



Application for Licence Amendment

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

Licence Number	L4247/1991/13
Licence Holder	Talison Lithium Australia Pty Ltd
ACN	139 401 308
File Number	DER2021/000278
Premises	Talison Lithium Mine Maranup Ford Road, GREENBUSHES WA 6254 Legal description – Mining Tenements M01/3, M01/6, M01/7, M01/8, M01/9, M1/16, G01/1 and G01/02 (As defined in Schedule 1)
Date of Report	27 July 2021
Decision	Revised licence granted

Lauren Edmands

MANAGER, RESOURCE INDUSTRIES

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

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1. Decision summary

Licence L4247/1991/13 is held by Talison Lithium Australia Pty Ltd (licence holder) for the Talison Lithium Mine (premises), located within the Shire of Bridgetown-Greenbushes, immediately to the southern boundary of the Town of Greenbushes, approximately 250 km south of Perth, Western Australia.

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 L4247/1991/13 has been granted.

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 Amendment summary

On 11 May 2021, the licence holder submitted an application to the department to amend licence L4247/1991/13 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act).

The following amendments relating to existing tailings storage facility 2 (TSF2) are being sought (Figure 1):

- Embankment raise to 1280 mRL
- Extension to buttress
- Ground enhancement works for foundation stability
- Additional underdrainage

Details of the proposed amendments are listed in Table 1 and shown in Figure 1 and Figure 2 below.

Table 1 Overview of proposed amendments

Item	Proposed amendments	Comment
TSF2 embankment height	Currently approved 1280 mRL, no further amendment	No change
TSF2 footprint	Increase from current 95.32 ha to 99.43 ha	No clearing proposed, emissions and discharges unaffected during operations
Buttress works	<ul style="list-style-type: none">• Upper buttress will be constructed along the full extent of the southern and western wall from the lower buttress to the crest of the 1275 mRL raise• Lower buttress modified along full length of western wall, rising along	Emissions and discharges unaffected for operations

Item	Proposed amendments	Comment
	southern wall <ul style="list-style-type: none"> Buttress locally widened at western wall where ground enhancement is required 	
Ground enhancements	<ul style="list-style-type: none"> Ground stability enhancements 	Emissions and discharges unaffected for operations
Underdrainage and pipelines	<ul style="list-style-type: none"> Two outlets through the north wall discharging into the ROM drainage sumps Three outlets through the west wall and two through the south, all discharging into a common collector pipe that will transfer seepage into existing seepage sump 3 Return water pipelines from exiting Sump 1, Sump 2 and Sump 3 will be re-routed to avoid ground enhancement works construction. The function and capacity of seepage collection remains unchanged. 	Underdrainage improves phreatic surface through embankment and further enhances the capture of seepage water from TSF2, minimising the movement of water towards the basement aquifer. This results in improved seepage management, and does not change the risk of emissions and discharges.
Sumps and trenches	<ul style="list-style-type: none"> Sump 1, Sump 2, Sump 3 remain in same location Sump 1 access riser to be raised above level of proposed buttress One upstream drainage trench positioned 25 m and 35 m from the raise centreline along the southern and western walls at RL 1270 m (blue line, Figure 3) One upstream drainage trench positioned 25 m from the raise centreline along the southern, western and northern wall (red line, Figure 3) 	No change to the capacity of infrastructure requirements proposed. Emissions and discharges unaffected for operations. See Figure 3

The operational TSF2 is currently approved under licence L4247/1991/13. An amendment to the licence (July 2016), authorised the embankment raise of TSF2 to 1280 mRL, however the final height has not yet been constructed. Since the initial approval, the ANCOLD (2019) Guideline on Tailings Dams has been updated. To align with the updated guidance, in particular the stability requirements, the licence holder has updated the design documents for the TSF2 embankment raise to 1280mRL. These updated design documents were submitted as part of this amendment application. They will be incorporated into the Licence to replace the current referenced design documents (in Table 1.3.1 of condition 1.3.1) which do not meet the ANCOLD (2019) Guideline on Tailings Dams. The updated documents include changes related to stability which are not considered under Part V of the EP Act. The documents do not change the height or risks of emissions and discharges associated with the embankment raise which was approved in 2016. The condition (condition 4.2.4) in the current licence requiring the submission of a compliance report to the CEO after completing the construction of the embankment raise to 1280 mRL remains unchanged. This amendment is limited only to changes to category 5 activities from the existing licence.

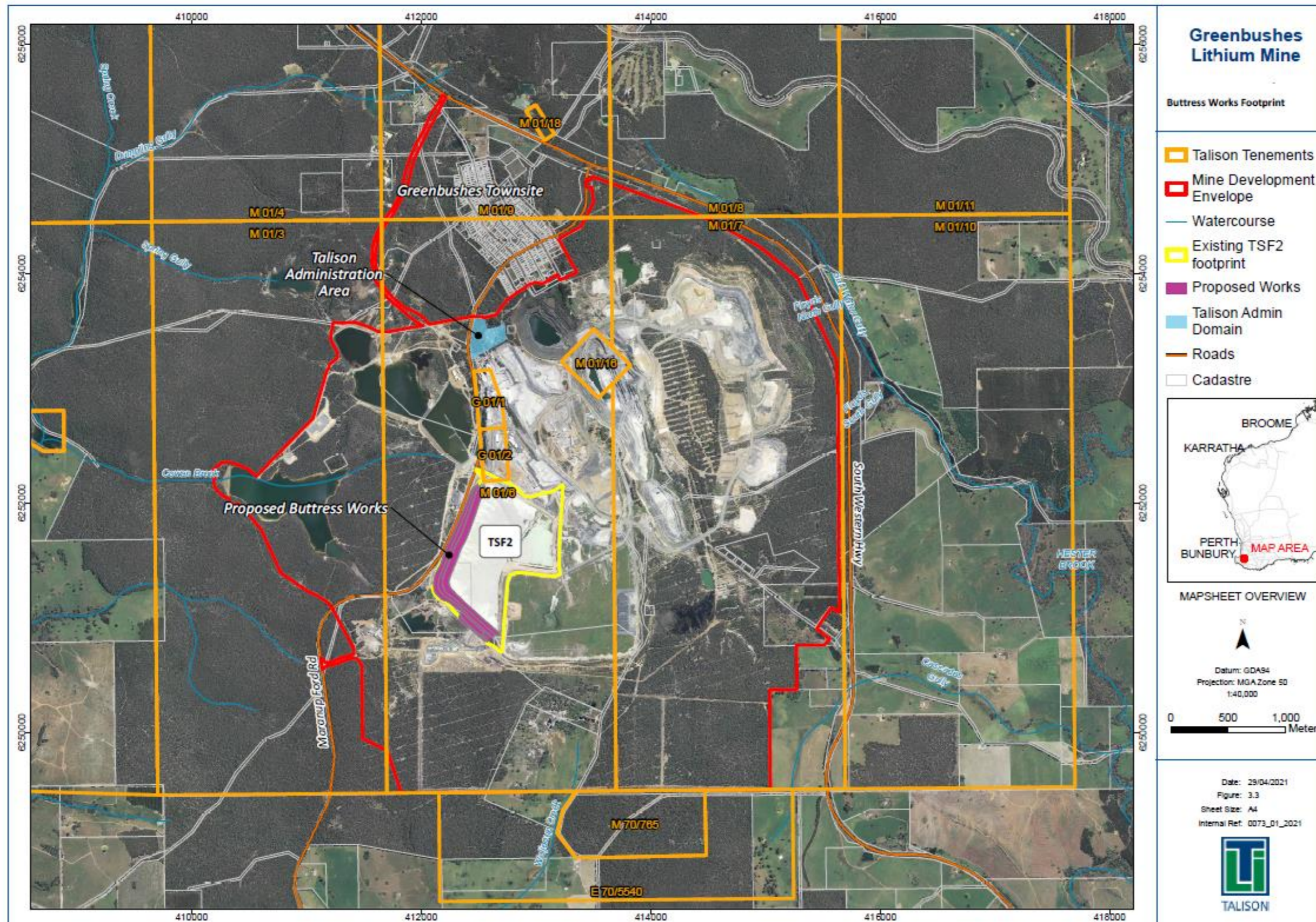
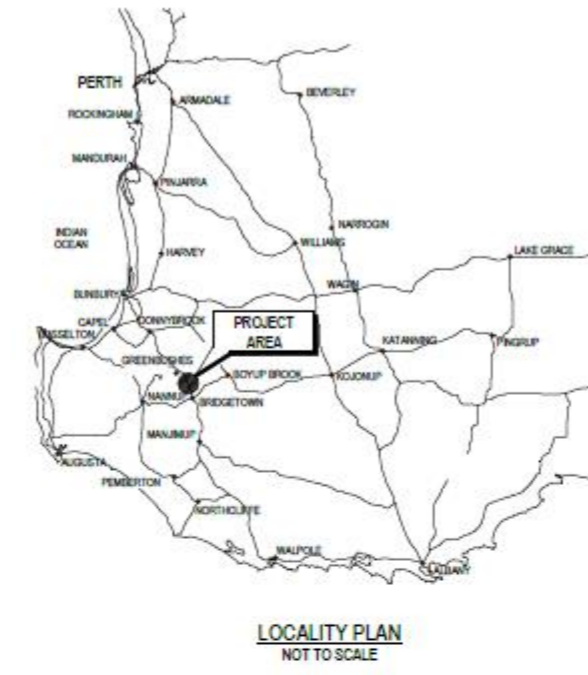
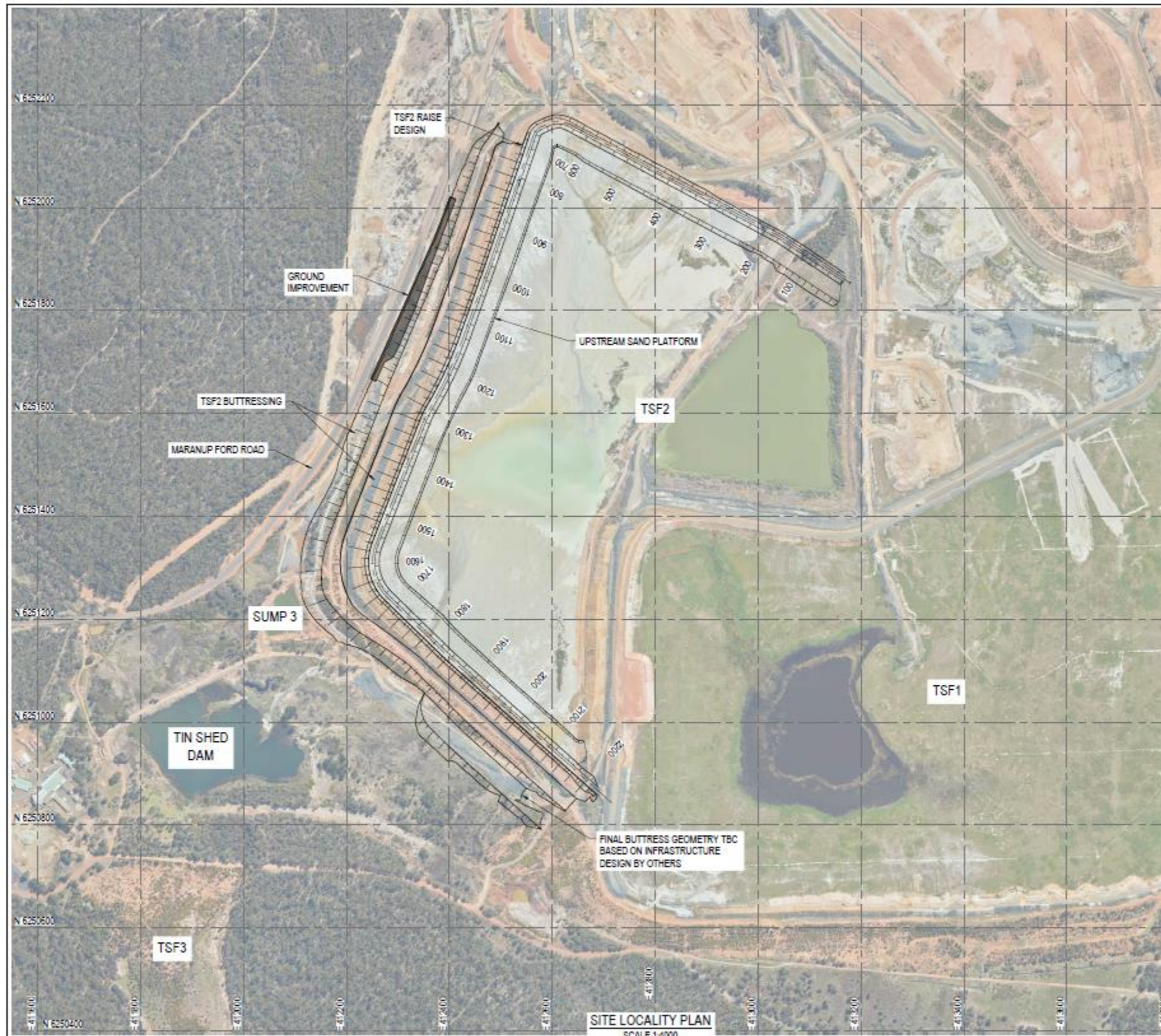


Figure 1 Location of TSF2 and proposed buttress works



DRAWING INDEX	
DRG. NO.	DRAWING TITLE
12518689-C021	SITE LOCALITY PLAN & DRAWING LIST
12518689-C022	GENERAL ARRANGEMENT AND EARTHWORKS
12518689-C023	TYPICAL CROSS SECTION DETAILS - BUTTRESS
12518689-C024	TYPICAL CROSS SECTION DETAILS - SOUTH & WEST EMBANKMENT
12518689-C025	TYPICAL CROSS SECTION DETAILS - NORTH EMBANKMENT
12518689-C026	TIE-IN DETAILS
12518689-C027	UNDERDRAINAGE LAYOUT
12518689-C028	UNDERDRAINAGE LONG SECTIONS
12518689-C029	UNDERDRAINAGE DETAILS
12518689-C030	GROUND IMPROVEMENT LAYOUT PLAN AND SERVICES
12518689-C031	GROUND IMPROVEMENT DETAILS
12518689-C032	EXISTING MONITORING LOCATIONS

LEGEND:
 GROUND IMPROVEMENT

BASE SURVEY SUPPLIED BY:
 TALISON LITHIUM PTY LTD (NOTE 1)
 RECEIVED ON: 25 MARCH 2020
 CO-ORDINATE GRID: MGA94-50
 LEVEL DATUM: MINE DATUM

PRELIMINARY

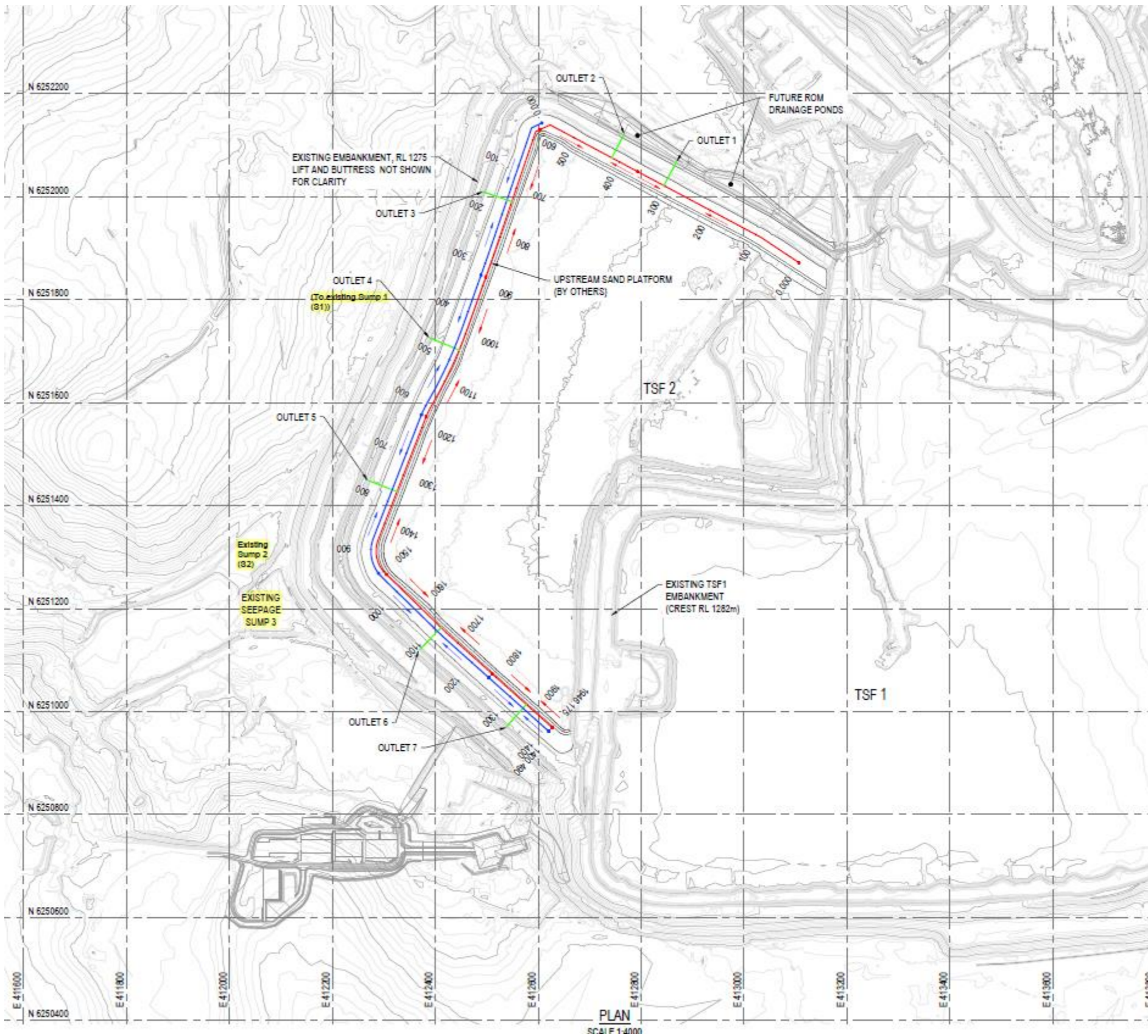
No	Revision	Date	By	Check	Project
A	ISSUED FOR CLIENT COMMENT		BG	GB	MA
		29/03/21			



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DO NOT SCALE		Drawn: S. GAINSON	Designer: G. BAK	Client: TALISON LITHIUM PTY LTD
Conditions of Use: This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purposes for which it was prepared and must not be used by any other person or for any other purpose.	Drafting Check: [] Approved (Project Director) Date: []	Design Check: []	Scale: 1:4000	Project: TSF2 RAISES TO RL1275m AND 1280m Title: SITE LOCALITY PLAN & DRAWING LIST
				Drawing No: 12518689-C021
				Rev: A

Figure 2 Proposed works locations



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE (U.N.O).
2. FOR LONG SECTIONS REFER TO DRAWING 12518689-C028.
3. FOR TYPICAL DETAILS REFER TO DRAWING 12518689-C029.
4. FOR SET-OUT REFER TO PROVIDED UNDERDRAINAGE MODEL 12518689-3DM_UNDERDRAINAGE.
5. LEVELS TO BE CONFIRMED BEFORE CONSTRUCTION.
6. SEEPAGE FROM NORTHERN WALL OUTLETS TO EXIT TO ROM DRAINAGE PONDS.

LEGEND:

- DRAINCOIL TRENCH (OUTER)
- DRAINCOIL TRENCH (INNER)
- DN200mm UNDERDRAINAGE OUTLETS

BASE SURVEY SUPPLIED BY:
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 CO-ORDINATE GRID: MGA94-50
 LEVEL DATUM: MINE DATUM

Figure 4: Proposed (Intermediate) Underdrainage Layout

Figure 3 Proposed seepage trenches and existing sumps

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 and operation which have been considered in this amendment report are detailed in Table 2 below.

Table 2 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Dust	Construction of buttress, underdrainage and earthworks of TSF2	Air/windborne pathway	Controls set out in the existing dust management plan (2020), such dust suppression using water cart. Additionally, the licence holder proposes to continue with the current dust monitoring program which is set out in works approval W6283/2019/1, with regular reporting and which consists of: <ul style="list-style-type: none"> • Meteorological monitoring • Osiris Dust monitoring (TSF, PM10) at the northern boundary and south east boundary • HiVol monitoring at the northern boundary
Noise			Noise Management plan which includes continuous noise monitoring at the noise bund. Noise of the operations currently regulated under a Regulation 17 exemption of the <i>Environmental Protection (Noise) Regulations 1997</i> , and will therefore not be assessed as part of this assessment.
Seepage from additional tailings deposited into TSF2	TSF2	Seepage to soils, surface- and groundwater	The proposed embankment height of 1280 mRL has previously been assessed and approved by the department in 2016, which is reflected in the current licence. The new design aligns with new stability requirements as set out in the relevant ANCOLD (2019) guideline only, and does not alter the risk of emissions and discharges. Seepage from the TSF2 resulting from the proposed embankment height is therefore not further addressed as part of this assessment.

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 3 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)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Town of Greenbushes	<1 km north from premises boundary
Multiple residents south, south east and south west of the premises boundary	Approx. 255 m – 1.7 km from premises boundary
Environmental receptors	Distance from prescribed activity
Greenbushes State Forest Hester State Forest	Surrounding the premises. No additional emissions or discharges result from proposed works which may impact these receptors. These environmental receptors are therefore not further assessed in this amendment report.
Threatened/Priority Flora and Fauna	No additional clearing is proposed, and TSF2 is already operational. Upgrade works unlikely change the impact already occurring. These environmental receptors are therefore not further assessed in this amendment report.
Greenbushes Catchment Area	North of the premises boundary No additional emissions or discharges result from proposed works which may impact these receptors. These environmental receptors are therefore not further assessed in this amendment report.
Blackwood River	South of the premises boundary No additional emissions or discharges result from proposed works which may impact these receptors. These environmental receptors are therefore not further assessed in this amendment report.
Identified bores in close proximity	Groundwater bores identified south (down-hydraulic gradient) of premises: 700 m, 790 m, 2.8 km south; 2.2 km, 3 km south west, 330 m east No additional emissions or discharges result from proposed works which may impact these receptors. These environmental receptors are therefore not further assessed in this amendment report.

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 in-complete they have not been considered further in the risk assessment.

Due to the nature of proposed works, only dust during construction was identified as potential emission to occur. No changes of emissions and discharges during operations are resulting from this amendment.

3.2.1 Dust emissions during construction

Construction works are expected to be of relatively short timeframe and dust emissions are expected to have minimal impact off site. The Delegated Officer considers the consequence of this risk event as **Minor**. Existing dust monitoring networks and dust controls are regulated under the existing licence and the current works approval W6283/2019/1. The Delegated Officer considers the likelihood of receptors being impacted as **Unlikely**.

The Delegated Officer has compared the consequence and likelihood ratings described above and determined the overall rating for the risk of dust emissions during construction as **Low**.

No additional controls have been placed on the licence based on the assessed risk for dust emissions during construction.

The revised licence L4247/1991/13 that accompanies this amendment report authorises emissions associated with the operation of the premises.

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

4. Consultation

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

Table 4: Consultation

Consultation method	Comments received	Department response
Licence holder was provided with draft amendment on (16/7/21)	Applicant waived consultation period on 19/7/21	N/A
Department of Mines, Industry Regulation and Safety (DMIRS) advised of proposal (18/6/21)	Mining proposal (Reg ID 96748) under the Mining Act 1978 has been lodged and approved by DMIRS.	N/A
Local Government Authority advised of proposal on (18/6/21)	N/A	N/A

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 5 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. The amendments reflect the infrastructure changes for TSF2.

Table 5: Summary of licence amendments

Condition no.	Proposed amendments
1.3.1, Table 1.3.1	Updated number of seepage collection trenches to reflect current operations. Updated S1, S2 and S3 are equipped with pumps to reflect current operations. Updated design requirements in accordance with licence amendment application submitted in 2021. This supersedes the previous referenced supporting documents from 2015 in the table.
Figure 7	Location of proposed new trenches for TSF2 embankment raise to 1280 mRL

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Talison Lithium Australia Pty Ltd, Works approval application (May 2021) (DWERDT449983)

Talison Lithium Australia Pty Ltd, Revised Licence amendment application (June 2021) (DWERDT466620)

Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY	
Application type	
Works approval	<input checked="" type="checkbox"/> Submitted as works approval, but as per DO discretion this application will be assessed as licence amendment (L4247/1991/13)
Date application received	11 May 2021
Applicant and Premises details	
Applicant name/s (full legal name/s)	Talison Lithium Australia Pty Ltd
Premises name	Talison Lithium Mine
Premises location	Talison Lithium Mine Maranup Ford Road, GREENBUSHES WA 6254 Legal description - Mining Tenements M01/3, M01/6, M01/7, M01/8, M01/9, M1/16, G01/1 and G01/02 (As defined in Schedule 1)
Local Government Authority	Shire of Bridgetown-Greenbushes
Application documents	
HPCM file reference number:	DER2021/000278
Key application documents (additional to application form):	Works approval application form Cover letter Supporting document Appendices A-F Premises boundary shape file
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	Licence amendment (submitted as works approval by applicant) for TSF2 upgrade works: <ul style="list-style-type: none"> • Embankment raise to 1280 mRL (already approved under licence, but design updated to reflect the ANCOLD (2019) Guidelines on tailings dams update) • Extension to buttress • Ground enhancements to foundation • Additional underdrainage

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	No change to the current approved throughput of 4 700 000 tonnes beneficiated/year & 5 000 000 tonnes of tailings/year	

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 type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: MS 1111 EPA Report No: 1635 For mine expansion (currently regulated under W6283/2019/1)
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Mining lease / tenement <input checked="" type="checkbox"/> Expiry: 27/12/2026
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	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 <input type="checkbox"/> No <input type="checkbox"/>	No clearing is proposed.
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"/>	No clearing is proposed.

Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Licence / permit not required.
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"/>	N/A
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i> , <i>Environmental Protection (Controlled Waste) Regulations 2004</i> , <i>State Agreement Act xxxx</i>)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<ul style="list-style-type: none"> • Part IV of the EP Act • Noise Regulations Regulation 17 exemption • Part V of the EP Act (WA)-Clearing • Department of the Environment and Energy (DoEE) • Mining Act 1978 • Contaminated Sites Act 2003
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	N/A
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Classification: Contaminated-restricted use' in 2015 (ID 34013)