Amendment Report

Application for Licence Amendment

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

Licence Number	L8454/2010/2
Licence Holder	Chichester Metals Pty Ltd
ACN	109 264 262
File Number	2010/003105
Premises	Christmas Creek Mine Site Tenements E46/610, E46/612, M46/320, M46/321, M46/322, M46/323, M46/324, M46/325, M46/326, M46/327, M46/328, M46/329, M46/330, M46/331, M46/332, M46/333, M46/334, M46/335, M46/336, M46/337, M46/338, M46/339, M46/340, M46/341, M46/342, M46/343, M46/344, M46/345, M46/346, M46/347, M46/348, M46/349, M46/350, M46/351, M46/352, M46/353, M46/354, M46/355, M46/403, M46/406, M46/412, M46/413, M46/414, M46/415, M46/416, M46/417, M46/418, M46/419, M46/420, M46/421, M46/422, M46/423, M46/424, G46/7, L46/49, L46/56, L46/58, L46/86, L46/87, L46/106, L46/111, E46/566 and L46/66 MULGA DOWNS WA 6751 As depicted in Schedule 1
Date of Report	8 June 2021
Decision	Revised licence granted

Ana Mesquita

Digitally signed by Ana Mesquita
Date: 2021.06.08 14:28:12 +08'00'

ANA MESQUITA
A/MANAGER, RESOURCE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Table of Contents

1. Decision summary

Licence L8454/2010/2 is held by Chichester Metals Pty Ltd (Licence Holder) for the Christmas Creek Mine Site (the Premises), located at:

Tenements E46/610, E46/612, M46/320, M46/321, M46/322, M46/323, M46/324, M46/325, M46/326, M46/327, M46/328, M46/329, M46/330, M46/331, M46/332, M46/333, M46/334, M46/335, M46/336, M46/337, M46/338, M46/339, M46/340, M46/341, M46/342, M46/343, M46/344, M46/345, M46/346, M46/347, M46/348, M46/349, M46/350, M46/351, M46/352, M46/353, M46/354, M46/355, M46/403, M46/406, M46/412, M46/413, M46/414, M46/415, M46/416, M46/417, M46/418, M46/419, M46/420, M46/421, M46/422, M46/423, M46/424, G46/7, L46/49, L46/56, L46/58, L46/86, L46/87, L46/106, L46/111, E46/566 and L46/66

MULGA DOWNS WA 6751 As depicted in Schedule 1 of the Licence.

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, Revised Licence L8454/2010/2 has been granted.

The Revised Licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

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 04 March 2021, the Licence Holder submitted an application to the department to amend Licence L8454/2010/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Construction and operation of a Hydrogen Refuelling Station (HRS) at the Christmas Creek Karntama Village that will be used for the refuelling of hydrogen powered vehicles onsite. Refer to Section 2.2.1;
- Addition of the existing Elvis Turkey's Nest (already constructed and in use but is now storing saline/brackish water) and proposed Mobile Max Turkey's Nest to the list of water containment infrastructure on the licence. Refer to Section 2.2.2;
- Three additional tailings spigots required for tailings deposition along the southern and eastern embankments to allow for more even distribution of tailings within Strip 12 of the Flinders In-Pit Tailings Storage Facility (TSF). Refer to Section 2.2.3; and
- Update to Schedule 1 map of containment infrastructure for disposal of used tyres, construction waste with updated five year mine pits and waste dumps.

This amendment is limited only to changes to Categories 5, 6 and 31 activities from the Existing Licence. No changes to the aspects of the Existing Licence relating to Categories 52, 54, 57, 64 and 73 have been requested by the Licence Holder.

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

Table 1: Proposed design or throughput capacity changes

Category	Current design throughput capacity	Proposed design throughput capacity	Description of proposed amendment
5	77,000,000 tonnes per Annual Period	77,000,000 tonnes per Annual Period	N/A
6	43,000,000 tonnes per Annual Period (injected)	43,000,000 tonnes per Annual Period (injected)	N/A
31	N/A	195 tonnes per annual period	HRS for the production of hydrogen for the refuelling of hydrogen powered vehicles onsite
52	63.6 MWe	63.6 MWe	N/A
54	1,040 cubic metres per day	1,040 cubic metres per day	N/A
57	2,000 tyres	2,000 tyres	N/A
64	10,000 tonnes per Annual period	10,000 tonnes per Annual period	N/A
73	15,183.1 cubic metres in aggregate	15,183.1 cubic metres in aggregate	N/A

2.2.1 HRS

The HRS will convert potable water from the Karntama Village to hydrogen, which will then be used as a fuel source for the refueling of hydrogen powered vehicles onsite. It will consist of:

- Two electrolyses;
- Two compressors;
- High pressure hydrogen storage tanks; and
- Two refueling dispensers where hydrogen powered vehicles can refuel.

The HRS will use Proton Exchange Membrane (PEM) water electrolysis to split water (H_2O) into hydrogen (H_2) and oxygen (O_2) via an electrothermal reaction. The hydrogen is then transferred through a compressor to the high pressure storage vessels and refueling dispenser for the refueling of hydrogen powered vehicles.

The HRS will be powered by electricity generated from the solar farm and will mostly operate during daylight hours.

During the normal operation of the HRS, there will be approximately 1,440 kg of gaseous oxygen vented per day, 2,000L of high quality water produced per day and in a pressure relief scenario approximately 0.1kg of hydrogen vented from the refuelling dispenser per day.

The water used in the HRS is potable from the Karntama Village Camp and water quality results are shown in Table 2.

Table 2: Karntama Village Camp water quality results

pH	TDS	Ca	Na	F	Mg
7.05	216 mg/L	10 mg/L	39 mg/L	0.1 mg/L	1.51 mg/L

Water produced from the HRS is, therefore, expected to be of similar high quality. The anticipated water quality is shown in Table 3.

Table 3: HRS anticipated output water quality results

pH	TDS	Ca	Na	F	Mg	Al	Zn
7.16	394 mg/L	55.47 mg/L	35 mg/L	0.15 mg/L	7.85 mg/L	0.012 mg/L	0.016 mg/L

This water (2,000 L/day) will be combined with existing Reverse Osmosis water (285,000 L/day) and transferred to Codger's Transfer Pond where it will be used for dust suppression / ore processing.

Figure 1 shows the location of the HRS.

Figure 2 shows the indicative design and process flow of the HRS.

2.2.2 Turkey's Nests

Elvis Turkey's Nest

The Elvis Turkey's Nest was previously listed on the licence as a saline/brackish water storage compound in 2016, however, it was removed from the licence in March 2017 following a review of water infrastructure. The water source has since changed to storing saline/brackish water so it is to be listed as a saline/brackish water storage compound.

Mobile Max Turkey's Nest

The Mobile Max Turkey's Nest is proposed as a temporary containment source of saline/brackish water. It will be used to store up to 420 kL of water and can be relocated around the mine site to provide additional water storage capacity depending on where mining is occurring. It can also be hooked up to the Lefroy Turkey's Nest to provide additional water storage capacity as required.

Figure 3 shows the design drawing of the proposed Mobile Max Turkey's Nest.

2.2.3 Flinders In-Pit TSF Spigots

Flinders In-Pit TSF comprises of two cells (Strip 19 on the west and Strip 12 on the east) and there has been an increase in the volume of tailings deposited, with a change in the beach profile compared to the original design. The beaching adjacent to the existing spigots on the northern embankment is reaching its maximum height and alternative spigots are required.

These disposal points will allow for a more even distribution of tailings within Strip 12 within the maximum tailings operational level of 437.9m. Figure 4 shows the Flinders In-Pit TSF and locations of the proposed additional tailings spigots.

Figure 1: Location of Hydrogen Refuelling Station

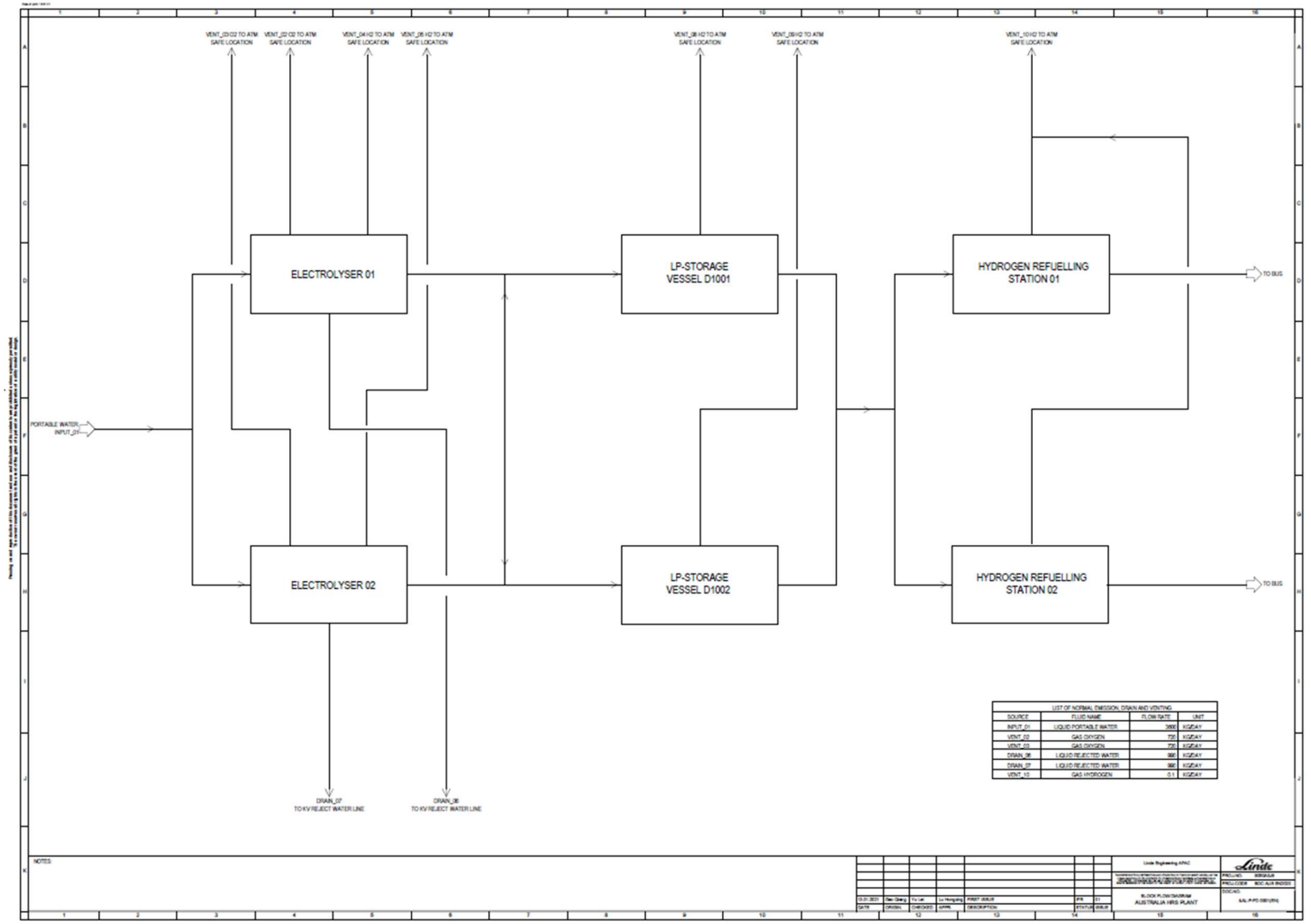

Figure 2: Indicative design and process flow of the HRS

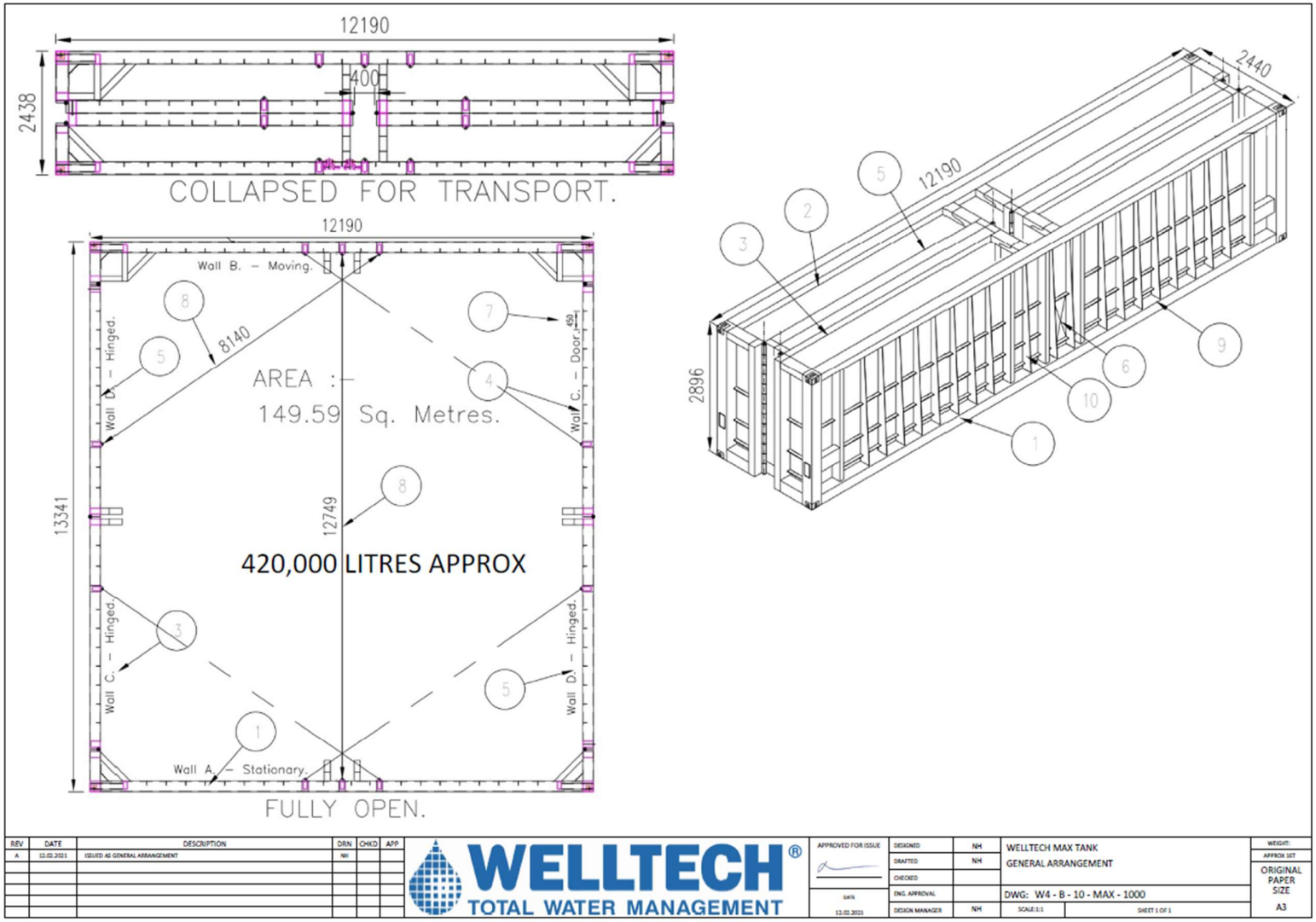

Figure 3: Design drawing of the proposed Mobile Max Turkey's Nest

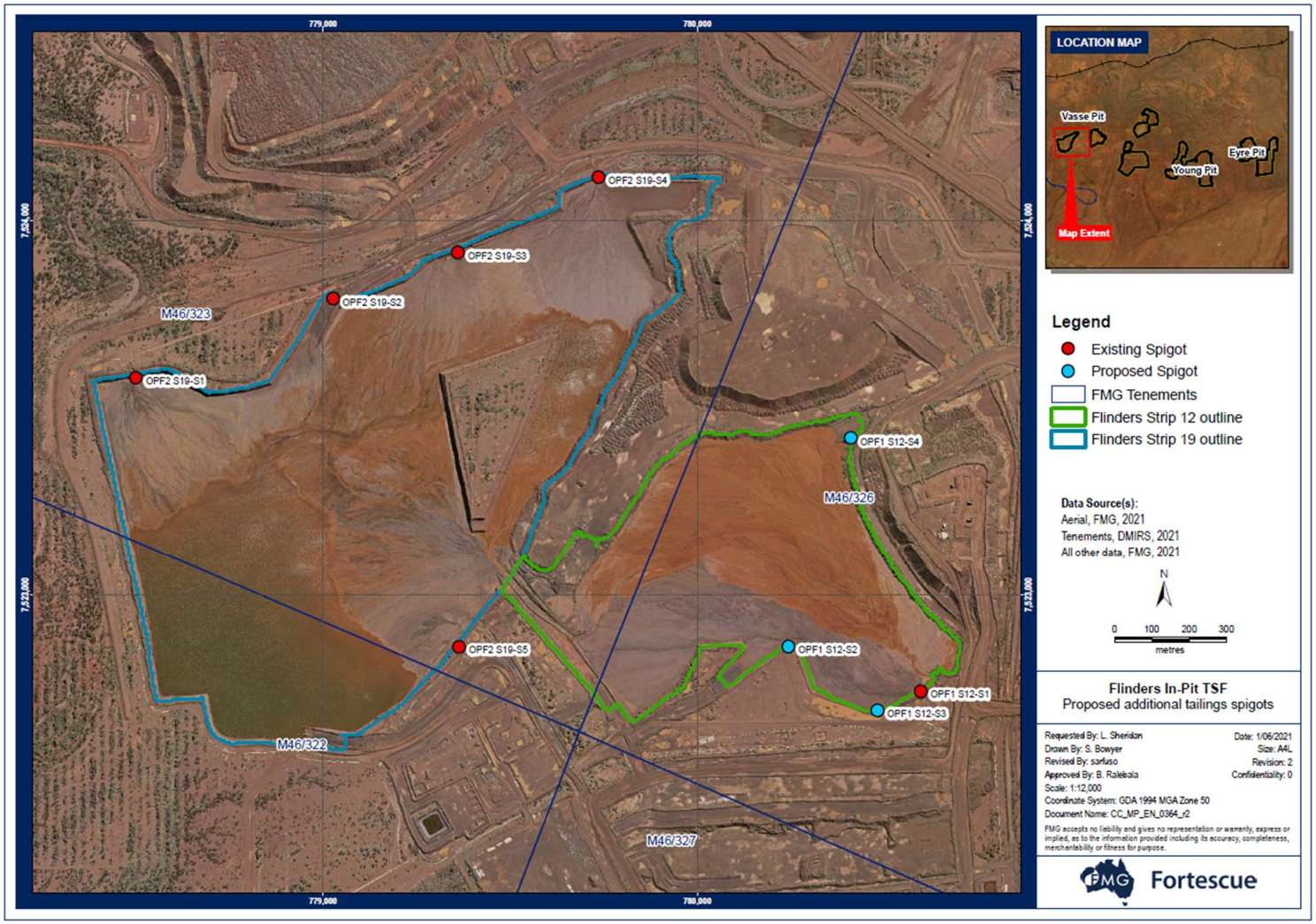

Figure 4: Proposed additional tailings spigots

2.3 Part IV of the EP Act

The Christmas Creek Iron Ore Mine Expansion, approved 08 August 2016 by Ministerial Statement 1033, EPA Report No: 1567, to allow the expansion of the existing mining footprint, permanent waste landforms, tailings disposal, conveyors, roads, drainage and other associated mine infrastructure.

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 *Guidance Statement: Risk Assessments* (DER 2017).

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 and 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
Construction			
Dust	Construction of Hydrogen Refuelling Station, Mobile Max Turkey's Nest, installation of tailings spigots and associated equipment including vehicle movements	Air/windborne pathway	Inform personnel of dust management responsibilities Minimise clearing and vegetation disturbance and conduct vegetation clearing in accordance with permits Implement dust suppression measures including the use of water carts, vehicle speed restrictions etc. Dust mitigation measures are to be implemented while earthworks are conducted
Noise	Construction of Hydrogen Refuelling Station, Mobile Max Turkey's Nest, installation of tailings spigots and associated equipment including	Air/windborne pathway	Low noise plant and equipment will be used where practicable Noise emissions monitoring conducted on mobile plant where potential exceedance is identified Noise emissions reduction will be addressed through the

Emission	Sources	Potential pathways	Proposed controls
	vehicle movements		maintenance process As necessary noise emissions monitoring conducted on fixed plant and noise and emissions reduction addressed through maintenance processes
Hydrocarbons/chemicals	Direct discharge from leaks/spills and transfers	Direct discharge	*Australian Standard 1940-2004 The storage and handling of flammable and combustible liquids* Remediation of any spills and leaks as soon as practicable
Category 5 additional tailings spigots			
Tailings leachate	Additional tailings spigots	Seepage through the base and walls of the TSF	The new spigots will allow more even distribution of tailings across the TSF and ensure adequate capacity is maintained
Tailings liquid	Additional tailings spigots	Overtopping of the TSF walls	The new spigots will allow more even distribution of tailings across the TSF and ensure adequate capacity is maintained
Category 6 Elvis Turkey's Nest			
Brackish/saline dewatering water	Abstracted mine dewatering water from bore fields	Overtopping	• Freeboard 200mm maintained; and • HDPE liner.
		Pipelines spills/leaks	• Equipped with telemetry; or • Equipped with automatic cut-outs in the event of a pipe failure; or • Provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.
Category 6 Mobile Max Turkey's Nest			
Brackish/saline dewatering water	Mobile Max Turkey's Nest	Overtopping of the tank	• Equipped with an in-flow cut off valve set a pre-determined level to ensure the freeboard requirements are adhered to; • Freeboard 200mm maintained; and • HDPE liner.

Emission	Sources	Potential pathways	Proposed controls
		Pipelines spills/leaks	• Equipped with telemetry; or • Equipped with automatic cut-outs in the event of a pipe failure; or • Provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.
Category 31 Hydrogen Refuelling Station			
Oxygen gas vented to air as part of standard operations	HRS	Air/windborne pathway	N/A, none required.
Hydrogen gas vented to air (only during pressure relief)	HRS	Air/windborne pathway	N/A, none required.
Wastewater produced from the HRS	HRS	Direct discharge	Wastewater produced from the HRS will be of a high quality and mixed with the RO reject water in Codgers Transfer Pond. It will then be further mixed with mine dewatering water in Codgers Transfer Pond, which is HDPE lined.

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), 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 *(Guidance Statement: Environmental Siting* (DER 2016)).

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

Human receptors	Distance from prescribed activity
Construction camp and Operations camp	These camps are located within the prescribed premise boundary. Potential impacts of mine operations on these areas are governed by health and safety legislation and as such these are screened out as a sensitive premises.
Townsites and Homesteads	Nullagine is the nearest town, located over 60 km away from the prescribed premise boundary. Screened out as sufficient distance to avoid potential impacts. Roy Hill Station is located 30 km away. Marillana Homestead is located more than 40 km away. Screened out due to sufficient distance from emission premises.
Environmental receptors	**Distance from prescribed activity**
Surface water	The premises are situated approximately 1 km from the boundary of Fortescue Marsh. Fortescue Marsh is a nationally important and the largest ephemeral wetland in the Pilbara region, a Priority Ecological Community, and is listed on the Directory of Important Wetlands of Australia as a wetland of national significance.
Flora and Vegetation	There are no Threatened flora species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or Declared Rare Flora (DRF) listed under the *Biodiversity Conservation Act 2016* (BC Act) recorded within the premises boundary. Groundwater sensitive vegetation within or near the premises includes Mulga, Samphire and Coolibah / River Red Gum.
Livestock bores	Three livestock bores are located within the premises boundary, 22 Mile Bore, Rick's Bore and Gorge Bore. A fourth bore is over 3 km outside of the premises.
Groundwater	Groundwater in the project area is generally brackish (>1,000 mg/L TDS) and becomes increasingly saline towards the Fortescue Marsh and with depth (>100,000 mg/L TDS). The Premises sits over three main connected aquifers, the fresh-brackish Tertiary Detritals, brackish Marra Mamba formation and the hypersaline Oakover formation. The Oakover Formation is approximately 20 m thick and is confined to semi-confined by overlying clays and silts. Current injection at Christmas Creek has confirmed hydraulic disconnection between the Oakover Formation and overlying watertable. To the south of the premises, the MMF is overlain by Alluvial Clays and Tertiary Detritals consisting of layers of clays, silts and minor sandy gravels.
Fauna	Significant fauna identified as potentially occurring within the premises are the Northern Quoll, Night Parrot and Greater Bilby, Pilbara Leaf-nosed Bat and Pilbara Olive Python. Screened out as the proposed amendment is not expected to alter the risks to fauna species outside that addressed within MS 1033.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) 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 in-complete 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 L8454/2010/2 that accompanies this Amendment Report authorizes emissions associated with the operation of the Premises i.e. Categories 5, 6 and 31 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 during construction and 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**				
Construction								
Construction of Hydrogen Refuelling Station, Mobile Max Turkey's Nest, installation of tailings spigots and associated equipment including vehicle movements	Dust	Air/windborne pathway causing impacts to photosynthesis	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Slight L = Unlikely **Low Risk**	Y	N/A	N/A
	Hydrocarbons/chemicals	Direct discharge from leaks/spills and transfers	Groundwater No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Slight L = Unlikely **Low Risk**	Y	N/A	N/A
Operations								
Category 5 additional tailings spigots	Tailings leachate	Seepage through the base and walls of the TSF	Groundwater Groundwater dependent flora Mulga, Samphire and Coolibah / River Red Gum within or near the premises	Refer to Section 3.1.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 3, Table 2 Containment infrastructure has supernatant water collection and return system requirements in place Condition 9 updated to include Flinders In-pit TSF Spigots. Condition 10, Table 6 Infrastructure requirements include the	Provided the infrastructure is constructed correctly, the environmental risk is reduced so including as Infrastructure requirements.

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**				
							three tailings spigots. Condition 11 updated to include Flinders In-pit TSF Spigots.	
	Tailings liquid	Overtopping of the TSF walls	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Moderate L = Possible **Medium Risk**	Y	Condition 3, Table 2 Containment infrastructure has freeboard requirements in place. Condition 9 updated to include Flinders In-pit TSF Spigots. Condition 10, Table 6 Infrastructure requirements include the three tailings spigots. Condition 11 updated to include Flinders In-pit TSF Spigots.	Provided the infrastructure is constructed correctly, the environmental risk is reduced so including as Infrastructure requirements.
Category 6 Elvis Turkey's Nest	Brackish/saline water	Overtopping	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 3, Table 2 Containment infrastructure to require a HDPE liner and minimum vertical freeboard of 200mm.	N/A
		Pipelines spills/leaks	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near	Refer to Section 3.1.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 2 requires pipelines controls.	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**				
			the premises.					
Category 6 Mobile Max Turkey's Nest	Brackish/saline water	Overtopping of the tank	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 3, Table 2 Containment infrastructure to require a HDPE liner and minimum vertical freeboard of 200mm. Condition 9 updated to include Mobile Max Turkey's Nest. Condition 10, Table 6 Infrastructure requirements include HDPE liner, Minimum vertical freeboard of 200mm and Equipped with an in-flow cut off valve. Condition 11 updated to include Mobile Max Turkey's Nest.	Provided the infrastructure is constructed correctly, the environmental risk is reduced so including as Infrastructure requirements.
	Brackish/saline water	Pipelines spills/leaks	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Minor L = Unlikely **Medium Risk**	Y	Condition 2 requires pipelines controls.	N/A
Category 31 Hydrogen Refuelling Station	Oxygen gas vented to air as part of standard operations	Air/windborne pathway	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red	Refer to Section 3.1.1	C = Slight L = Rare **Low Risk**	Y	Condition 1, Table 1 Production or design capacity limits include Category 31 Chemical	Provided the infrastructure is constructed correctly, the environmental risk

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**				
			Gum within or near the premises.				manufacturing. Condition 9 updated to include the HRS. Condition 10, Table 6 Infrastructure requirements include the infrastructure to be constructed as per the details provided in the supporting documentation. Condition 11 updated to include the HRS.	is reduced so including as Infrastructure requirements.
	Hydrogen gas vented to air (only during pressure relief)	Air/windborne pathway	No Threatened flora species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	Refer to Section 3.1.1	C = Slight L = Rare **Low Risk**	Y	Condition 1, Table 1 Production or design capacity limits include Category 31 Chemical manufacturing. Condition 9 updated to include the HRS. Condition 10, Table 6 Infrastructure requirements include the infrastructure to be constructed as per the details provided in the supporting documentation. Condition 11 updated to include the HRS.	Provided the infrastructure is constructed correctly, the environmental risk is reduced so including as Infrastructure requirements.
	Wastewater of high	Direct discharge	No Threatened flora	Refer to Section	C = Slight	Y	Condition 1, Table 1 Production or design	Provided the infrastructure is

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**				
	quality		species, however, Mulga, Samphire and Coolibah / River Red Gum within or near the premises.	3.1.1	L = Unlikely **Low Risk**		capacity limits include Category 31 Chemical manufacturing Condition 6, Table 4 Management of Waste includes the HRS output water for use in dust suppression. Condition 9 updated to include the HRS. Condition 10, Table 6 Infrastructure requirements include the infrastructure to be constructed as per the details provided in the supporting documentation. Condition 11 updated to include the HRS. Condition 15, Table 10 Emissions to land includes the HRS output water to L4.	constructed correctly, the environmental risk is reduced so including as Infrastructure requirements.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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
Licence Holder was provided with draft amendment on 26 May 2021	Licence Holder provided comments on 01 June 2021 Refer to Appendix 1	Licence Holder provided comments on 01 June 2021 Refer to Appendix 1

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

Existing condition	Condition summary	Revised licence condition	Conversion notes
N/A	Contents	N/A	Deleted as per current licensing format.
N/A	Introduction	N/A	Deleted as per current licensing format.
N/A	Licence history	Licence history	Administrative changes.
1.1.1	Interpretation	Interpretation	Updated as per current licensing format.
1.1.2	Definitions	Definitions	Moved to the back of the Licence, now Table 19.
1.1.3	Australian or other standard	Interpretation	Condition deleted and now included in the updated 'Interpretation' section as per current licensing format.
1.1.4	Reference to code of practice	Interpretation	Condition deleted and now included in the updated 'Interpretation' section as per current licensing format.
1.2.1	Pipelines	2	Condition number changed only.
1.2.2, Table 1.2.1	Containment infrastructure	3, Table 2	TLO Settlement Pond (Jeffs) put in a new row as it also receives potentially contaminated water from the Power Station treated water pond. Elvis Turkey's Nest and Mobile Max

			Turkey's Nest included.
1.2.3, Table 1.2.2	Inspection of infrastructure	4, Table 3	Condition and table numbers changed only.
1.2.4	Annual water balance	5	Condition number changed only.
1.2.5, Table 1.2.3	Management of waste	6, Table 4	Addition of Uncontaminated Fill. HRS water included into dust suppression.
1.2.6, Table 1.2.4	Cover requirements	7, Table 5	Condition and table numbers changed only.
1.2.7	Windblown waste	8	Condition number changed only.
1.2.8, Table 1.2.5	Production or design capacity limits	1, Table 1	Included Category 31: Chemical manufacturing 195 tonnes per Annual Period
1.2.9	Infrastructure requirements	9	Updated to remove constructed infrastructure and include new infrastructure.
1.2.10, Table 1.2.6	Infrastructure requirements	10, Table 6	Included the Mobile Max Turkey's Nest, Flinders In-pit TSF Spigots and the Hydrogen Refuelling Station.
1.2.11	Operating infrastructure following compliance documents	11	Included the Mobile Max Turkey's Nest, Flinders In-pit TSF Spigots and the Hydrogen Refuelling Station.
1.2.12	Wastewater quality monitoring report for the Reverse Osmosis Plant Reject Water Stream	12	Removed as completed.
2.1.1, Table 2.1.1	Emission points to air	12, Table 7	Condition and table numbers changed only.
2.2.1, Table 2.2.1	Point source emissions to surface water	13, Table 8	Condition and table numbers changed only.
2.3.1, Table 2.3.1	Point source emissions to groundwater	14, Table 9	Condition and table numbers changed only.
2.4.1, Table 2.4.1	Emissions to land	15, Table 10	HRS water included to be mixed with RO brine. "TLO Settlement Pond" updated to "TLO Settlement Pond (Jeffs)" for consistency.
2.4.2, Table 2.4.2	Emission limits to land	16, Table 11	Condition and table numbers changed only. "TLO Settlement Pond" updated to "TLO Settlement Pond (Jeffs)" for consistency.
3.1.1	Sampling methods	17	Updated to remove constructed infrastructure and include new infrastructure.

3.1.2	Monitoring frequency	18	Condition number changed only.
3.1.3	Calibration	19	Condition number changed only.
3.2.1, Table 3.2.1	Monitoring of point source emissions to surface water	20, Table 12	Condition and table numbers changed only.
3.3.1, Table 3.3.1	Monitoring of point source emissions to groundwater	21, Table 13	Condition and table numbers changed only.
3.4.1, Table 3.4.1	Monitoring of emissions to land	22, Table 14	Condition and table numbers changed only.
3.5.1, Table 3.5.1	Process monitoring	23, Table 15	Condition and table numbers changed only.
3.6.1, Table 3.6.1	Monitoring of ambient groundwater quality	24, Table 16	Condition and table numbers changed only.
4.1.1	Maintaining books	25	Condition numbers changed only.
4.1.2	Maintaining books	26	Condition numbers changed only.
4.1.3	AACR	27	Condition number changed only.
4.1.4	Complaints	28	Condition number changed only.
4.2.1, Table 4.2.1	AER	29, Table 17	Conditions and table numbers changed only.
4.2.2	AER monitoring	30	Condition number changed only.
4.3.1, Table 4.3.1	Notification requirements	31, Table 18	Condition and table numbers changed only.
Schedule 1: Maps	The containment infrastructure map updated	Figure 3	Updated to include the Mobile Max Turkey's Nest and Elvis Turkey's Nest
Schedule 1: Maps	The locations of the used tyres and construction waste disposal locations map updated	Figure 9	Updated to reflect the updated 5 year mine plan and waste dumps.
Schedule 1: Maps	Maps of infrastructure, emissions points and monitoring points	Schedule 1: Maps	Relabeled with Figures.

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Licence history	'Licence history' table: typo – please change word from 'sued' to 'used'.	Updated as requested.
Condition 9	Remove text 'the pipeline from the Karntama RO Plant to Codgers Transfer Pond' from condition wording as this pipeline has been constructed and compliance report has been submitted to DWER on 21 May 2021.	Updated as requested.
Condition 10, Table 6	'Infrastructure requirements':remove 'Pipeline from Karntama RO Plant to Codger's Transfer Pond' infrastructure requirements row in table as this pipeline has been constructed.	Updated as requested.
Condition 11	Remove text 'pipeline from the Karntama RO Plant to Codgers Transfer Pond' as this pipeline has been constructed and compliance report has been submitted to DWER on 21 May 2021.	Updated as requested.
Condition 12	Remove this wastewater monitoring report condition as this monitoring report was submitted to DWER on 27 November 2020.	Updated as requested.
Condition 13, Table 7	'Emission points to air': typo in table please change text in table from '20ulphur' to 'sulphur'.	Updated as requested.
Condition 30, Table 17	'Annual Environmental Report': Reference to 'Condition 27' in second last row of table should be changed to reference 'Condition 28'.	Updated as requested.
Condition 30, Table 17	'Annual Environmental Report': Reference to 'Condition 28' in seond last row of table should be changed to reference 'Condition 29'.	Updated as requested.
Condition 32, Table 18	'Notification requirements': notification text under Condition 9 in table should remove reference to 'pipeline from the Karntama RO Plant to Codgers Transfer Pond'.	Updated as requested.

Condition	Summary of Licence Holder's comment	Department's response
Condition 32, Table 18	'Notification requirements': notification text under Condition 11 should be removed as the wastewater quality monitoring report was submitted to DWER on 27 November 2020.	Updated as requested.
Condition 32, Table 18	'Notification requirements': the calibration report should be removed from notification requirements table.	Updated as requested.
Schedule 1: Maps	Updated tailings spigots map to be included in the licence, where the existing and proposed tailings spigot points haven't changed in location but there was a typo with the labelling of the points	Updated as requested.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY					
Application type					
Works approval	☐				
Licence	☐	Relevant works approval number:		None	☐
		Has the works approval been complied with?		Yes ☐ No ☐	
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes ☐ No ☐ N/A ☐	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes ☐ No ☐	
		Date Report received:			
Renewal	☐	Current licence number:			
Amendment to works approval	☐	Current works approval number:			
Amendment to licence	☒	Current licence number:	L8454/2010/2		
		Relevant works approval number:		N/A	☐
Registration	☐	Current works approval number:		None	☐
Date application received		04/03/2021			
Applicant and Premises details					
Applicant name/s (full legal name/s)		Chichester Metals Pty Ltd			
Premises name		Christmas Creek Mine Site			
Premises location		Tenements E46/610, E46/612, M46/320, M46/321, M46/322, M46/323, M46/324, M46/325, M46/326, M46/327, M46/328, M46/329, M46/330, M46/331, M46/332, M46/333, M46/334, M46/335, M46/336, M46/337, M46/338, M46/339, M46/340, M46/341, M46/342, M46/343, M46/344, M46/345, M46/346, M46/347, M46/348, M46/349, M46/350, M46/351, M46/352, M46/353, M46/354, M46/355, M46/403, M46/406, M46/412, M46/413, M46/414, M46/415, M46/416, M46/417, M46/418, M46/419, M46/420, M46/421, M46/422, M46/423, M46/424, G46/7, L46/49, L46/56, L46/58, L46/86, L46/87, L46/106, L46/111, E46/566 and L46/66 MULGA DOWNS WA 6751			
Local Government Authority		Shire of East Pilbara			
Application documents					
HPCM file reference number:		DWERDT423248			
Key application documents (additional to application form):		Submission Letter Licence Amendment Supporting Document			

	Technical Memo
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	Licence amendment: • Construction and operation of the Hydrogen Refuelling Station (HRS) at the Christmas Creek Karntama Village that will be used for the refuelling of hydrogen powered vehicles on site; • Addition of the existing Elvis Turkey's Nest and proposed Mobile Max Turkey's Nest to the list of water containment infrastructure on licence; • Three additional tailings spigots required for tailings deposition along the southern and eastern embankments within Strip 12 of the Flinders In-Pit Tailings Storage Facility (TSF); and • Update to Schedule 1 map of containment infrastructure for disposal of used tyres, construction waste with updated 5 year mine pits and waste dumps.

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	77,000,000 tonnes per Annual Period	N/A
Category 6: Mine dewatering	43,000,000 tonnes per Annual Period (injected)	N/A
Category 31: Chemical manufacturing	N/A	195 tonnes per annual period
Category 52: Electric power generation	63.6 MWe	N/A
Category 54: Sewage facility	1,040 cubic metres per day	N/A
Category 57: Used tyre storage	2,000 tyres	N/A
Category 64: Class II putrescible landfill	10,000 tonnes per Annual period	N/A
Category 73: Bulk storage of chemicals	15,183.1 cubic metres in aggregate	N/A

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 ☐ No ☒	Referral decision No: N/A Managed under Part V ☒ Assessed under Part IV ☐

Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☒ No ☐	Ministerial statement No: 1033 EPA Report No: 1567
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☒ No ☐	Reference No: EPBC 2013/7055
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Certificate of title ☐ General lease ☐ Expiry: Mining lease / tenement ☐ Expiry: Other evidence ☐ Expiry:
Has the applicant obtained all relevant planning approvals?	Yes ☒ No ☐ N/A ☐	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☒	CPS No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: Licence/permit No: Christmas Creek Groundwater Operating Strategy (CC-PH-HY-0002, Revision 6, April 2016).
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☐ No ☒	Name: N/A Type: N/A Has Regulatory Services (Water) been consulted? Yes ☐ No ☐ N/A ☒ Regional office: N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☒

Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☒ No ☐	*Iron Ore (FMG Chichester Pty Ltd) Agreement Act*
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	N/A
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☒ No ☐	Classification: Information Request Incomplete Report Awaiting Classification Date of classification: N/A