



Application for Licence Amendment

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

Licence Number	L9280/2021/1
Licence Holder	Atlas Iron Pty Ltd
ACN	110 396 168
File Number	DER2020/000597
Premises	Sanjiv Ridge G45/339, L45/408, L45/407, L45/410 and M45/1257 NULLAGINE WA 6758 As defined by the Premises map attached to the issued licence
Date of Report	29/05/2023
Decision	Revised licence granted

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

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1. Decision summary

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, the licence amendment for licence L9280/2021/1 has been granted.

The Revised Licence issued as a result of this amendment consolidates and supersedes the existing Licence previously granted in relation to the Premises.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the department 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

On 16 December 2022, the Licence Holder submitted an application to the department to amend Licence L9280/2021/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Category 5: Processing or beneficiation of metallic or non-metallic ore – increase in design capacity;
- Category 85: Sewage facility – increase in the volume of reverse osmosis (RO) brine for discharge to the irrigation sprayfield;
- Approval for the discharge of RO brine from the potable water treatment plant (PWTP) to two discharge points;
- Category 89: Putrescible landfill site – approval of tyre disposal in two Waste Rock Dumps (WRDs), Runway and Split Rock; and

Table 1 below outlines the proposed changes to the existing Licence:

Table 1: Proposed design capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
5	5,000,000 tonnes per annum	7,000,000 tonnes per annum	Increase in design capacity of 5,000,000 tonnes per annum to 7,000,000 tonnes per annum.
85	45 m ³ /day of treated effluent, plus 15 m ³ /day of RO brine	45 m ³ /day of treated effluent, plus 60 m ³ /day of RO brine	Increase in the volume of RO brine from 15 m ³ /day to 60 m ³ /day Total discharge limit (to the irrigation spray field) is 105 m ³ /day (which includes the existing 45 m ³ /day of treated effluent, plus 60 m ³ /day of RO brine).
89	NA	NA	Approval of tyre disposal in two WRDs (Runway, and Split Rock).

2.2.1 Processing or beneficiation of metallic or non-metallic ore (Category 5)

The Sanjiv Ridge' crushing and screening plant has a design capacity for processing up to 5,000,000 tonnes per annum (tpa). The Licence Holder proposed to increase the design capacity to 7,000,000 tpa. The Licence Holder stated that this increase in processing capacity is due to the project site efficiencies.

2.2.2 Sewage facility (Category 85)

The WWTP is currently authorised to discharge 15 m³/day of RO brine blended with treated effluent (45 m³/day) to the irrigation spray field.

The Licence Holder has stated that the WWTP is currently discharging 60 m³/day of RO brine. The Licence Holder has requested an increase in the volume of RO brine (up to 60 m³/day) with the existing WWTP effluent (45 m³/day), allowing up to 105 m³/day to be discharged to the irrigation spray field.

The RO brine was assessed as part of the WWTP discharge, with a risk assessment that included impacts to vegetation, soil and runoff, under Works Approval W6043/2017/1. That assessment included the expected nutrient loading from the WWTP effluent.

The Licence Holder has stated that samples of RO brine, treated effluent and Class C/Shandy (treated effluent + RO brine, i.e. combined discharge to sprayfield) were taken in May 2023 and assessed for TDS concentration. Whilst the RO brine (895.8 mg/L) had a higher TDS than the treated effluent (519.9 mg/L), TDS in the combined Class C/Shandy sample (592.6 mg/L) was only marginally higher than TDS of treated effluent (Atlas Iron 2023).

Based on the above, the Licence Holder does not expect that the additional volume of RO brine being discharged to the irrigation spray field would exceed 2,500 mg/L TDS.

A summary of the current treated effluent quality was provided with the amendment application (Table 2).

Table 2: Summary of treated effluent (wastewater: brine mix) results

Discharge point	Parameter	Limit	Unit	Laboratory Report						
				21-13883-1 27 July 2021	836774-W 31 Oct 2021	858334-W 25 Jan 2022	865725 22 Feb 2022	885103-W 3 May 2022	908650-W 25 July 2022	934587-W 24 Oct 2022
Irrigation Spray Field	Biochemical Oxygen Demand (BOD)	20	mg/L	5	<5	<5	<5	16	<5	<5
	Total Suspended Solids (TSS)	30	mg/L	5	<5	59	10	<5	<5	<5
	Total Dissolved Solids (TDS)	2,500	mg/L	650	720	670	680	620	680	810
	Total Nitrogen (TN)	30	mg/L	11	8.8	5	5	4.8	1.5	1.3
	Total Phosphorus (TP)	10	mg/L	0.88	1.4	2	1.9	1.2	2.2	0.93
	E.Coli	1,000	cfu/100ml	1	9	4	7	<1	<1	3
	pH	6.5 – 8.5	-	8.1	8.0	8.1	8.2	8.0	8.0	8.2

1. Exceedance on 25 January 2022 was reported to DWER in the AACR on 29 July 2022.

2.2.3 Additional RO brine discharge points

The Licence Holder requested to add two new discharge points for the diluted RO brine. These being to the camp lawn for irrigation purposes; and the nearest Turkey's Nest for dust suppression.

Atlas Iron (2023) states that the Maintenance team at the premises will direct the discharge of treated effluent and RO brine manually according to licence limits and in response to changing

environmental conditions (i.e. weather).

RO brine from the PWTP is stored in two connected and gravity-balanced RO brine tanks (combined capacity of 31,500 L). From here, RO brine will be directed to the lawn irrigation discharge point, at a rate of 0 m³ to 8 m³/day, with discharge controlled by a pressure switch.

RO brine will also be transported from the RO tanks to the Turkey's Nest (capacity of approximately 1,500,000 L) via pipeline. The Turkey's Nest is currently fed with raw groundwater to support dust suppression.

The order of preference in which RO brine would be utilised is:

- 1) Irrigation to camp lawn;
- 2) Turkey's Nest; and
- 3) Irrigation to Spray field.

In the event RO brine cannot be discharged for irrigation to the camp lawn or Turkey's Nest (i.e. RO brine tanks and Turkey's Nest at capacity), RO brine will be manually diverted to the Class C/Shandy tanks and discharged to the spray field in combination with the treated effluent – refer to Figure 1.

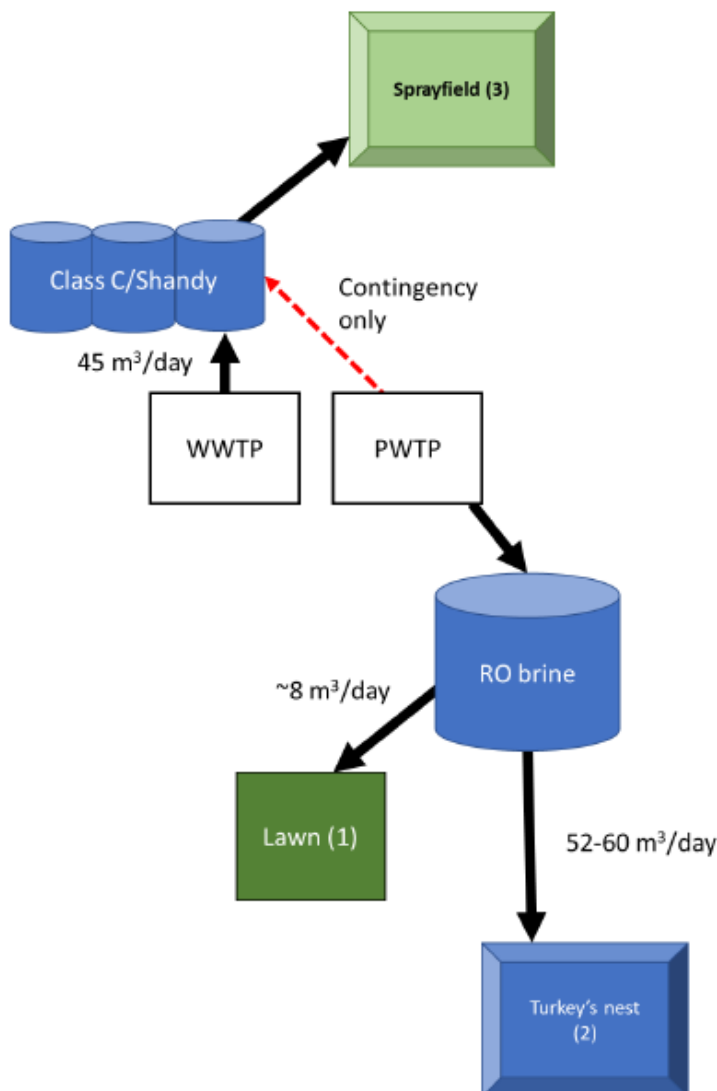


Figure 1: Proposed distribution of treated effluent from WWTP and RO brine

A summary of the proposed RO brine use, volume and receptors are in Table 3.

Table 3: RO brine proposed discharge volumes

Discharge method	Estimated volume of RO brine	Intended use	Discharge Mix	Closest receptor
WWTP Irrigation spray field	30m ³ /day ¹	Spray field	Wastewater: RO brine	Nearest significant habitat feature (i.e., cave/bat roosts and pools) - ~3.5 km upstream of the WTP (3.7 km upstream of the irrigation spray field). Coongan river is ~700 m east of the spray field.
Irrigation	5 m ³ /day ¹	Camp lawn	Using RO brine (with addition of raw water as required). This will aid in keeping water quality parameters within approved limits, specifically Electrical conductivity (EC) and Total Dissolved Solids (TDS).	As above
Dust suppression (Turkey's nest or tank)	20m ³ /day ¹	Discharge to roads/cleared areas	RO brine will be stored in either a tank or the old MOC Turkey's Nest. Use in areas away from vegetation, creek lines and other sensitive receptors.	Nearest significant habitat feature (i.e. cave/bat roosts and pools) ~800 m north of the Turkey's nest. Coongan river is ~1.7 km east of the Turkey's nest. Commitments re the brine line to the Turkey's Nest or tank. To ensure no leaks to nearby receptors.

1. RO brine volumes are indicative and can be diverted using any discharge method.

2.2.4 Tyre Disposal (Category 89)

The Licence Holder requests to add two tyre disposals in two existing WRDs. The Department of Mines, Industry Regulation and Safety (DMIRS) recently approved the Mine Proposal (Atlas Iron 2022) which includes the tyre disposal locations. The new tyre disposal locations are Runway and Split Rock WRDs (Figure 4). An increase of assessed design capacity for category 89 is not required.

The Mine Proposal includes specifications for the tyre disposals which are detailed in Table 4. Nevertheless, the department will regulate the Tyre Disposal with the existing regulations stated in the licence L9280/2021/1.

2.3 Part IV of the EP Act

The EPA assessed the Sanjiv Ridge Project – Stage 1 and 2. The assessment acknowledges the potential significant effect on Flora and Vegetation, Terrestrial Fauna, Inland Waters and Social Surroundings from the clearing of 125 ha of vegetation (EPA 2021). As a result of this assessment, the Ministerial Statements (MS) 1125 and MS 1197 were published. For this amendment only MS 1125 will be used, as it covers the area that will be affected by this amendment.

2.3.1 Ministerial Statement MS 1125

The EPA identified three key environmental factors to be affected by the proposal (Stage 1) Inland Waters, Flora and Vegetation, and Terrestrial Fauna. The result of the assessment is MS 1125, which considers two caves of the Pilbara Leaf-Nosed Bat and a specific pool for the Stage 1 of the Sanjiv Ridge project. The MS defines a buffer of avoidance for the caves and pool (CO-WS-14). Additionally, this MS regulates the clearing of local vegetation.

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 operation which have been considered in this Amendment Report are detailed in Table 4 below.

Table 4 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 4: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Category 5			
Dust	Crushing and screening facility	Air/windborne pathway	Ore shall be preconditioned to the required moisture content. Road train trailers shall be fitted with covers to minimise dust during product transport to the Port. Dust suppression additives such as I-CAT shall be investigated for use and implemented if excessive dust is on-going.
Noise	Crushing and screening facility	Air/windborne pathway	No controls proposed.
Contaminated stormwater from dry processing and leaks and spills of hydrocarbons and chemicals	Crushing and screening facility	Direct discharges and infiltration causing erosion and scouring of ground. Overland sedimentation inhibiting vegetation growth. Direct discharge causing turbidity, sedimentation, and contamination of the Coongan River.	Stormwater management infrastructure constructed around crushing and screening facility. Refuelling shall not occur within 30 m of a watercourse. Washpad. Hydrocarbons are contained in accordance with <i>AS1940:2017</i> .
Category 85			
Increase in volume of RO brine added to treated effluent for	Discharge to spray field Pipeline ruptures	Direct discharges to land Surface water runoff Spray drift	Existing controls include: Daily system performance and daily operating condition checks of WWTP.

Emission	Sources	Potential pathways	Proposed controls
irrigation			<p>Flow meters to allow for monitoring of influent and irrigation volumes.</p> <p>High level alarms (audible and visible).</p> <p>Above ground pipework.</p> <p>Quarterly effluent wastewater monitoring in accordance with Licence.</p> <p>Buffer from protected areas, including Heritage Buffers.</p> <p>Distance from spray field > 0.7 km Coongan river.</p> <p>Dilution of RO brine with the TDS lower than 2,500 mg/L.</p>
Category 89			
Dust	Operation tyre landfill	Air/windborne pathway	None proposed.
Contaminated runoff/ leachate from non-conforming waste types	Tyre landfill	Direct discharges to surface water/land and infiltration	<p>Used tyres may be placed in either the landfill or in waste rock dumps. Tyres buried in waste rock dumps will:</p> <p>(i) In batches separated from each other by at least 100 mm of soil and each consisting of not more than 40 m³ of tyres reduced to pieces; or</p> <p>(ii) In batches separated from each other by at least 100 mm of soil and each consisting of not more than 1,000 whole tyres.</p> <p>(iii) Have a 500 mm cover of topsoil or waste rock applied as soon as practicable following completion of the final waste levels in the area of tyre disposal.</p>
Windblown waste	Tyre landfill	Air/windborne pathway.	Tyres will be buried with topsoil or waste rock when is reached the final waste level in the area of tyre disposal.
Contaminated fire water	Contaminated fire water from tyre fires on the premises	Direct discharge to land, and surface water runoff.	No controls proposed. The Licence Holder stated that “stormwater contamination from the tyre landfill is not anticipated”.

Emission	Sources	Potential pathways	Proposed controls
RO brine disposal			
RO brine	RO brine tanks Turkey's Nest Pipeline ruptures	Direct discharges to land from overtopping of tanks and Turkey's Nest Irrigation to camp lawn Dust suppression	Weekly inspections of the pipeline. Installation of an isolation valve on the pump for any line isolations. Above ground pipeline (apart from the road crossing which is sleeved). Flow meter at each outlet RO brine tanks (combined capacity of 31,500 L) fitted with ball float device calibrated to 90% of total capacity. Turkey's Nest has a capacity of approximately 1,500,000 L. Turkey's Nest is fitted with a ball float device, which shuts off inflow of both raw groundwater and RO brine once the water level reaches 90% capacity. RO brine volumes discharged from the RO brine tank to the lawn and Turkey's Nest discharge points measured using flow meters. Lawn irrigation can be switched off in the event of heavy rainfall. Turkey's Nests inspected daily. Coongan river is ~1.7 km east of the Turkey's nest.

3.1.2 Receptors

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

Table 5 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)).

To note: the nearest human receptor noted by the Licence Holder is the Corunna Downs Homestead, approximately 17 km southeast from the prescribed premises boundary.

Table 5: Sensitive human and environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
<p><u>Threatened (T) and / or Priority (P) Fauna:</u></p> <p>Pilbara leaf-nosed bat (<i>Rhynonictis aurantia</i> (Pilbara), WA ranking status = P4</p> <p>Ghost bat (<i>Macroderma gigas</i>), Department of Biodiversity, Conservation and Attraction (DBCA) status = Vulnerable</p> <p>Northern quoll (<i>Dasyurus hallucatus</i>) Endangered, DBCA status = Endangered</p> <p>Western pebble-mound mouse (<i>Pseudomys chapmani</i>), WA ranking status = P4</p>	<p>Nearest significant habitat (cave/bat roosts and pools) is approximately 3.5 km upstream of the WWTP.</p> <p>The MS 1125 acknowledges the potential impact on fauna because of the premises operation, being noise and vibration identified as the main risk. The assessment considered that caves avoidance buffers for Pilbara leaf-nosed bat and/or ghost bat mitigate the risk.</p> <p>The proposed amendment will increase the design capacity of the crushing and screening plant, which can increase vibration and noise. This potentially could affect the Northern quoll and the Western pebble-mound mouse.</p> <p>Nevertheless, according to MS 1125, there is low habitat suitability for these species within the project footprint. Therefore there is low risk for these species to be affected for the increase of crushing/screening plant activities.</p>
<p><u>Threatened and / or Priority Flora:</u></p> <p><i>Nicotiana umbratica</i>, Biodiversity Conservation Act 2016 status = P3</p> <p><i>Ptilotus mollis</i>, Biodiversity Conservation Act 2016 status = P4</p>	<p>Applicant indicated that the nearest known priority flora (<i>Rothia indica subsp. Australis P3</i>) is located 49.5 m west of the WWTP sprayfield (Figure 3).</p> <p>The MS 1125 allows 423.11 ha of native vegetation clearing within the project footprint.</p>
<p><u>Aboriginal and other heritage sites:</u></p> <p>CRD-27-16 (Artefacts / Scatter, Grinding Patches / Grooves)</p> <p>CRD-04-13B (Artefacts / Scatter, Rockshelter, Plant Resource, Water Source)</p> <p>CRD-43-16</p> <p>CRD-70-20 – Ngulyimunya (Grinding Patches / Grooves, Rockshelter, Water Source)</p>	<p>CRD-27-16 - Approximately 125 m west from the WWTP sprayfield area. Approximately 90 m northwest from the WWTP. This site has an avoidance buffer (Figure 2).</p> <p>CRD-04-13B – Adjacent to Runway Tyre WRD. The Licence Holder stated that is “topographically separated by natural landform” (Atlas Iron 2023).</p> <p>CRD-43-16 within 80 m upstream from the Runway Tyre WRD boundary. Atlas Iron stated that the site is “situated upstream of the Runway WRD between Runway South Pit and Runway Low-grade Ore Stockpile” (Atlas Iron 2023).</p> <p>CRD-70-20 – Approximately 500 m east of the Split Rock Tyre WRD.</p>
<p><u>Hydrology:</u></p> <p>Coongan River</p> <p>Watercourse</p> <p>Perennial Pools</p>	<p>Coongan River is approximately 520 m east of the WWTP sprayfield area and associated tributaries approximately 250-400 m from the WWTP and WWTP sprayfield area.</p> <p>A Watercourse is 500 west from camp lawn proposed WWTP discharge.</p> <p>Perennial Pools are around the proposed tyre landfill (Figure 4).</p>

Environmental receptors	Distance from prescribed activity
<u>Groundwater:</u>	<p>Landfill compliance report indicates the base of the landfill is approximately 10m above the water table.</p> <p>Licence Decision Report stated that groundwater has at least 3 m separation distance between tyre disposal cell and maximum groundwater level.</p>

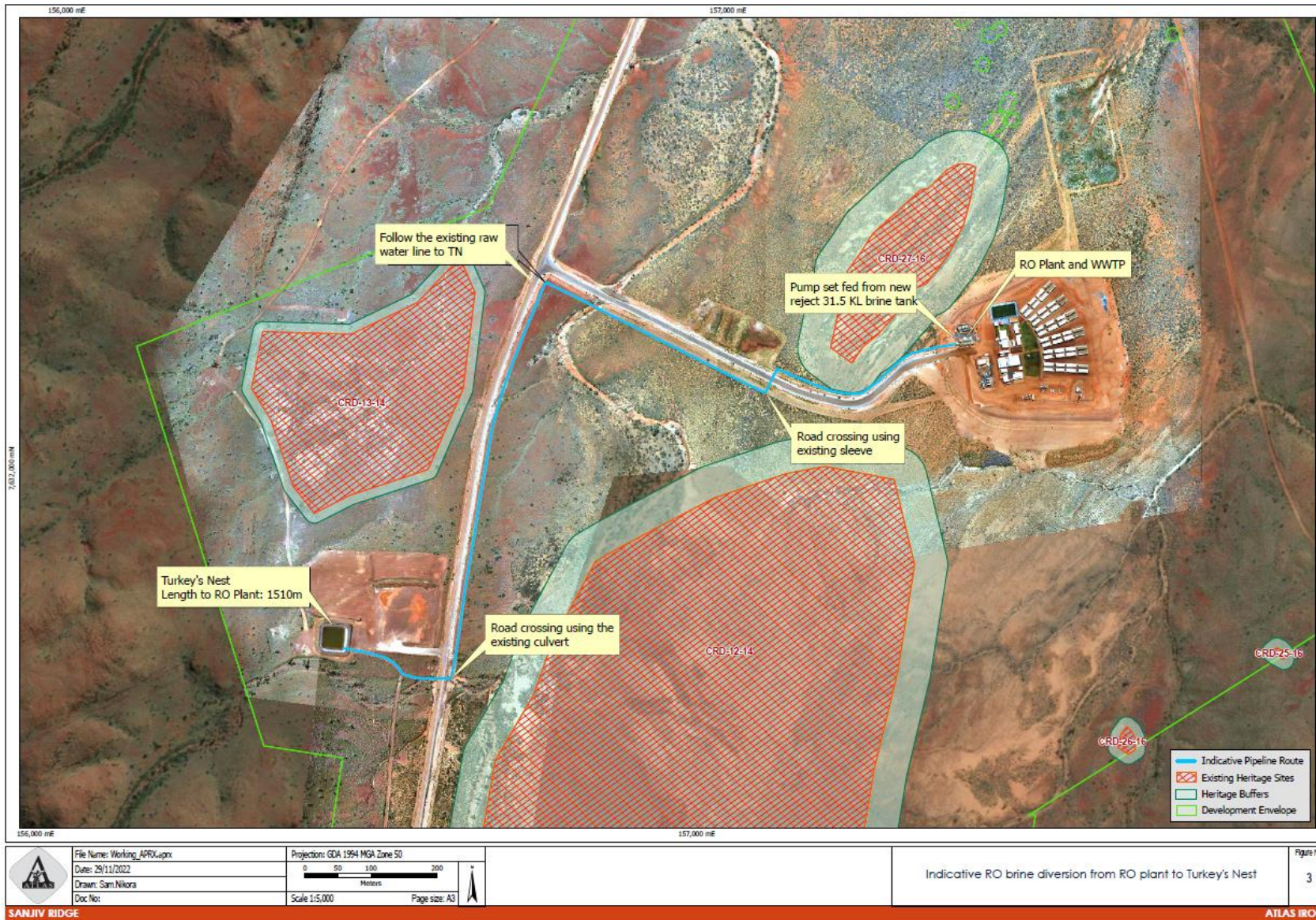


Figure 2: Indicative RO brine diversion from RO plant to Turkey's Nest

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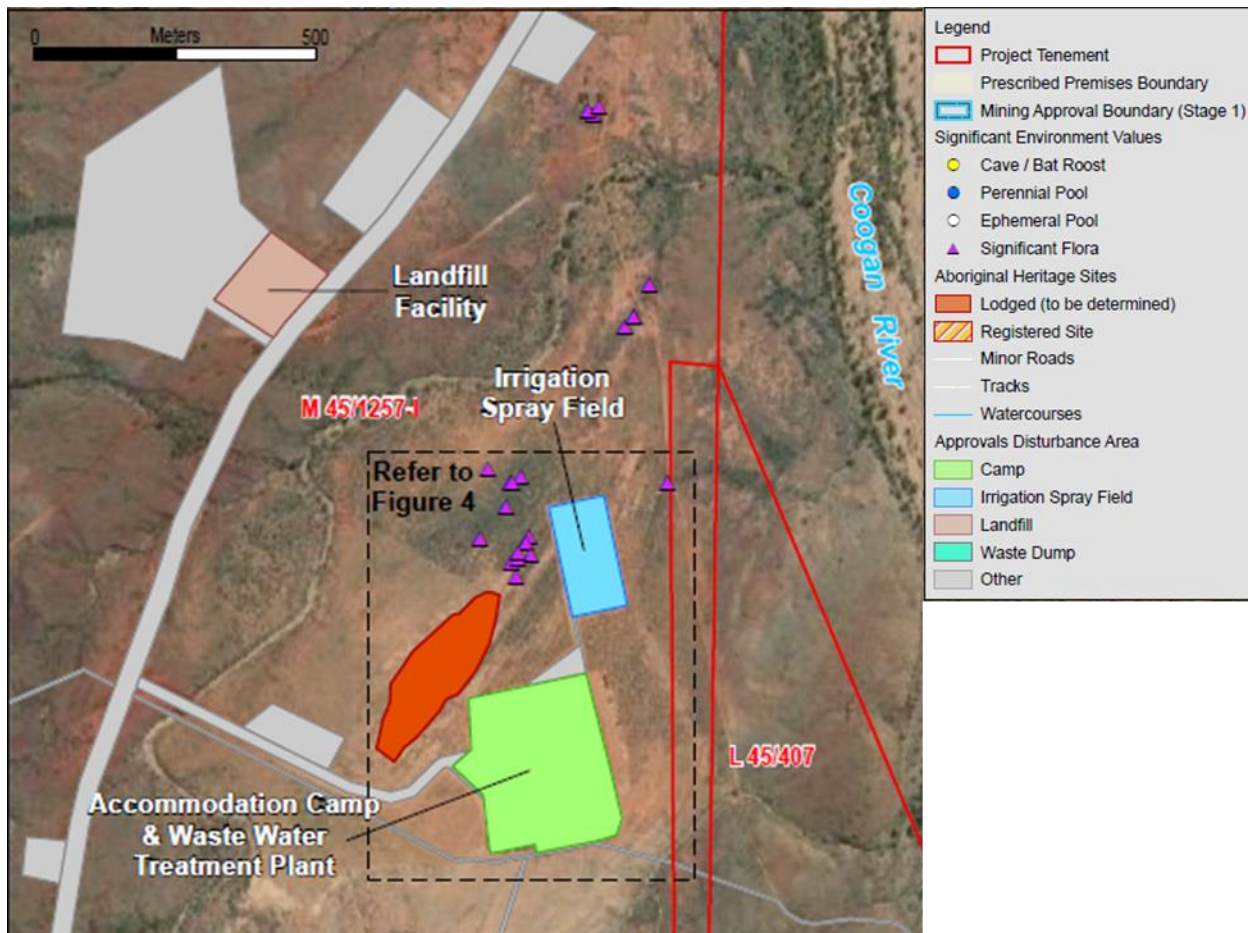


Figure 3: Spray Field, Accommodation and Turkey's nest (Map adapted from Atlas Iron 2022, Prescribed Premises Activities Map)

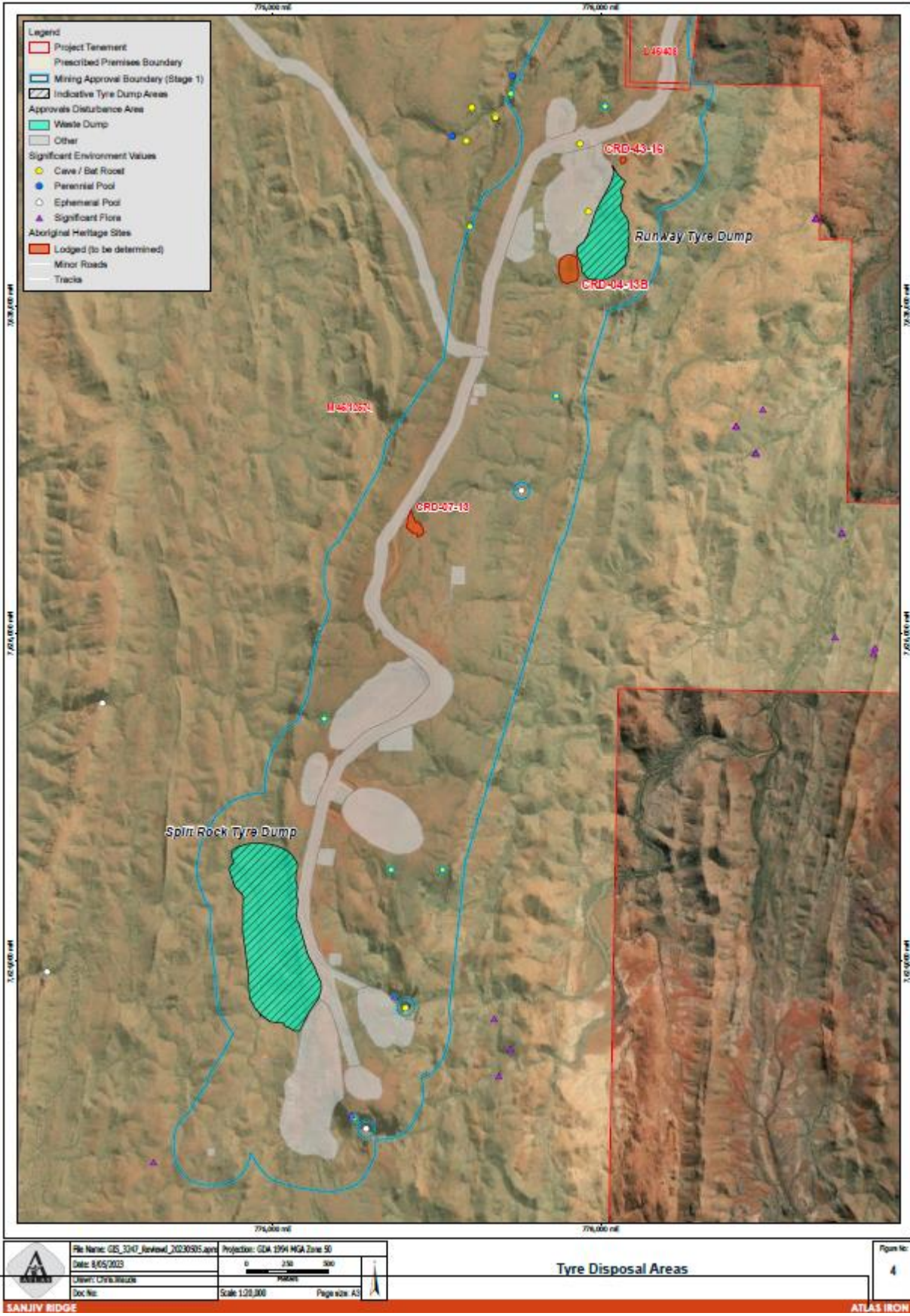


Figure 4: Tyre disposal areas

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are incomplete they have not been considered further in the risk assessment.

Where the Licence Holder 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 Licence Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the licence as regulatory controls.

Additional regulatory controls may be imposed where the Licence Holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 6.

The Revised Licence L9280/2021/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. category 5 activities.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 6. Risk assessment of potential emissions and discharges from the Premises operation

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
Category 5								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust	Air/windborne pathway causing impacts to vegetation and amenity	Vegetation	Refer to Section 3.1	N/A	N/A	The MS 1125 regulates native vegetation clearing within the project footprint. Therefore, the impact of dust on vegetation will not be assessed.	N/A
	Noise	Air/windborne pathway causing impacts to conservation significant fauna	Conservation significant fauna species (e.g., Pilbara leaf-nosed bat)	Refer to Section 3.1	N/A	N/A	Managed under Part IV of the EP Act by MS 1125 where was assessed the risk for fauna within the project footprint. The assessment did not identify habitat suitable for endangered species. Additionally, avoidance buffers were placed around caves to reduce impact on endangered bats species.	N/A
	Contaminated stormwater from dry processing and leaks and spills of hydrocarbons and chemicals	Direct discharges and infiltration causing erosion and scouring of ground Overland sedimentation inhibiting vegetation growth Direct discharge causing turbidity, sedimentation, and contamination of the Coongan River	Soil, groundwater Vegetation Coongan River, ~2km	Refer to Section 3.1	C = Minor L = Possible Medium rating	Y	N/A	N/A
Category 85								
Operation of WWTP where treated effluent and brine is mixed	Discharges of treated effluent and brine directly from spills, pipe leaks, tank overtopping etc	Direct discharges to land – vegetation deaths, shallow groundwater contamination, surface salt formation	Soil, groundwater, Coongan River, 500m	Refer to Section 3.1	C = Moderate L = Possible Medium rating	Y	Conditions on the existing licence relating to discharges 1, 2, 6, 7, 14 and 15.	N/A

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Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
before discharge								
Category 89								
Operation of tyre landfill	Dust	Air/windborne pathway causing impacts to health and amenity	Aboriginal heritage sites	Refer to Section 3.1	C = Minor L = Possible Medium rating	Y	N/A	N/A
	Contaminated runoff/ leachate from non-conforming waste types	Overland runoff from landfill following rainfall events affecting water quality of groundwater and perennial pools	Soil, Groundwater, Perennial pools	No control proposed	C = Minor L = Possible Medium rating	N/A	Conditions on the existing licence relating to contaminated runoff/ leachate from non-conforming waste types 1,2 and 3.	Standard landfill conditions have been included on the licence, including waste types approved for acceptance. These conditions are suitable to manage waste at the landfill premises, in conjunction with the measures proposed by the Licence Holder (burying with topsoil or waste rock).
	Landfill leachate – hydrocarbons	Discharges to land and groundwater, causing a reduction of water quality from groundwater and perennial pools Infiltration polluting groundwater with hydrocarbons	Soil, Groundwater, Perennial pools	No control proposed	C = Minor L = Possible Medium rating	N/A	N/A	Groundwater has at least 3 m depth from proposed tyre disposal sites
	Windblown waste	Air/windborne pathway causing impacts to health and amenity	Aboriginal heritage sites	Refer to Section 3.1	C = Slight L = Possible Low rating	N/A	Existing conditions 1,2 and 3	Standard landfill conditions have been included on the licence, including waste types approved for acceptance. These conditions are suitable to manage waste

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
								at the landfill premises, in conjunction with the measures proposed by the Licence Holder (burying with topsoil or waste rock).
	Contaminated fire water	Discharge to land causing contamination Discharge to surface water causing pollution	Aboriginal heritage sites, Perennial pools	Refer to Section 3.1	C = Minor L = Unlikely Medium rating	N/A	Existing conditions 1,2 and 3	Standard landfill conditions have been included on the licence, including waste types approved for acceptance. These conditions are suitable to manage waste at the landfill premises, in conjunction with the measures proposed by the Licence Holder (burying with topsoil or waste rock).
RO Brine								
Discharge of RO brine	Over-irrigation of tracks/ roads with brine for dust suppression Discharge of RO brine to vegetation as a result of pipeline leaks Discharge of brine with higher concentration than suspected because malfunction of PWTP Run off post rain.	Direct discharges to spray field to soil producing surface salt formation Direct discharges in surrounding of Turkey's nest affecting flora and ephemeral creek Direct discharge to ephemeral pools or effluents – reducing water quality Runoff affecting vegetation, groundwater and ephemeral pools or effluents Direct runoff of brine from roads where brine has been applied for dust	Soil, Groundwater, ephemeral creek (south of Turkey's nest) Coongan River, 500m	Refer to Section 3.1	C = Minor L = Possible Medium rating	Y	Conditions have been updated under this amendment for RO brine discharge points including: - Condition 6 – to allow discharge to irrigation camp lawn and for dust suppression; - Condition 7 – to include camp lawn irrigation requirements; - Condition 13 – Waste output monitoring requirements; - Condition 14 – Discharge to land monitoring requirements; - Condition 20 for condition 14 updated – reporting requirements; and	N/A

Risk Event					Risk rating ¹ C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions ² of licence	Justification for additional regulatory controls
Source/ Activities	Potential emission	Potential pathways and impact	Receptors	Licence Holder's controls				
		suppression affecting vegetation, superficial groundwater, ephemeral pools. Spray drift to soil, producing surface salt formation					- Schedule 3 – TDS limit	

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

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

4. Consultation

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

Table 7: Consultation

Consultation method	Comments received	Department response
Department of Mines, Industry Regulation and Safety (DMIRS) request for advice on 1 March 2023	DMIRS provided a comment, which is detailed in Appendix 1.	The Department has provided a comment in Appendix 1.
Department of Health request for advice on 1 March 2023	No comments received	N/A
Palyku Aboriginal Corporation advised of proposal on 1 March 2023	No comments received	N/A
Palyku-Jartayi Aboriginal Corporation RNTBC advised of proposal on 1 March 2023	No comments received	N/A
Applicant was provided with draft documents on 21 April 2023 and 17 May 2023	The Licence Holder responded on 9 May 2023 providing responses to the department's request for further information. No comments were provided on the draft conditions and the Licence Holder waived the remaining comment period.	Documents updated as required

5. Conclusion

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 8 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 8: Summary of licence amendments

Condition no.	Proposed amendments
Cover page	Increase of category 5 assessed design capacity Increase in the volume of RO brine to be discharged
Table 1	Category 85 – Operational requirements for Wastewater treatment Plant with specification of RO brine volume per discharge points: Category 89: Addition of two tyre disposal locations
Table 2	The two tyre disposal sites were added, and conditions imposed

Condition no.	Proposed amendments
Table 3	The two tyre disposal sites were added and conditions on cover requirements
Table 4	The two new discharge points were added for the disposal of RO brine
Condition 7	Inclusion of the camp lawn to this condition
Condition 8	New condition regarding RO brine used for dust suppression
Table 5	Requirement to for the volume of treated water and/or RO reject water to be monitored
Table 6	The two new discharging points were added it
Table 8	Update for Condition 14 - The two new discharging points were added it RO brine parameter added
Figure 4	Addition of map with indication of Tyre disposal areas
Figure 5	Addition of map with indication of RO brine diversion
Schedule 3	Addition of TDS limit for dust suppression

References

1. Atlas Iron 2023, *Application for an Amendment to Licence (L9280/2021/1) Under The Environmental Protection Act 1986 – Request for Further Information* (REF: DWERDT752331)
2. Atlas Iron 2022, *Sanjiv Ridge Project: Licence Amendment Application – Supplementary Documentation* (REF: A2146400)
3. Atlas Iron 2022, *Mining Proposal: Sanjiv Ridge* (ID: 101600), Department of Mines, Industry Regulation and Safety, Perth, Western Australia.
4. Atlas Iron 2023, *L9280/2021/1 Request of Information (DER2020/000597) – Atlas responses*, dated 9 May 2023 (DWERDT777633).
5. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
6. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
7. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
8. Works Approval W6043/2017/1 and Decision Report granted 2 September 2020 (REF: A1929725).
9. Environmental Protection Authority (EPA) 2021, *Extract of determination*, Environmental Protection Authority, Perth, Western Australia.
10. EPA 2020, *Ministerial Statement 1125*, Environmental Protection Authority, Perth, Western Australia.
11. EPA 2022, *Ministerial statement 1197*, Environmental Protection Authority, Perth, Western Australia.

Appendix 1: Summary of Stakeholder's comments

Submitter	Summary of stakeholder's comment				Department's response					
DMIRS	<p>DMIRS provided the following comment; <i>"The Mining Proposal for the Sanjiv Ridge Project has been granted with the following outcome conditioned:"</i></p> <table border="1" data-bbox="392 534 1697 1037"> <tr> <td data-bbox="392 534 555 1037"><i>9 Aboriginal Heritage</i></td> <td data-bbox="562 534 817 1037"><i>Clearing and other vehicle/machinery movements resulting in the loss or damage of heritage values. Open pit mining resulting in flyrock or rock fall on heritage values.</i></td> <td data-bbox="824 534 1019 1037"><i>No unauthorised impacts to Aboriginal sites</i></td> <td data-bbox="1025 534 1451 1037"> <ul style="list-style-type: none"> • <i>Atlas will avoid mining activities that may impact on Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972. Including:</i> <ul style="list-style-type: none"> ○ <i>Avoiding mining the southernmost part of Split Rock pit and impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972</i> ○ <i>Avoiding mining Razorback pit and potentially impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972 or otherwise applying mitigations to satisfactorily reduce the risk.</i> </td> <td data-bbox="1458 534 1697 1037"> <ul style="list-style-type: none"> • <i>Inspections during clearing</i> • <i>Blast monitoring</i> </td> </tr> </table>				<i>9 Aboriginal Heritage</i>	<i>Clearing and other vehicle/machinery movements resulting in the loss or damage of heritage values. Open pit mining resulting in flyrock or rock fall on heritage values.</i>	<i>No unauthorised impacts to Aboriginal sites</i>	<ul style="list-style-type: none"> • <i>Atlas will avoid mining activities that may impact on Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972. Including:</i> <ul style="list-style-type: none"> ○ <i>Avoiding mining the southernmost part of Split Rock pit and impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972</i> ○ <i>Avoiding mining Razorback pit and potentially impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972 or otherwise applying mitigations to satisfactorily reduce the risk.</i> 	<ul style="list-style-type: none"> • <i>Inspections during clearing</i> • <i>Blast monitoring</i> 	<p>The Licence holder is required to be aware of their conditional requirements under the Mining Proposal in relation to potential impacts to Aboriginal heritages sites and their obligations to obtain a section 18 under the <i>Aboriginal and Heritage Act 1972</i> before commencing any mining activities near Aboriginal heritage sites.</p>
<i>9 Aboriginal Heritage</i>	<i>Clearing and other vehicle/machinery movements resulting in the loss or damage of heritage values. Open pit mining resulting in flyrock or rock fall on heritage values.</i>	<i>No unauthorised impacts to Aboriginal sites</i>	<ul style="list-style-type: none"> • <i>Atlas will avoid mining activities that may impact on Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972. Including:</i> <ul style="list-style-type: none"> ○ <i>Avoiding mining the southernmost part of Split Rock pit and impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972</i> ○ <i>Avoiding mining Razorback pit and potentially impacting an Aboriginal site without first obtaining section 18 consent under the Aboriginal Heritage Act 1972 or otherwise applying mitigations to satisfactorily reduce the risk.</i> 	<ul style="list-style-type: none"> • <i>Inspections during clearing</i> • <i>Blast monitoring</i> 						

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY				
Application type				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
		Environmental Compliance Report submitted?		Yes <input type="checkbox"/> No <input type="checkbox"/>
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L9280/2021/1	
		Relevant works approval number:		N/A <input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:		None <input type="checkbox"/>
Date application received		16 December 2022		
Applicant and Premises details				
Applicant name/s (full legal name/s)		Atlas Iron Pty Ltd		
Premises name		Sanjiv Ridge		
Premises location		G45/339, L45/408, L45/407, L45/410 and M45/1257		
Local Government Authority		Shire of East Pilbara		
Application documents				
HPCM file reference number:		DER2020/000597		
Key application documents (additional to application form):		Sanjiv Ridge Project – Licence Amendment Application – Supplementary Documentation		
Scope of application/assessment				

<p>Summary of proposed activities or changes to existing operations.</p>	<p>The licence amendment requires the following changes:</p> <ul style="list-style-type: none"> • Category 5: Processing or beneficiation of metallic or non-metallic ore – increase in design capacity of 5,000,000 tonnes per annum to 7,000,000 tonnes per annum; • Category 85: Sewage facility – increase in design capacity from 15 m³/day to 60 m³/day for RO brine (discharge capacity) where the total discharge limit is 105 m³/day (includes the existing 45 m³/day of treated effluent); • Category 89: Putrescible landfill site – approval of tyre disposal in three Waste Rock Dumps (WRDs) (Shark Gully, Runway, and Split Rock) approved under the Mining Proposal REG. ID 101600 (179-EN-REP-0004 v2); and • Approve additional discharge points to include increased output to the irrigation spray field and to use for camp irrigation and dust suppression: <ul style="list-style-type: none"> - Camp – storage tank, reticulation and piping between the camp and MOC turkey's - MOC – existing turkey's nest and standpipe infrastructure.
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 5 – Processing or beneficiation of metallic or non-metallic ore	5,000,000 tonnes per annum	7,000,000,000 tonnes per annum
Category 85 – Sewage facility	45 m ³ /day (treatment capacity), plus 15 m ³ /day for RO brine (discharge capacity)	60 m ³ /day for RO brine (discharge capacity) Total discharge limit of 105 m ³ /day
Category 89 – Putrescible landfill site	450 tonnes per annum	No change

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input checked="" type="checkbox"/> MS 1125
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: MS1125-12 March 2020 EPA Report No: 1665
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Reference No: EPBC 2017/7861 Project approved on 23/2/2018 Variation to conditions determined

		on 30/10/2020
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining Lease tenement in name of Atlas Iron Ltd: ML45/339 Expiry 15/11/2037 ML45/407 Expiry 8/11/2037 ML45/408 Expiry 8/11/2037 ML45/410 Expiry 8/11/2037 ML45/1257 Expiry 26/05/2037
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	If N/A explain why? Mining tenure
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A Clearing authorised under MS 1125 (clearing native vegetation 423.11 ha)
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Licence/permit No: GWL 176960 (5) Issued 3/4/2020 to draw 1.1 GL/a for various uses including mining camp purposes.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: Pilbara Type: Proclaimed Groundwater Area/Surface Water Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office: North West
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>

<p>Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxx</i>)</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p><i>Mining Act 1978</i> <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p>
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Classification: N/A Date of classification: N/A</p>