



Works Approval

Environmental Protection Act 1986, Part V

Works Approval Holder: Pilbara Sands Holdings Pty Ltd

Works Approval Number: W5883/2015/1

Registered office: Level 19, 144 Edward Street
BRISBANE QLD 4000

ACN: 153 555 447

Premises address: Wilga Granite Quarry - Phase 4
Part of Tenement M45/1249
Great Northern Highway
PORT HEDLAND WA 6721
as depicted in Schedule 1

Issue date: Thursday, 8 October 2015

Commencement date: Monday, 12 October 2015

Expiry date: Thursday, 11 October 2018

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
12	Screening etc. of material: premises (other than premises within category 5 or 8) on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated	50,000 tonnes or more per year	1,825,000 tonnes per annual period

Conditions

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

Date signed: 8 October 2015

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Alana Kidd
Manager Licensing – Resource Industries
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*;

'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;

'Works Approval' means this Works Approval numbered W5883/2015/1 and issued under the Act; and

'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 Requirements¹

Document	Parts	Date of Document
Works Approval Application Form	All	14 April 2015
Wilga Granite Quarry – Phase 4. Works Approval Supporting Information. Operations Licence. Prepared by Serah Manoni, Pilbara Sands Holding Pty Ltd. File Ref: M451249_Ph4_WASI_v1	All, including Drawings and Appendices	April 2015
Email correspondence from Serah Manoni, Pilbara Sands Holding Pty Ltd, entitled “CPS 6591/1 - Pilbara Sands Holdings Pty Ltd - Wilga Granite Quarry Project - NVCP granted”, received 13 July 2015 at 8:26 AM	All	13 July 2015
Email correspondence from Serah Manoni, Pilbara Sands Holding Pty Ltd, entitled “Tenement details”, received 21 July 2015 at 1:53 PM	All	21 July 2015
Email correspondence from Serah Manoni, Pilbara Sands Holding Pty Ltd, entitled “Tenement details”, received 30 July 2015 at 9:15 AM	All	30 July 2015
Email correspondence from Serah Manoni, Pilbara Sands Holding Pty Ltd, entitled “Dust management”, received 10 August 2015 at 7:56 AM	All	10 August 2015
Email correspondence from Serah Manoni, Pilbara Sands Holding Pty Ltd, entitled “ Approved production/extraction limit for M45/1249”, received 20 August 2015 at 2:50 PM	All	20 August 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 commission the Phase 4 site and associated works for a period not exceeding 3 months.

2 Information

2.1 Reporting

- 2.1.1 The Works Approval Holder shall submit a compliance document to the CEO, following the construction of the Phase 4 site and prior to commissioning of the same.

- 2.1.2 The compliance document shall:

- (a) certify that the works were constructed in accordance with the conditions of the Works Approval; and
- (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.

2.2 Notification

- 2.2.1 The Works Approval Holder shall ensure that the parameters listed in Table 2.2.1 are notified to the CEO and are in accordance with the notification requirements of the table.

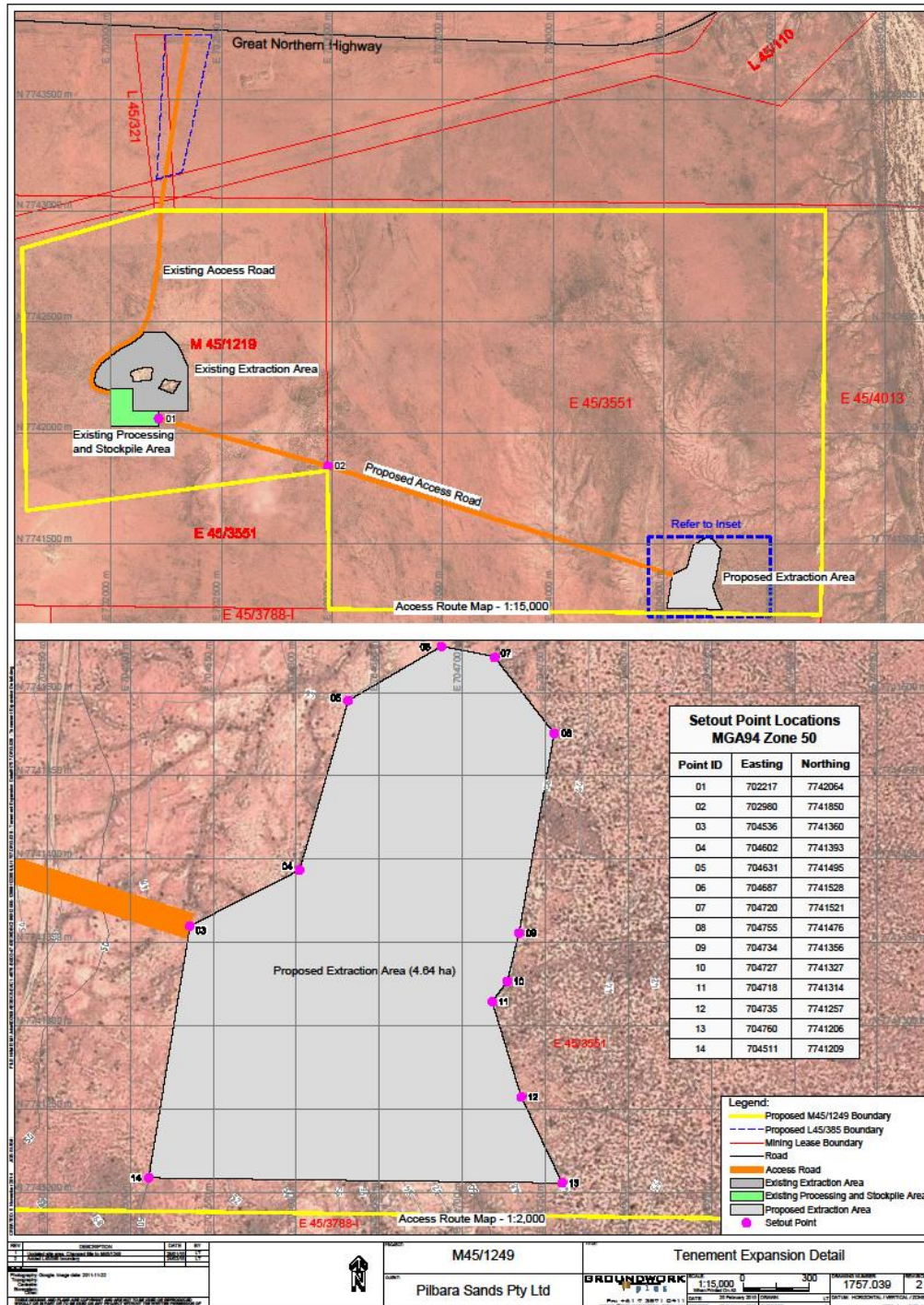
Table 2.2.1: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement	Format or form
1.2.2	Commencement of commissioning	7 days prior to start	None specified
	Completion of commissioning	7 days after completion	

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The grey-shaded area labelled 'Proposed Extraction Area' depicts the Premises boundary for the Phase 4 site. The location of the existing Wilga Granite Quarry (Existing Extraction Area) within tenure M45/1249 (yellow line) is also shown.





Decision Document

Environmental Protection Act 1986, Part V

Proponent: **Pilbara Sands Holdings Pty Ltd**

Works Approval: **W5883/2015/1**

Registered office: Level 19, 144 Edward Street
BRISBANE QLD 4000

ACN: 153 555 447

Premises address: Wilga Granite Quarry - Phase 4
Part of Tenement M45/1249
Great Northern Highway
PORT HEDLAND WA 6721

Issue date: Thursday, 8 October 2015

Commencement date: Monday, 12 October 2015

Expiry date: Thursday, 11 October 2018

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: Ty Hibberd
Licensing Officer

Decision Document authorised by: Alana Kidd
Manager Licensing



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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application 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 <input checked="" type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	12	1,825,000 tonnes per annual period
Application verified	Date: 10/08/2015	
Application fee paid	Date: 25/08/2015	
Works Approval has been complied with	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Compliance Certificate received	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: N/A Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.		



3 Executive summary of proposal and assessment

Pilbara Sands Holdings Pty Ltd (Pilbara Sands) operates the Wilga Granite Quarry under Licence L8840/2014/1 for Category 12 prescribed activities under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regs). The site is located approximately 27 kilometres (km) west from the district boundary of Port Hedland in the Tabba Tabba region of Western Australia within tenure M45/1249.

The Wilga Granite Quarry involves the extraction and processing of granite crushed rock from an area of approximately 12 hectares (ha) to the west of M45/1249. However, Pilbara Sands are proposing to expand their works to include mining of a granite outcrop approximately 2.0 km east-southeast of the existing quarry site also within M45/1249. The mining of this outcrop, termed 'Phase 4' in Pilbara Sands site development plan, is required to meet particular product specifications that could not be achieved from the existing approved extraction areas (i.e. Phase 1 and Phase 2 approved areas under L8840/2012/1).

The Phase 4 site will consist of a conventional open pit, a mobile crushing and screening (C&S) plant and various heavy-duty vehicles (e.g. excavators, dump truck etc.). The maximum C&S plant capacity is 5,000 tonnes per day with a maximum throughput of 1,825,000 tonnes per annum (tpa). The anticipated throughput of the C&S plant is 2,700 tonnes per day with an estimated total in the vicinity of 1,000,000 tpa. The Phase 4 site exceeds the production or design capacity of 50,000 tpa for Category 12 under the EP Regs. No additional infrastructure is required for the Phase 4 site. All mobile plant and machinery will be sourced from the existing quarry. Similarly, no additional workshops, crib rooms, toilet facilities etc. will be required as the Phase 4 Project area is in close proximity to the existing quarry site. No hydrocarbons will be stored onsite. Instead, a mobile service truck will attend the site daily and fuel all plant and equipment onsite as required.

Approval for the Phase 4 site and an extraction limit of 1,000,000 tpa were granted by the Department of Mines and Petroleum in March 2015.

The main emissions from Phase 4 site will be fugitive dust and noise. The nearest potential sensitive receptor other than the existing Wilga Quarry Granite (2 km west) is the town of Port Hedland approximately 27 km west. Since the operation will be located far from the nearest sensitive receptor, impacts are likely to be minimal.

Due to Pilbara Sands management commitments, including a site specific Environmental Management Plan, the environmental risk of emissions and discharges from the Phase 4 site are low.

Pilbara Sands will need to submit a compliance document to DER after construction of the Phase 4 site and prior to commissioning of the same. Pilbara Sands will need to apply to amend Licence L8840/2014/1 to expand the premises boundary and to increase the capacity of Category 12 to allow C&S operations to commence at the Phase 4 site following commissioning.



4 Decision table

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

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	W1.2.1, W1.2.2 and W2.2.1	Construction and Commissioning Condition W1.2.1 will require Pilbara Sands to construct the Phase 4 site in accordance with the supporting documents and general provisions of the <i>Environmental Protection Act 1986</i> . Condition W1.2.1 has been included to allow Pilbara Sands to commission the Phase 4 site C&S plant for a period not exceeding 3 months. Condition W2.2.1 requires Pilbara Sands to notify the CEO upon the commencement and completion of commissioning. During the commissioning period, Pilbara Sand will need to apply to amend the operating Licence L8840/2014/1 to include the operation of the Phase 4 site.	General provisions of the <i>Environmental Protection Act 1986</i> . Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4.
Premises operation	Licence conditions.	Construction, Commissioning and Operation DER's assessment and decision making are detailed in Appendix A.	Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4. <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i> .



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Emissions general	N/A.	Construction, Commissioning and Operation There are no conditions relating to general emissions during construction, commissioning or operation.	N/A.
Point source emissions to air including monitoring	N/A.	Construction, Commissioning and Operation There are no proposed point source emissions to air during construction, commissioning or operation of the Phase 4 site. Therefore no conditions relating to point source emissions to air or to monitoring of these emissions are required to be added to the Works Approval or Licence.	N/A.
Point source emissions to surface water including monitoring	N/A.	Construction, Commissioning and Operation There are no proposed point source emissions to surface water during construction or operation of the Phase 4 site. Pilbara Sands has committed that no discharges to surface water will occur from the Phase 4 site. The nearest surface water body is Tabba Tabba Creek approximately 1 km east of the project site. No conditions relating to point source emissions to surface water or monitoring of surface water are required to be added to the Works Approval or Licence.	Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4. <i>Environmental Protection (Unauthorised Discharges) Regulations 2004.</i>
Point source emissions to groundwater including monitoring	N/A.	Construction, Commissioning and Operation There are no proposed point source emissions to groundwater during construction, commissioning or operation of the Phase 4 site. The hydrogeology of the Phase 4 site is described as 'rocks of low permeability, fractured and weathered rocks – local aquifers' and are highly likely to contain very little groundwater outside of localised fractured zones. Pilbara Sands was unable to confirm the distance to groundwater. At nearby Tabba Tabba Quarry, approximately 5 km north-northeast, the distance to groundwater is approximately 24 m below ground level. A similar groundwater depth is likely for	Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4. <i>Environmental Protection</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		the Phase 4 site. Accordingly, the Phase 4 activities are not expected to intercept regional groundwater, although some minor compartmentalised groundwater may be encountered. No conditions relating to point source emissions to groundwater or the monitoring of groundwater are required on the Works Approval or Licence.	<i>(Unauthorised Discharges) Regulations 2004.</i>
Emissions to land including monitoring	N/A.	Construction, Commissioning and Operation There are no proposed emissions to land during construction, commissioning or operation of the Phase 4 site. No conditions relating to point source emissions to land or the monitoring of emissions to land are required to be added to the Works Approval or Licence.	N/A.
Fugitive emissions	N/A.	Construction, Commissioning and Operation DER's assessment and decision making are detailed in Appendix B.	Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4. General provisions of the <i>Environmental Protection Act 1986</i> Australian Standard AS 4282-1997: <i>Control of the obtrusive effect of outdoor lighting.</i>
Odour	N/A.	Construction, Commissioning and Operation There are no specific conditions relating to odour during construction, commissioning or operation.	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
Noise	W1.2.1	Construction, Commissioning and Operation DER's assessment and decision making are detailed in Appendix C.	Application supporting documentation. Pilbara Sands Environmental Management Plan – Phase 4. <i>Environmental Protection (Noise) Regulations 1997.</i>
Monitoring general	N/A.	Construction, Commissioning and Operation There are no specific conditions relating to general monitoring required during construction, commissioning or operation of the Phase 4 site.	N/A.
Monitoring of inputs and outputs	N/A.	Construction, Commissioning and Operation There are no conditions relating to monitoring of inputs and outputs required during construction, commissioning or operation of the Phase 4 site.	N/A.
Process monitoring	N/A.	Construction, Commissioning and Operation There are no conditions relating to process monitoring required during construction, commissioning or operation of the Phase 4 site.	N/A.
Ambient quality monitoring	N/A.	Construction, Commissioning and Operation There are no conditions relating to ambient quality monitoring required during construction, commissioning or operation of the Phase 4 site.	N/A.
Meteorological monitoring	N/A.	Construction, Commissioning and Operation There are no conditions relating to meteorological monitoring required during construction, commissioning or operation of the Phase 4 site.	N/A.
Improvements	N/A.	Construction, Commissioning and Operation There are no conditions relating to improvements.	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
Information	W2.1 Licence conditions.	Construction, Commissioning and Operation Standard Works Approval conditions will require Pilbara Sands to submit a compliance document to DER once construction of the Phase 4 site has been completed. Standard Licence conditions will require annual and non-annual reporting. No additional conditions are required.	N/A.
Licence duration	N/A.	This works approval will be issued to Pilbara Sands for a period of 3 years. After construction of the Phase 4 site is complete, Pilbara Sands will need to submit a compliance document to DER and apply to amend Licence L8840/2014/1 to allow C&S operations to commence at the Phase 4 site following commissioning	N/A.



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
31/08/2015	Application advertised in West Australian (or other relevant newspaper).	Nil comments received.	N/A.
20/08/2015	Proponent sent a copy of draft instrument.	Pilbara Sands comments received on 21/08/2015. Nothing to action.	N/A.



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

General conditions

Emission Description

Emission: Stormwater possibly contaminated with hydrocarbons from operations and hydrocarbon spills into the surrounding environment.

Impact: Contamination of surrounding land and nearby Tabba Tabba Creek (approximately 1 km east).

Controls: No hydrocarbons will be stored on the Phase 4 site. However, spillages from mobile plant (e.g. hydraulic hose breakage) or during filling from mobile service trucks are possible. Pilbara Sands has committed to implementing a range of measures to minimise the risk of hydrocarbon discharge and stormwater contamination including:

- Constructing access road to freely drain at or near ground level using compacted base coarse on access roads where necessary;
- Prevent, and where not possible to prevent, minimise the contact of incident rainfall and stormwater runoff with wastes or other contaminants;
- Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable;
- All surface water runoff from the areas utilised for the operation and product stockpiles will be directed to either the quarry pit sump or sediment basin to be contained for site re-use or for treatment before being control released;
- Water collected in the sediment basin(s) will be recycled to the maximum extent practical (e.g. dust suppression and watering rehabilitated areas);
- Any necessary on-site maintenance is to be undertaken in an area where contaminants cannot be released to surrounding receiving waters;
- All hazardous materials, chemicals and food product wastes generated on-site are stored under cover or with appropriate safeguards; and
- Rehabilitation of disturbed areas and final benches will be undertaken progressively to the extent practicable.

Risk Assessment

Consequence: Minor

Likelihood: Unlikely

Risk Rating: Moderate

Regulatory Controls

W1.2.1 requires that Pilbara Sands construct the works in accordance with the supporting documentation and general provisions of the *Environmental Protection Act 1986*. The existing Licence has conditions relating to effective stormwater management at the Wilga Granite Quarry. No further conditions are required for the Works Approval or Licence.

Residual Risk

Consequence: Minor

Likelihood: Rare

Risk Rating: Low



Appendix B

Fugitive Emissions

a) Dust

Activities at the Phase 4 site can generate dust that, if inadequately controlled, has the potential to cause nuisance and cause offsite impacts, such as smothering of vegetation. Activities on-site that may generate dust emissions include:

- Wind action on topsoil stockpiles and disturbed areas;
- Topsoil stripping, blasting, extraction and transportation (earthmoving machinery ground-interaction, materials digging, rehabilitation works, loading and dumping, haul truck tyre/unsealed road interaction, unsealed roads, material spillage from haul trucks);
- C&S operations; and
- Product stockpiling and dispatch (stockpiles and stockpile pads, product loading, truck tyre-road interaction, material spillage from trucks).

Emission Description

Emission: Dust emissions produced from excavation, screening and crushing activities.

Impact: 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 (PM) that is less than 10 (PM₁₀) or 2.5 (PM_{2.5}) micrometres (µm) in diameter 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 factors which may affect human health impacts.

Controls: Given Pilbara Sands management commitments and the significant buffer distance between the Phase 4 site and the nearest sensitive receptor, being the town of Port Hedland approximately 27 km west, the works are unlikely to cause nuisance dust. To manage and control fugitive dust emissions from the Phase 4 site, Pilbara Sands has committed to the following infrastructure and management practices:

- Dampening down of cleared areas, extraction working areas, haul roads, stockpiles and other hardstand areas by water spraying when visual surveillance indicates excessive dust generation and propagation from mobile sources;
- Restricting vehicle and mobile machinery movements to designated routes and hardstand areas.
- Temporarily re-vegetating topsoil stockpiles;
- Water sprays to be utilised on the crusher and screens, where appropriate;
- Limiting blasting, topsoil and overburden removals at any one time to that necessary while providing for effective production of aggregates/product;
- Utilising the surrounding natural or man-made topography/structures as a wind break, where practicable;
- Restricting vehicle and mobile machinery movements to designated routes and hardstand areas and reduce vehicle speeds on unsealed internal roads if dust emission from roads are visually excessive (e.g. less than 40 km per hour);
- Covering all loads of material and clearing of spillage from side rails, tailgates and draw bars of trucks (following loading and tipping);
- Leveling of loads prior to truck exit;
- Installing a riffle bar/vibration grid;
- Ensuring employees and contractors are aware of dust minimisation practices;
- Daily visual surveillance of control measures to ensure system performance accords with design and implementation criteria; and
- Applying good housekeeping practices.



The Proponent has also implemented a number of performance measures whereby dust and particulate matter will not exceed the following levels when measured at the boundary of the nearest sensitive receptor:

- Dust deposition of 120 milligrams per metre square per day (mg/m²/day), when monitored in accordance with Australian Standard AS3580.10.1;
- Total suspended particulate (TSP) less than 100 micrograms per cubic metre (µg/m³) over a 24-hour averaging time, when monitored in accordance with Australian Standard AS2724.3; and
- An aerodynamic diameter of less than 10 µm (PM₁₀) suspended in the atmosphere of 50 µg/m³ over a 24 hour averaging time when monitored in accordance with Australian Standard AS3580.9.6.

To ensure compliance with these targets, Pilbara Sands has engaged South West Occupational Health (SWOH) to conduct quarterly external dust monitoring. Pilbara Sands will report SWOH's findings, including exceedances of the performance targets, in their Annual Environmental Report. In accordance with Mines Safety Legislation, Pilbara Sands have also appointed a Dust Ventilation Officer who has completed an *Industrial Foundation for Accident Prevention* (IFAP) recognized course.

Risk Assessment

Consequence: Insignificant

Likelihood: Possible

Risk Rating: Low

Regulatory Controls

Pilbara Sands management commitments and general provisions of the *Environmental Protection Act 1986* are considered sufficient to manage the risk of fugitive dust. No specific conditions are required for the Works Approval or Licence.

Residual Risk

Consequence: Insignificant

Likelihood: Possible

Risk Rating: Low

b) Light

Emission Description

Emission: Light emissions from extraction and processing operations.

Impact: Nuisance lighting impacting on nearby residences and potentially sensitive fauna communities occurring in the region including the Northern Quoll.

Controls: Given Pilbara Sands management commitments and the significant buffer distance between the Phase 4 Project and the nearest sensitive receptor (Port Headland Townsite), the works are unlikely to cause nuisance light. The hours of operation will be from 6am to 6pm as standard practice. We would like the ability to work 24 hours to allow us to fulfill larger contracts should they be secured. To manage and control fugitive light emissions from the Phase 4 site, Pilbara Sands has committed to the following light suppression methods:

- Do not over light Quarry areas;
- Where possible, direct light downwards, not upwards, to illuminate an area;
- Avoid placing lights near light reflective surfaces;
- Using lights of appropriate luminosity for the area to be lit;
- Switch off lights when not required for safety, security or enhancement of a night-time scene, and consider the use of sensor switches where practicable; and
- Lighting which complies with Australian Standard AS 4282-1997 *Control of the obtrusive effect of outdoor lighting*.



Risk Assessment

Consequence: Insignificant

Likelihood: Possible

Risk Rating: Low

Regulatory Controls

Pilbara Sands management commitments and general provisions of the *Environmental Protection Act 1986* are considered sufficient to manage the risk of fugitive light. No specific conditions are required for the Works Approval or Licence.

Residual Risk

Consequence: Insignificant

Likelihood: Possible

Risk Rating: Low



Appendix B

Noise

Emission Description

Emission: Noise emissions associated with construction (clearing) and operation of the Phase 4 site.

Impact: Pilbara Sands has identified that there may be noise impacts to potentially sensitive fauna communities occurring in the region including the Northern Quoll. Limited impacts to human receptors are expected as the separation distance to the nearest noise-sensitive premises (Port Headland Townsite) is approximately 27 km.

Controls: Pilbara Sands has committed to complying with the *Environmental Protection (Noise) Regulations 1997* and general provisions of the *Environmental Protection Act 1986* during operations, and have imposed adequate measures, including a significant buffer distance, to comply with legislation. Pilbara Sands will also implement the following measures to suppress noise:

- Position the processing plant away from adjacent noise sensitive receptors as far as practicable;
- Positioning of stockpiles and ancillary equipment such as generators, and C&S plant, so as to prevent undue noise amenity impacts on surrounding noise sensitive receptors;
- Positioning the crushing plant and associated noisy equipment to utilise the surrounding natural or man-made topography (i.e. quarry pit) as an acoustic barrier, where practicable;
- Enclosing fixed engines, generators, pumps and compressors, where practicable;
- Operating and maintaining modern, well maintained road worthy product delivery trucks fitted with high-efficiency mufflers;
- Shutting down equipment when not in use;
- Fitting broadband reversing alarms rather than audible sirens or beepers, on mobile equipment where practicable; and
- Avoiding unnecessary operation of plant or revving of mobile or stationary motors and engines.

Risk Assessment

Consequence: Insignificant

Likelihood: Rare

Risk Rating: Low

Regulatory Controls

The Phase 4 site is subject to, and expected to comply with, the *Environmental Protection (Noise) Regulations 1997* and general provisions of the *Environmental Protection Act 1986*.

Residual Risk

Consequence: Insignificant

Likelihood: Rare

Risk Rating: Low