Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

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

Works Approval Number	W6916/2024/1
Applicant	Bossong Engineering Pty Ltd
ACN	009 337 508
File number	DER2024/000113
Premises	618 Exploration Road GAP RIDGE WA 6714 Legal description - Lot 618 on Deposited Plan 424915 Exploration Road, Gap Ridge
Date of report	5 June 2024
Decision	Works approval granted

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction of metal finishing facility at 618 Exploration Road, Gap Ridge (the 'premises'). As a result of this assessment, works approval W6916/2024/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Application summary and overview of premises

On 13 March 2024, the Bossong engineering Pty Ltd (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to Category 88: metal finishing at the premises, which is located about 8.3 km southwest of Karratha.

The premises relates to the category and assessed production / design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in works approval W6916/2024/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6916/2024/1.

Bossong Engineering intend to develop the site to provide specialised machining processes to the oil and gas industry operating out of the Karratha and Dampier area. Three primary covered factory workshops (1,494 m^2) and two secondary Dome Shelters (432 m^2) will be constructed on the site (Bossong Engineering, 2024).

A key activity of the proposed operations is metal coating treatment with manganese phosphate, commonly called phosphate conversion coating, or phosphating. Phosphating is a common treatment practice whereby a chemical coating is applied to steel parts that creates a thin adhering layer of manganese phosphates, to achieve corrosion resistance, lubrication, or as a foundation for subsequent coatings or painting, and is one of the most common types of conversion coating. Machining operations will take place in Workshop 1 and support processes (i.e., metal treatment with manganese phosphate coating) and drill rod storage will be undertaken in the yard.

The proposed operation intends to manganese phosphate treat both newly manufactured tools (at a maximum rate of 500 per year) and re-conditioned tools (at a maximum rate of 5,000 per year) for the Oil & Gas and mining industries.

3. Risk assessment

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

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

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction which have been considered in this decision report are detailed in Table 1 below. Table 1 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 1: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction of new buildings (factory workshops and dome shelters) Installation of Manganese Phosphate tank and machines Movements of trailers and trucks	Air / windborne pathway	The speed limit on the construction site will be 8 km/h for safety and to minimise dust produced by vehicle movements. Construction time will be between 7am and 6pm during the day. Water Carts and/or sprinklers will be employed to control dust in the event it is produced during the construction process.
Noise			Construction time restricted to between 7am and 6pm during the day.
Operation			
Air emissions (water vapour, hydrogen gas and odour)	Chemical reactions occurring in the phosphating tank (between phosphoric acid (H2PO4) and manganese ions (Mn2+))	Air / windborne pathway	Tanks will be turned off when not in use. Polymer balls will be added to the tank and float on top of the solution. The balls insulate the surface of the tank and significantly reduce vapour discharge. A Silicon rubber impregnated fiberglass cover is drawn over the top of the tank by a timing belt mechanism and can be retracted to the space behind the tank when tools are to be dipped into the manganese phosphate solution. An electric motor will be installed to open and close the cover controlled by an open and close switch controlled by the operator.
Manganese phosphate	Leaks/loss of containment potentially contaminating soils/vegetation	Seepage/ infiltration	Tank will be installed within an enclosure with a hard cover and drum bund, within a workshop with a concrete floor.
Contaminated stormwater	Stormwater contaminated from contact with factory floor during heavy storm events	Overland Run-off Seepage/ infiltration	Stormwater drainage easement located at the rear of the site that will provide detention and treatment of stormwater runoff from the site during heavy rainfall events.

3.1.2 Receptors

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

Table 2: Sensitive human and environmental receptors and distance from prescribed activity.

Human receptors	**Distance from prescribed activity**
Accommodation camp	Is approximately 1.2 km east of the Premises Screened out of the assessment due to separation distance from the proposed activities and potential emissions.
Environmental receptors	**Distance from prescribed activity**
Threatened and/or priority flora	Is approximately 6.5 km north-west of the Premises. Screened out of the assessment due to separation distance from the proposed activities and potential emissions.
Native vegetation	About 350 m to the east of the premises boundary toward Seven Mile Creek.
Groundwater	The Premises is located within the Proclaimed Pilbara Groundwater Area. Depth to groundwater is unknown.
Surface water features – Seven Mile Creek	About 700 m east of the premises The Premises is located within the Proclaimed Pilbara Surface Water Area.

Figure 1 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental Siting* (DWER 2020)).

Figure 1: Distance to nearest human receptors

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

Works approval W6916/2024/1 that accompanies this decision report authorises construction. The conditions in the issued works approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A Registration is required under Section 5B of the *Environmental Protection Regulations 1997* (EP Regulations) for the ongoing operation of the premises i.e. metal finishing activities, given Category 88 is listed under Part 2 of Schedule 1 of the EP Regulations.

Table 3: Risk assessment of potential emissions and discharges from the premises during construction

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction of new buildings Installation of Manganese Phosphate tank and machines Movements of trailers and trucks	Dust	Air / windborne pathway causing impacts to health and amenity	Residential premises located 1.2 km east of the Premises.	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	N/A	N/A No controls considered necessary due to separation distance from the proposed activities and potential emissions.
	Noise		Residential premises located 1.2 km east of the Premises.	Refer to Section 3.1	C = Minor L = Unlikely Medium Risk	Y	N/A	N/A No controls considered necessary due to separation distance from the proposed activities and potential emissions.
Operation								
Metal treatment with Manganese Phosphate coating	Hydrogen gas and water vapor emissions from Manganese Phosphating process	Air/windborne pathway causing impacts to health or amenity	Residential premises located 1.2 km east of the Premises.	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	N/A	No controls considered necessary due to separation distance from the proposed activities and potential emissions
	Manganese phosphate leaks/loss of containment	Overland run-off and infiltration causing adverse	Native vegetation Soil and	Refer to Section 3.1	C = Moderate L = Unlikely	Y	Condition 1 – Manganese Phosphate	N/A

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	Spills of chemical liquids including hazardous waste such as used oil, machine coolant, lubricating oil and grease	impacts to native vegetation health or contamination of soil and groundwater.	groundwater		Medium Risk		tank installation requirements	
					C = Minor L = Rare Low Risk	Y	N/A	The general provisions of the EP Act (Part V, Division 1) and *Unauthorised Discharge Regulations 2004* are considered sufficient to regulate this risk event.
	Stormwater contaminated from contact with factory floor during heavy rain events	Overland Run-off Seepage/infiltration	Soil and groundwater Seven Mile Creek	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	Condition 1 – Stormwater drainage infrastructure requirements	N/A

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

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

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 12 April 2024.	None received	N/A
City of Karratha advised of proposal on 12 April 2024.	The City of Karratha replied on 02 May 2024 confirming that the development application has been submitted for this property (DA24-011).	Noted. An instrument granted by the Department only provides a defence for the occupier for offences under Part V, Division 3 of the EP Act, provided the conditions contained within the licence have been complied with and not for any offences under planning legislation. An occupier who begins works on a prescribed premises without the necessary approvals from planning authorities does so at its own risk.
Applicant was provided with draft documents on 30 May 2024.	The Works Approval holder responded on 31 May 2024 confirming they had no comments on the draft conditions and wished to waive the remaining consultation period.	N/A

5. Conclusion

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

References

1. Bossong Engineering (2024), *Works Approval and Registration Application Attachment 3B - Supporting Information Document,* Perth, Western Australia.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.