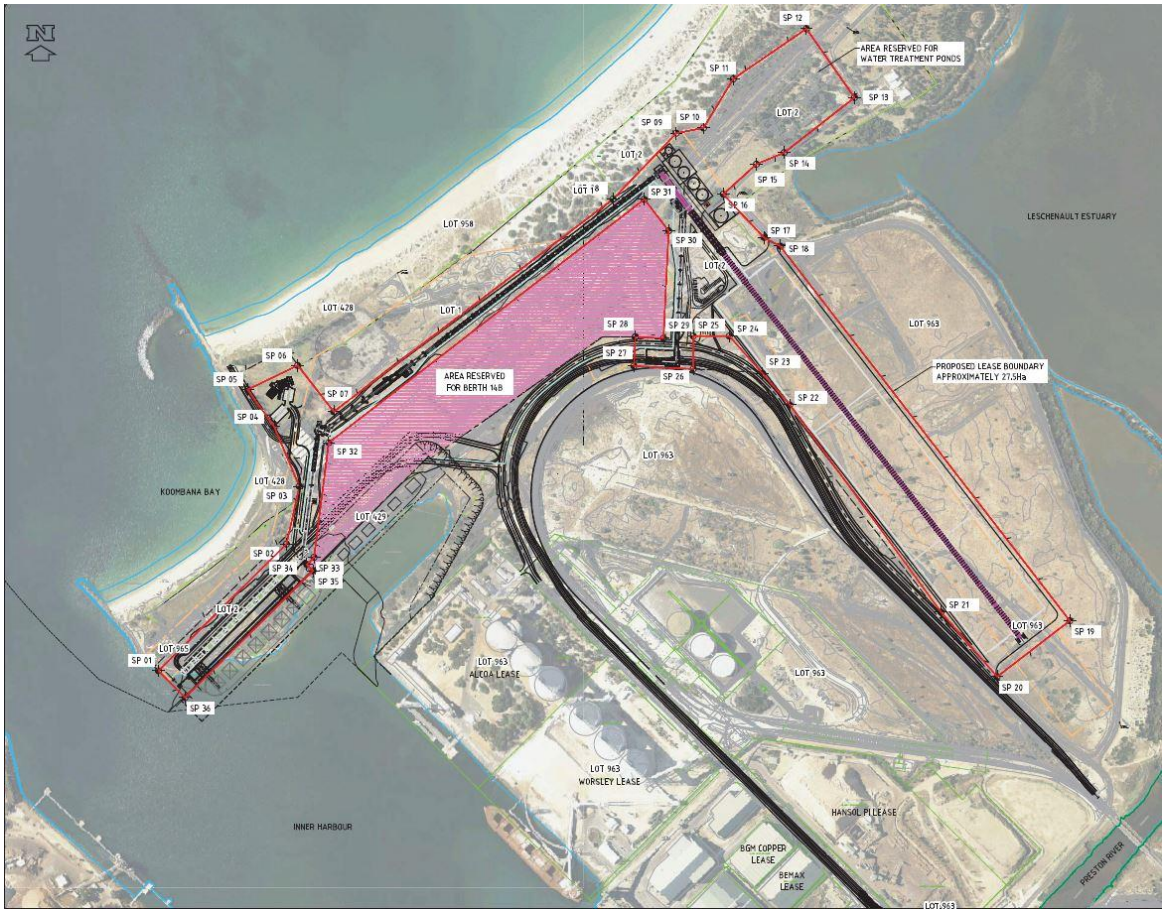
Condition or table (if relevant)	Parameter	Notification requirement	Format or form
1.2.1	Commencement of construction of Stage 1 infrastructure required by this Works Approval	10 working days prior to start	None specified
	Commencement of commissioning	7 days prior to start	
	Completion of commissioning	7 days after completion	

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The red line depicts the Premises boundary.


Snipping Tool
New
Cancel
Options
Select a snip type from the menu or click the New button.
AREA RESERVED FOR WATER TREATMENT PONDS
AREA RESERVED FOR BERTH 14B
PROPOSED LEASE BOUNDARY APPROXIMATELY 27.5Ha
LESCHENAULT ESTUARY
KOOMBANA BAY
INNER HARBOUR
ALCOA LEASE
WORSLEY LEASE
HANSOL PLLEASE
BGM COPPER LEASE
BEMAX LEASE
PRESTON RIVER
LOT 963
LOT 950
LOT 428
LOT 429
LOT 965
LOT 72
SP 01
SP 02
SP 03
SP 04
SP 05
SP 06
SP 07
SP 11
SP 12
SP 15
SP 16
SP 17
SP 18
SP 19
SP 20
SP 21
SP 22
SP 23
SP 24
SP 25
SP 26
SP 27
SP 28
SP 29
SP 30
SP 31
SP 32
SP 33
SP 34
SP 35
SP 36



MGA50 Coordinates of Premises Boundary

Point #	E-MGA50	N-MGA50	Point #	E-MGA50	N-MGA50
SP1	375184.8657	6312512.636	SP19	376730.227	6312615.195
SP2	375399.6541	6312730.496	SP20	376608.1164	6312518.694
SP3	375420.4479	6312828.591	SP21	376511.7181	6312627.4
SP4	375376.4107	6312929.637	SP22	376251.057	6312976.434
SP5	375330.9091	6312992.045	SP23	376204.2222	6313029.376
SP6	375413.2388	6313034.019	SP24	376147.0217	6313092.214
SP7	375477.2379	6312956.08	SP25	376085.9356	6313091.521
SP8	375946.9694	6313322.576	SP26	376086.5705	6313035.56
SP9	376053.2406	6313435.832	SP27	375985.769	6313039.56
SP10	376099.3359	6313445.255	SP28	375987.5775	6313089.016
SP11	376148.9137	6313529.06	SP29	376035.3842	6313087.275
SP12	376272.0184	6313615.794	SP30	376042.0355	6313269.861
SP13	376354.931	6313499.724	SP31	376000.2015	6313322.756
SP14	376236.5927	6313404.791	SP32	375469.4713	6312903.352
SP15	376189.6982	6313384.649	SP33	375446.6375	6312708.439
SP16	376134.1721	6313333.115	SP34	375434.5398	6312696.143
SP17	376204.0444	6313260.438	SP35	375445.2192	6312685.573
SP18	376231.7069	6313246.018	SP36	375230.4309	6312467.714

Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Lanco Resources Australia Pty Ltd

Works Approval: W5722/2014/1

Registered office:	First Floor 677 Murray Street WEST PERTH WA 6005
ACN:	147 835 452
Premises address:	Bunbury Inner Harbour - Berth 14A Estuary Drive BUNBURY WA 6230 Being Lot 1 & 2 on Plan 23101 & Portion of Lot 963 on Plan 220558
Issue date:	Thursday 15 October 2015
Commencement date:	Monday 19 October 2015
Expiry date:	Sunday 18 October 2020

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) has decided to issue a works approval. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Works Approval and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by:	Neville Welsh Senior Licensing Officer
Decision Document authorised by:	Danielle Eyre Senior Manager, Resource Industries

Contents

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application for a works approval or licence, and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☒ New Licence ☐ Licence amendment ☐ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises.	**Category number(s)**	**Assessed design capacity**
	58 Bulk Material Loading or Unloading (Other Than Salt)	144,000 tonnes per day
Application verified Application fee paid	Date: 01/08/2014 Date: 22/08/2014	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☒ No☐	
Commercial-in-confidence claim outcome	Appendix I of Works Approval application documentation was determined to be commercial in confidence and not provided to other third parties.	
Is the proposal a Major Resource Project?	Yes☒ No☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☒ No☐	Referral decision No: 1886 Managed under Part V ☐

		Assessed under Part IV ☒
Is the proposal subject to Ministerial Conditions?	Yes☒ No☐	Ministerial statement No: 972 EPA Report No: 1486
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☒ No☐ Department of Water consulted Yes ☒ No ☐	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☐ No☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes☐ No☒ If Yes, include details here, e.g. Site is subject to SO_2 requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

Lanco Resources Australia Pty Ltd (Lanco) proposes to develop the Bunbury Port Berth 14A Expansion and Coal Storage and Loading Facility within the Bunbury Port Inner Harbour. The proposal involves the development of a berth pocket and associated on-shore coal storage and export infrastructure to accommodate the export of 15 million tonnes of coal per year. The Bunbury Port is an existing operating harbour and the proposal is consistent with the Bunbury Port Authority's Inner Harbour Structure Plan gazetted and approved in 2009.

In order to process the increased volume of coal, new rail infrastructure, coal handling and ship loading arrangements are required at Bunbury Port. The proposed coal handling facility is designed to receive coal by rail and unload either directly to a berthed ship or to the enclosed stockpile shed, which will allow up to a six day supply of stockpiled coal. The stockpiled coal would act as a buffer between the unloading and loading processes to ensure a waiting ship is loaded as quickly as possible, as well as allowing train unloading to proceed if a ship is not available.

Other infrastructure to be established includes road modifications to connect the train unloading and administration and workshop buildings, a drainage collection system leading to a water treatment plant and sedimentation basins, and stormwater capture capabilities to supplement process water and a stormwater control system.

The primary environmental consideration with the proposal relates to emissions of coal dust during conveyance and storage activities. Fugitive coal dust may be generated during material handling activities at train receival, unloading, conveying, storage and during ship loading. All conveyors will be fully enclosed with dust collection systems, including dust suppression and baghouses on transfer towers, storage sheds and bin buildings prior to ship loading. Other environmental considerations include noise emissions during construction, management and treatment of stormwater and runoff from coal storage sheds, and disturbance of acid sulfate soils during construction of the rail unloading facility.

The nearest sensitive receptors include two residential areas located approximately 1.1 km south west and 1.6 km to the east, in addition to the Dolphin Discovery Centre and Koombana beach approximately 1.4 km to the west (being popular public recreational areas). The majority of complaints received by DER regarding inner harbour operations are from the main urban residential area of East Bunbury.

DER has assessed the risk from emissions to be manageable as detailed in the Decision Table, and Appendix 1 and 2. A works approval will be issued for 5 years. Lanco proposes to commission the coal export through Berth 14A by trialling four shipments to identify and monitor the best operational procedures ensuring reduced emissions and discharges during operations. Once construction and commissioning has been completed, Lanco will be required to apply for an operational licence to authorise category 58 bulk material loading or unloading activities to facilitate the export of up to 15 million tonnes of coal per annum.

The licence assessment will be finalised upon receipt of the works approval compliance certificate, plus confirmation that modelled noise and dust emission levels are being achieved and operational validation of the dust collection, dust suppression, wastewater treatment plant and wastewater treatment ponds.

4 Decision table

All applications are assessed under the *Environmental Protection Act 1986*, the Environmental Protection Regulations 1987, DER's Operational Procedures on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision table.

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
General Conditions	W1.2.2 L1.2.6	**Construction** The premises boundary forms part of Lot 1 & 2 on Plan 23101 & Portion of Lot 962 and 963 on Plan 220558 and is not easily identifiable at ground level. Therefore W1.2.3 has been added to the works approval to require the proponent to install and maintain permanent markers along the boundary of the premises so that it can be identified at ground level. As the boundary extends into the Inner Harbour, markers are only considered necessary on land for reasons of practicality. **Commissioning and Operation** L1.2.6 will be applied to the licence requiring the maintenance of premises boundary markers installed during the works approval construction period to ensure the markers are maintained during commissioning and operations.	Application supporting documentation General provisions of the *Environmental Protection Act 1986*.
	W1.2.4 & WIR1	**Commissioning** The applicant has applied to commission the works for a period of four shipments within 1 month and has committed to submitting a commissioning plan prior to commencing this phase of the project. Improvement condition WIR1 is included in the works approval requiring the timely submission of the commissioning plan. W1.2.5 has been included to ensure commissioning is undertaken for either four shipments or a period not exceeding 2 month whichever occurs first.	Application supporting documentation

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
	L1.2.4	**Operation** DER's assessment and decision making in relation to stormwater and wastewater collection system is included in Appendix A.	Application supporting documentation
Premises Operations	N/A L1.3.1, L1.3.2 - L1.3.4	**Construction and Commissioning** There are no specific conditions relating to Premises Operations required in the works approval. **Operation** A licence condition shall ensure only coal is shipped through Berth 14A. Another licence conditions will require further assessment if other bulk materials than coal is proposed to be exported through Berth 14A. There is a potential for coal to be spilt on the ship and/or onto the Berth during ship loading operations and these licence conditions will ensure protocols are in place, mindful of weather conditions, to collect those spillages to prevent coal entering the environment. Details of DER's assessment of spilt coal caused by the ship loader is included in fugitive dust emissions Appendix C.	Application supporting documentation
Emissions general	W2.1.1	**Construction** *Emission*: Dust emissions from construction works. *Impact*: the area is a registered contaminated site and there may therefore be potential for impacts on human health from dust emissions from construction works. *Controls*: no specific construction dust management measures identified in the Works Approval application documents. Risk Assessment *Consequence:* Moderate *Likelihood:* Possible *Risk Rating:* Moderate	Application supporting documentation

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
	L2.1.1	Condition W2.1.1 requires that dust emissions be managed in accordance with the Department of Environment and Conservation (2011) *Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites and other Related Actiivities* and the Department of Health (2009) *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia*. These guidelines detail appropriate measures for management of construction dust from sites where contaminants may be present. Residual Risk *Consequence:* Moderate *Likelihood:* Rare *Risk rating:* Moderate **Commissioning and Operation** Descriptive limits for emissions general will be set through licence condition requiring recording, reporting, investigation and mitigation of limit exceedances.	
Point source emissions to air including monitoring	N/A W1.2.1, W3.1.1, W3.1.2, W5.1.1, W5.1.2, WIR1, WIR3, L2.2.1	**Construction** There are no specific conditions of works approval relating to point source emissions to air during construction. **Commissioning and Operation** *Emission:* Coal dust emissions to Air from baghouses. *Impact:* Coal dust emissions can be harmful to human health and the environment. Coal dust exposures can lead to illnesses such as pneumoconiosis or silicosis leading to Chronic Obstructive Pulmonary Disease (COPD) includes bronchitis and emphysema affecting the lung tissue causing lung disease. The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana Bay. *Controls:* The works approval application and supporting documentation includes a series of four (4) dust collection baghouses constructed at the rail unloading vault, coal storage shed,	Application supporting documentation Application supporting documentation

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
		shuttle and bin buildings. Controls and management measures incorporated for the baghouses ensure that the filter has a performance guarantee of no more than 20mg/m^3 particulates, that bag filters can be changed out during operations and that waste bins are interchangeable during operations. All wastes from the baghouses will be returned to coal storage shed or disposed at a landfill that is authorised to accept coal dust wastes. Risk Assessment *Consequence:* Moderate *Likelihood:* Possible *Risk Rating:* Moderate Condition WIR1 will be included in the works approval to ensure adequate management of point source coal dust emissions to air during commissioning. Commissioning will be conducted at 30% to 70% to 100% throughput with baghouses fully operational during commissioning and operational phases. Residual Risk *Consequence:* Moderate *Likelihood:* Rare *Risk rating:* Moderate Abnormal operations of baghouse extraction system is included in DER's assessment and decision making in relation to point source emmissions to air in Appendix B.	
Point source emissions to surface water including monitoring	N/A WIR3, W5.1.5 & W5.1.6 L2.3.1, L2.4 & L3.1, L3.3, L3.4, L3.8 &	**Construction** There is no point source emissions to surface water proposed in the application during construction works. **Commissioning and Operation** The wash down process water collection system is enclosed with no discharge to surface water proposed. However abnormal operations is included in DER's assessment and decision making in relation to point source emissions to surface water in Appendix A.	Application supporting documentation *Environmental Protection (Unauthorised Discharges) Regulations, 2004*

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
	L5.1 – L5.2		
Point source emissions to groundwater including monitoring	N/A	**Construction and Operation** There is no point source emissions to groundwater proposed in the application. Acid Sulfate soils will be managed by a management plan submitted by the applicant and approved during the EPA assessment of the project.	Application supporting documentation *Acid Sulfate Soil management Plan*
Emissions to land including monitoring	N/A	**Construction and Operation** There are no emissions to land proposed in the application.	Application supporting documentation
Fugitive emissions	W1.2.1 & Table W1.2.1 W2.1.1, WIR1 & WIR3, L2.6.1 & L2.6.2, L3.8	**Construction and Operation** DER's assessment and decision making in relation to fugitive emissions is included in Appendix C.	Application supporting documentation
Odour	N/A	**Construction and Operation** Odour is not expected during construction or the operation phase. No specified conditions relating to odour emissions or the monitoring of such emissions are required to be added to the works approval or licence.	Application supporting documentation

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
Noise	W2.1.2, W1.2.1, WIR2, WIR3, W5.1.1, W5.1.2 & W5.1.3 L2.8 & L3.8	**Construction** DER's assessment and decision making in relation to noise emissions is included in Appendix D. **Commissioning and Operation** DER's assessment and decision making in relation to abnormal operations causing noise amenity emissions is included in Appendix D.	*Environmental Protection (Noise) Regulations, 1997.* Application supporting documentation
Monitoring general	WIR1 - WIR3 W5.1.4 – W5.1.6 L3.1.1 – L3.1.4	**Construction, Commissioning and Operation** General Monitoring conditions have been incorporated into improvement conditions WIR1, WIR2 & WIR3. Standard monitoring conditions will be added to the licence following the review of the report required by works approval condition WIR3, W5.1.4 - W5.1.6. and have been discussed in Appendix A to D.	N/A
Monitoring of inputs and outputs	L3.6	Monitoring of coal shipments is required to ensure it is reported annually. Therefore a specific licence condition relating to the volume of coal exported will be included in the licence when commissioning throughputs have been confirmed.	N/A
Process monitoring	N/A	There are no specific conditions relating to process monitoring.	N/A
Ambient quality monitoring	WIR2 & WIR3 L3.8	Results of any elevated dust, noise, land or water resource monitoring will be compared against weather conditions to substantiate any future licence conditions limits.	N/A
Meteorological monitoring	W3.1.1 – W3.1.2 and Table W3.1.1 L3.9.1	**Commissioning** Meteorological monitoring is required under works approval conditions 3.1.2 and discussed in detail in the point source emissions to air and fugitive emissions in Appendix B & C. **Operations** Meteorological monitoring will also be required as conditions of licence.	N/A

DECISION TABLE			
Works Approval / Licence Section	**Condition Number W = Works Approval L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference Documents**
Improvements	WIR1, WIR2, & WIR3,	A commission plan, noise assessment and emissions monitoring plan are all improvements identified and assessed in the decision table or within Appendix A to D	Application supporting documentation
Information	W5.1.1 – W5.1.6 L5.1 – L5.2	W5.1.5 and W5.1.6 have been added to the works Approval to ensure the wastewater treatment plant and ponds system plus the groundwater bore construction is designed and fit for purpose as part of the process water circuit and assessed within Appendix A. Standard conditions are listed on the Works Approval for the submission of a compliance document at the end of the construction phase and the requirement to notify DER when commissioning commences and is completed. Standard reporting conditions for an Annual Monitoring Report and Annual Audit Compliance Report will also be included as conditions of the operating Licence.	Application supporting documentation General provisions of the *Environmental Protection Act 1986*
Works Approval duration	N/A	The works approval will be issued for a 5 year period given the construction required to complete the harbour berth pocket, land back berth and harbour entrance approved ~~by the OEPA~~under Part IV of the Environmental Protection Act 1986 will occur prior to the coal facility construction.	N/A

5 Advertisement and Consultation Table

Date	Event	Comments received/Notes	How comments were taken into consideration
01/09/2014	Application advertised in West Australian	Two submissions received regarding: conceptual plans in application, confirmation that 15Mtpa is the maximum throughput, Kwinana operations comparisons, dust monitoring networks, noise monitoring during construction and operations, rail loop design, enclosed conveyor and storage shed design, ship loader dust controls, stakeholder liaison including consultation timeframes and, Berth pocket and channel construction noise management.	Comments clarified with third party's and concerns addressed during assessment by requesting Improvement conditions WIR1 – WIR3 plus W5.1.5 and W5.1.6 and seeking clarification on the consultative process completed by the applicant. A Bunbury port users meeting convened by the applicant in November 2014 to clarify the project details.
11/9/2014	Department of Water (DoW) – referred copies of Hydrogeological Assessment Report and Stormwater Management Report	Requested opportunity to comment on reports and the draft licence prior to it being issued. No comments received from DoW prior to issuing draft instrument.	N/A
5/11/2014	Summary of submissions provided to Applicant	DER requested a response to summarised submissions which was received on 28 November 2014.	Applicant's response provided on 10 November and addressed concerns of point source coal dust emissions to air, contaminated stormwater management and nuisance noise assessment by drafting improvement conditions WIR1 to WIR3, which identify measure, mitigate and report emissions during commissioning. Commitments made in response to submissions have been included as construction requirements in Table 1.2.1 of the Works Approval.

Date	Event	Comments received/Notes	How comments were taken into consideration
28/11/2014	Meeting with Bunbury port users	On 5 December 2014, applicants provided correspondence outlining the meeting outcomes.	Assessed against the application and strengthened the application information provided as part of the application documentation.
~~dd/mm/yyyy~~2/9/2015	Proponent sent a copy of draft instrument	Comments received on ~~XX/XX/2015~~.10 September 2015. Proponent sought clarification in regard to staging of construction.	~~Awaiting comments~~The Works Approval now includes more explicit wording on this matter.

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

Premises operation – stormwater and washdown (process) water collection system

A description of the washdown (process) water and coal contaminated wastewater collection and treatment processes is included in Appendix E.

During commissioning and normal operations there is no discharges proposed from the washdown (process) water. As process water is used to wash down the coal infrastructure and, because it is within a closed collection system and recycling system, then any spent washwater is directed back into the process water circuit. Stormwater will be used to make up any shortfall volumes of washdown (process) water supplies or uncontaminated stormwater is discharged via infiltration basin.

Emission Risk Assessment - Abnormal Operations – Contaminated Stormwater

Emission: Potentially Coal-contaminated stormwater could discharge to the environment should the stormwater drainage collection system receive coal contaminated water.

Impact: Coal leachate could reduce pH, deposit sulphides and hydrocarbons plus soluble metals contaminants to the surrounding soils, wetlands, groundwater, estuarine and marine environments. The Inner Harbour, Koombana Bay and Leschenault Estuary is in proximity of the premises boundary. Coal leachate is acidic, causing physical impacts to ecosystems and increasing the solubility of metal contaminants. Heavy metal contaminants are toxic to aquatic ecosystems at low concentrations and can bioaccumulate within ecosystems to higher concentrations.

Controls: The proponent proposes to direct uncontaminated stormwater to infiltration basins with sufficient capacity to collect extreme weather events (1 in 10 year storm) and include controls and management measures such as;

- Ensuring the stormwater collection, process and washdown water systems are separate engineered collection systems.
- Adequately designed, constructed and maintenance of the stormwater drainage system which extends the length of the coal facility plus amenity facilities and all hardstand areas.
- Ensure the land back berth is sloped away from marine environment towards the stormwater drainage collection system within the stormwater drainage catchment.
- Collection and control of roof catchment stormwater is integral part of process water supply design and will not divert excessive stormwater to infiltration basins unless water source is uncontaminated.
- Maintenance programs to collect and remove particulate material from the stormwater drainage collection system and catchment; and,
- Routine inspections and checking stormwater drainage system and infiltration basin for indications of sedimentation and/or contamination by coal.

Risk Assessment
Consequence: Major
Likelihood: Unlikely
Risk Rating: Moderate

Regulatory Controls

Stormwater from the land back berth reports away from the marine waters and into the series of drainage sumps. Any contaminated stormwater is then mechanically pumped to the water treatment plant for processing and returns as reuse process water. When the process water supply tanks are full then treated stormwater will be released to the environment via a series of hydrodynamic separators that remove particulate matter from the water with final capture into infiltration basins. As indicated by the Works Approval documentation, there is no direct discharge of contaminated stormwater to the ocean, estuary or rivers.

The applicant will demonstrate that monitoring of the discharges from stormwater collection system into infiltration basins has minimal contamination to the environment. This will be achieved by the preparation and implementation of a monitoring program following commissioning of the stormwater collection system. The monitoring program will include the measurement of water quality received at the infiltration basins and measure the nearby groundwater quality.

Works Approval condition WIR3 requires the water quality comparisons as described in the works approval application documentation, including the construction of stormwater infiltration basins plus groundwater monitoring wells and and will include descriptions of the monitoring locations, parameters, frequency and maintenance program for the engineered collection system.

Condition W5.1.6 requires the proponent to submit a Groundwater Monitoring Bore Construction Plan that will identify monitoring bores locations around the stormwater collection drainage system.

Licence conditions L3.8.1 to L3.8.3 will be required to manage or detect any risk relating to leachate quality and sediment quality and will describe the monitoring frequency and parameters and identify water quality parameters and limits based on the background monitoring provided by the proponent and to ensure emissions remain acceptable.

Licence Conditions L5.1 and L5.2 identify what information and the necessary standards of information to be reported including the structure of the reports to identify annual emission values.

Residual Risk
Consequence: Moderate
Likelihood: Rare
Risk Rating: Moderate

Emissions Risk Assesment - Abnormal Operations – Contaminated Washdown (Process) Water overtopping containment ponds.

Emission: Washdown (process) water contaminated with coal leachate may escape to the environment should the wastewater containment ponds overtop.

Impact: Coal leachate could reduce pH, deposit sulphides and hydrocarbons plus soluble metals contaminants to the surrounding soils, wetlands, groundwater, estuarine and marine environments. The wastewater treatment ponds are in close proximity of the Leschenault Estuary. Coal leachate is acidic, causing physical impacts to ecosystems and increasing the solubility of metal contaminants. Heavy metal contaminants are toxic to aquatic ecosystems at low concentrations and can bioaccumulate within ecosystems to higher concentrations.

Controls: Coal leachate from washdown is collected in an engineered collection system separate from the stormwater collection system and reports to the waste water containment ponds. The ponds are designed as described in the works approval documentation to settle and decant sediments. Overtoping of the ponds will be controlled by;

- Adequate design, sizing, construction and maintenance of wastewater treatment system where washdown water is collected and treated.
- Water balance provide by the applicant indicates that of 42ML/yr of process water about 74% or 31ML/yr consists of washdown water with the potential to create leachate. Regular monitoring of the water quality will occur prior to and following treatment of water for reuse.
- Ensuring particulate material and sediments within the containment ponds is regularly removed, recycled or disposed,
- Ensuring waste water treatment ponds are constructed to acceptable standards with suitable liners, (i.e. *WQPG3 – Water Quality Protection Guideline No. 3 – Liners for Waste Containment (Water and Rivers Commission, 2000)* and *WQPN26 – Water Quality Protection Note No. 26 Liners for containing pollutants, using synthetic membranes (Department of Water, 2013)*.
- Routine inspections and checking the integrity of containment liners.

- Prevent overtoping by maintaining a 300mm freeboard on all waste containment ponds.
- Monitoring of water quality for the presence of contaminants resulting from sedimentation noting that synthetic liners can be damaged if exposed for prolong periods to aggressive chemicals. Noted by the use of Australian and New Zealand guidelines for fresh and marine water quality – 2000.
- Sufficient containment pond control to prevent uncontrolled discharge to environment. This will be achieved by an emergency spillway being included in final pond design.
- Sedimentation Basin maintenance and solid waste discharge operational plan. The removal of solid waste should be undertaken ensuring no damage to containment liners and the wastes recycled back to product storage or disposed at approved landfill facility.

Risk Assessment
Consequences: Major
Likelihood: Unlikely
Risk rating: Moderate

Regulatory Controls

Washdown water containing coal particulate under the right conditions, can form leachate which may impact the environment if they are discharged. To reduce the risk of this occurring the waste containment ponds will be constructed to include a surface area of 2.5 Ha using HDPE doubling lined structures. An emergency spillway, to control emergency releases, plus a 300 mm freeboard be maintained on all containment ponds is required in the final pond designs. Monitoring of the leachate levels in the containment ponds will be required as licence conditions and reported in the annual reports.

Condition WIR3 will require the leachate contaminated wastewater described in the works approval application documentation, to be tested at designated locations for parameters, at frequencies and includes the preparation of a wastewater containment ponds maintenance program to reduce coal sediment within the containment ponds.

Works Approval condition L5.1.5 will require the final engineered design to be provided to DER for the containment ponds, wastewater treatement plant and washdown water collection system plus the stormwater collection system.

Licence conditions L2.4, L3.3 & L3.4 may be included in the licence to measure the water quality in the containment pond plus potential emissions of water that will be guided by the monitoring information provided in the report required by condition WIR3.

L3.8.1 to L3.8.3 will be added to the Licence to include monitoring of emergency spillway discharges including water quality limits, parameters, monitoring frequency at controlled discharge points.

L5.1 and L5.2 identify the standards of information to be reported annually and the structure of the annual and audit reports as conditions of the licence.

Residual Risk
Consequences: Minor
Likelihood: Rare
Risk rating: Low

Emissions Risk Assesment - Abnormal Operations – Contaminated Washdown (Process) Water failure of wastewater containment pond liner.

Emission: Washdown (process) water contaminated with coal leachate may escape to the environment should the wastewater containment ponds liner fail.

Impact: Coal leachate could reduce pH, deposit sulphides and hydrocarbons plus soluble metals contaminants to the surrounding soils, wetlands, groundwater, estuarine and marine environments.

The wastewater treatment ponds are in close proximity of the Leschenault Estuary. Coal leachate is acidic, causing physical impacts to ecosystems and increasing the solubility of metal contaminants. Heavy metal contaminants are toxic to aquatic ecosystems at low concentrations and can bioaccumulate within ecosystems to higher concentrations.

Controls: Coal leachate from washdown is collected in an engineered collection system separate from the stormwater collection system and reports to the waste water containment ponds. The ponds are designed as described in the works approval documentation to settle and decant sediments.

Liner failure will be controlled by routine inspections and checking the integrity of containment liners and monitoring of groundwater quality for the presence of contaminants resulting from coal.

Ensuring particulate material and sediments within the containment ponds is regularly removed by vacuum trucks will control the potential for the coal sediments leachate to damage the synthetic liners when exposed for prolong periods to aggressive chemicals. This includes the implementation of Sedimentation Basin Maintenance and Solid Waste Operational Plan.

Risk Assessment
Consequences: Major
Likelihood: Unlikely
Risk rating: Moderate

Regulatory Controls

Washdown water containing coal particulate under the right conditions, can form leachate which may impact the environment if they are discharged. To reduce the risk of this occurring the waste containment ponds will be constructed to include a surface area of 2.5 Ha using HDPE doubling lined structures. An emergency spillway, to control emergency releases, plus a 300 mm freeboard be maintained on all containment ponds is required in the final pond designs. Monitoring of the leachate levels will be required in the licence conditions and reported in the annual reports.

Condition W5.1.5 require the Works Approval holder to provide a report on the specification and construction of the water treatment plant and waste water containment ponds.

Condition W5.1.6 required the Works Approval holder to provide a groundwater monitoring bore construction plan identifying well locations in relation to the wastewater containment ponds, the bore design and background parameters in relation to leachate quality.

Licence conditions L2.4, L3.3 & L3.4 included in the licence to measure the water quality of potential emissions to groundwater and will be guided by the monitoring information provided in the report required by condition WIR3.

L3.8.1 to L3.8.3 will be added to the Licence to manage or detect any risk relating to groundwater quality and describe the monitoring frequency, parameters and identify limits to groundwater quality parameters.

L5.1 and L5.2 identify the standards of information to be reported annually and the structure of the annual and audit reports as conditions of the licence.

Residual Risk
Consequences: Minor
Likelihood: Rare
Risk rating: Low

Appendix B

Emissions Risk Assessment - Point source emissions to air - Abnormal operations of baghouse/s

Emission Description

Emission: Coal dust emissions from abnormal operations may only occur should the baghouses fail or malfunction.

Impact: Coal dust emissions can be harmful to human health and the environment. Elevated total suspended particulates (TSP) can impact ambient environmental quality resulting in amenity impacts and can smother vegetation. Particulate matter that are less than 10 (PM_{10}) or 2.5 ($PM_{2.5}$) micrometres in diameter can be drawn deep into the lungs causing human health impacts. Such exposures can lead to illnesses such as Pneumoconiosis or silicosis leading to Chronic Obstructive Pulmonary Disease (COPD) includes bronchitis and emphysema affecting the lung tissue causing lung disease. The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana Bay.

Controls: The proposal includes a series of four (4) dust collection systems constructed at the rail unloading bunker, coal storage shed, shuttle building and bin building. Controls and management measures incorporated for the baghouses ensure that the filter has a performance guarantee of no more than 20mg/m^3 particulates, that bag filters can be changed out during operations and that waste bins are interchangeable during operations. All wastes from the baghouses will be disposed at authorised landfill to accept coal dust wastes.

Risk Assessment
Consequence: Moderate
Likelihood: Unlikely
Risk Rating: Moderate

Regulatory Controls

Condition W1.2.1 of the Works Approval specify the works are constructed in accordance with the works approval documents and to the applicable standards and codes. Condition W2.1.1 & W2.1.2 will be included in the works approval to ensure adequate management of point source dust emissions during construction and commissioning.

W3.1.1 & W3.1.2 will be included in the works approval to ensure meteorological monitoring occurs during commissioning and operations to relate climatic impacts versus dust emissions should a failure occur.

W5.1.1 and W5.1.2 ensure the construction works are certified to meet required standards and codes and final baghouse specifications plus as constructed specifications and commissioning monitoring will be required when the compliance documentation is submitted.

WIR1 will be included in the Works Approval to ensure adequate management of emissions to air during commissioning. Commissioning will be conducted at 30% to 70% to 100% throughput with baghouses fully operational during commissioning.

L2.2.1 shall specify that pollution control equipment (baghouses) shall be operated and maintained to manufacturer's specifications as a condition of licence. Other conditions including operational alarms will also be be included in the Licence.

Residual Risk
Consequence: Moderate
Likelihood: Rare
Risk rating: Moderate

Appendix C

Fugitive Emissions

Construction
Emission: Fugitive dust from topsoil stripping of land, excavation, worksites, movement of vehicles around the premises and wind erosion of exposed surfaces are the main emissions during construction.

Fugitive dust is dependent on the area of land exposed, moisture content of soil and weather conditions. Dust, or total suspended particulate matter (TSP) is comprised of coarse particulate matter (CPM), which is generally comprised of particles greater than 10 µm in diameter, and the respirable fraction comprised of particles less than 10 µm in diameter (PM_{10}). The majority of dust generated during the construction of the facility will comprise course particle sizes.

Impact: Fugitive dust emissions can be harmful to human health and the environment. Elevated TSP levels can impact ambient environmental quality resulting in amenity impacts and can smother vegetation. PM_{10} or $PM_{2.5}$ can be drawn deep into the lungs causing human health impacts. The chemical and physical properties of the particles, the size of the particles and the duration of exposure are all factor which may affect human health impacts. The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana Bay.

Controls: To manage and control fugitive dust emissions during construction works, the proponent has committed to the following:

- Prepare and implement a Construction Environmental Management Plan (CEMP) which identifies and manages potential discharges during the construction phase of this project;
- Use of water carts and water sprays to suppress dust when low soil moisture conditions require it especially during summer months i.e. September to May;
- Imposing speed limits in areas of the worksite that have had topsoil disturbed or removed;
- Consideration of weather conditions for topsoil stripping and soils disturbance activities;
- Implementation of the cut and fill plan as prepared for the PER assessment; and
- Construction of sealed hardstands as identified in the Works Approval documentation dated July 2014.

Risk Assessment
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Regulatory Controls

The applicant's commitments in the CEMP will reflect the monitoring and environment management strategies proposed during construction of the coal facility.

Standard conditions W1.2.1 specifies that works are constructed in accordance with the works approval documents and W2.1.1 will ensure emissions do not interfere with surrounding land uses and dust management is prioritised as per the commitments of the works approval documentation.

Residual Risk
Consequence: Minor.
Likelihood: Unlikely.
Risk Rating: Moderate.

Commissioning and Operation
Emission: Fugitive dust from semi enclosed train unloading and end of chute at the ship loader plus the climatic conditions at the time may cause coal product to become fugitive during commissioning

and operations. When uncontrolled, the amount of dust emitted will be dependent on the conveyor operations and weather conditions at the time.

Impact: Coal dust, or total suspended particulate matter (TSP) is comprised of coarse particulate matter (CPM), which is generally comprised of particles greater than 10 µm in diameter, and the respirable fraction comprised of particles less than 10 µm in diameter (PM_{10}). The majority of dust generated during the commissioning and operation of the coal facility will comprise course particles. These emissions can be harmful to human health and the environment. Elevated TSP levels can impact ambient environmental quality resulting in amenity impacts and can smother vegetation. PM_{10} or $PM_{2.5}$ can be drawn deep into the lungs causing human health impacts. The chemical and physical properties of the particles, the size of the particles and the duration of exposure are all factor which may affect human health if subjected to long term continuous exposure to coal dust. Such exposures can lead to illnesses such as Pneumoconiosis or silicosis leading to Chronic Obstructive Pulmonary Disease (COPD) includes bronchitis and emphysema affecting the lung tissue causing lung disease. The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana Bay.

Controls: Controls and management measures to reduce dust emissions when handling coal include;

- All conveyors and transfer towers will be fully enclosed,
- All coal storage sheds will be fully enclosed with dust extraction systems,
- Conveying systems have the ability to extract coal dust.
- Enclosed conveyors are fitted with dust suppression sprinkler system.
- The separation distance of coal facility to nearest receptor is from 1.12km to 1.6km.
- Coal material handled at the facility will have moisture content around 24%.
- Use of an enclosed luffing ship loader boom and telescopic snorkel ship loader chute allows loading to occur below the rim of ship hold.

Risk Assessment
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Regulatory Controls
The inclusion of standard condition W2.1.1 to the works approval ensures emissions do not interfere with surrounding land uses and dust management is prioritised as per the commitments of the proponent by their works approval documentation.

Monitoring and management of coal dust during commissioning is expected as a requirement of commissioning plan required by condition WIR1. The commissioning will be required to compare coal dust emissions with increasing throughputs from 30% to 70% to 100% and report those findings with proposed management strategies if required.

WIR3 has been included as a condition of Works Approval to ensure adequate monitoring programs are prepared following the commissioning monitoring program confirms the works approval documentation identified emissions.

L2.6.1 and L2.6.2 will be included in the Licence to ensure adequate management of fugitive coal dust emissions crossing the Premises boundary during commissioning and operation.

The monitoring outcomes presented in WIR3 may lead to operational monitoring licence conditions (L3.8) to measure fugitive coal dust emissions should construction or commissioning indicate abnormal emissions.

Residual Risk
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Appendix D

Emission Risk Assessment - Noise emissions

Construction
Emission: Emissions from heavy machinery, vehicle movements across the Premises, and general infrastructure construction such as land clearing, top-soil stripping, earth works, drainage construction can generate nuisance noise during construction when received by the local community.

Impact: Noise emissions can cause nuisance and a reduced quality of life and health for human populations, particularly when the source is located near sensitive receptors. Noise can affect the psychological status of human population nearby in terms of emotional stress, anger and physical symptoms. Frequency, intensity, duration, meteorological conditions and distance to receptor are all factors which may affect the impact of noise emissions on sensitive receptors.

The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana Bay. Predicted noise levels during construction are 50 – 100% of the assigned levels under the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) during normal operating conditions (7:00AM – 7:00PM), and may exceed day-time assigned levels at some receptors under worst case meteorological conditions.

Controls: To manage and control noise emissions during construction works, the proponent has committed to the following,

- Vehicles and Equipment will be inspected and maintained so that mufflers, noise enclosures (where fitted) are in working order,
- Construction Environmental Management Plan (CEMP) will identify management strategies to mitigate noisy construction tasks,
- The applicant has an objective to undertake construction of the coal facility at least 5dB below the sound power level of the Environmental Protection (Noise) Regulation 1997 to ensure compliance,
- Construction work being carried out in accordance with noise practices set out in section 6 of AS2436; and,
- The equipment used for the construction is the quietest reasonably available.

Risk Assessment
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Regulatory Controls
Regulation 13 of the *Environmental Protection (Noise) Regulations 1997* provides that construction work on a construction site, carried out between the hours of 7:00 AM and 7:00 PM on any day which is not a Sunday or public holiday, need not comply with the prescribed standards, providing the work is carried out in accordance with AS 2436 and the equipment used is the quietest reasonably available. In the absence of a DER-endorsed Construction Noise Management Plan and to avoid confusion, W2.1.2 has been included on the Works Approval to ensure construction works are only carried out between these hours.

DER's CEO may request the Works Approval holder prepare a 'construction noise management plan' at any time should the amenity noise become intrusive upon the community.

Residual Risk
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Noise emissions

Commissioning and Operation
Emission: Noise from ship loader, electric pumps, fans and other fixed plant during ship loading could cause nuisance noise if emissions reach the local community.

Impact: Excessive noise emissions can cause amenity nuisance and reduce quality of life and health for human populations, particularly when the source is located near sensitive receptors. Noise can affect the psychological status of human population in terms of emotional stress, anger and physical symptoms. Frequency, intensity, duration, meteorological conditions and distance to receptor are all factors which may affect the impact of noise emissions on sensitive receptors.

The nearest sensitive receptor is located approximately 1.12km to the south west, 1.60km to the east and 1.35km to the west at the Discovery Holiday Park in Koombana bay. Predicted noise emissions from modelling indicate the potential for exceedance at sensitive receptors during night time operations. Noise levels during operations are likely to be 20 – 50% of the assigned day/night time levels during normal operating conditions if managed appropriately, and noise levels during worst case meteorological conditions are predicted to be marginally compliant (50 – 100%).

Controls: To manage and control noise emissions during commissioning and operations, the proponent has committed to the following;

- Ensure the sound power levels of infrastructure used in the modelling are not exceeded,
- Reduce the initial project number of ship loaders from two to one loader only,
- Investigate procedures for monitoring noise emissions during commissioning; and,
- Record and respond to noise complaints.

Risk Assessment
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Regulatory Controls
The Works Approval holder has a legislative requirement to comply with the assigned noise levels at all times as set in the Noise Regulations when commissioning and operating the facility.

Condition W1.2.1 specifies that works are constructed in accordance with the works approval documents and to the applicable standards and codes as assessed by DER. WIR2 includes noise conditions in the Works Approval to confirm noise modelling predictions and compliance with the Noise Regulations. Works Approval condition WIR3 requires the preparation of noise monitoring programs which will be submitted by applicant to confirm the likely licence conditions to be imposed.

W5.1.1, W5.1.2 & W5.1.3 ensure the works are certified to meet compliance with amenity noise levels set by the Noise Regulations and propose the noise monitoring program to be implemented as licence conditions L3.8.

Likely licence conditions will require the addition of noise limits for evening and night time ship loading operations, noise monitoring location/s, and licence conditions reflecting the noise monitoring program identified by the report required by condition WIR2 and WIR3.

Residual Risk
Consequence: Moderate.
Likelihood: Possible.
Risk Rating: Moderate.

Appendix E

Premises operation – Process Water and Contaminated Wastewater

Description

The Lanco coal facility water management objectives as documented in the works approval application indicated significant reduction in the quantity of water mobilising coal and forming leachate because the coal conveyors, storage, transport areas at rail unloading vault and coal ship loading conveyors will be fully enclosed and not open to climatic conditions including stormwater. The major water objective at the Lanco facility aims to keep separated any contaminated process water from clean stormwater from roof and hardstand drainage areas. Contaminated water will not be discharged from the Lanco facility and therefore will not require assessment.

Lanco intends to capture and store rainfall from roof catchments, supplemented with groundwater this will become the process wash water supply for the facility.

Process water will be used for wash down infrastructure and supplement the dust suppression systems in the storage sheds, coal reclaimer, conveyor transfer stations and coal conveyors which may become leachate contaminated. All wash down and coal dust suppression water will be captured in containment ponds and treated at the waste water treatment plant then recycled back to the process water circuit. Collected rainfall and groundwater will be used to make up any shortfalls in process water.

All captured (leachate contaminated) process water will be mechanically diverted from the wastewater treatment ponds where sediments are separated then water gravity feeds to a decant pond where it is mechanically pumped to the wastewater treatment plant, then dosed and neutralised. The water quality is then tested for suitability and stored within process water tanks.

Potable water for the coal administration and amenity facility, ship water and fire a service is sourced from public drinking water supply (scheme water).

Uncontaminated stormwater will be discharged to infiltration basins constructed within the premises boundary as described in the works approval documentation.

As identified by the works approval documentation, wastewater treatment ponds shall be fully lined when constructed plus shall include a network of groundwater monitoring bores encircling the ponds to monitor groundwater quality and provide an assurance that the ponds do not discharge to the environment. Requirements will be included in the works approval to report the construction details of the groundwater monitoring networks plus wastewater treatment plant, wastewater ponds and provide evidence of their permeability following construction and prior to commissioning.

Below is a schematic of the stormwater and process water circuit.