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Executive Summary

Wulguru Technical Services (WTS) was engaged by Chinova Resources Osborne Pty Ltd (Chinova), the owners and operators of the Osborne Mine (the Project), to prepare supporting information for an amendment to Environmental Authority (EA) EPML00873613. This application provides a detailed response to the following guidelines:

- *Application requirements for activities with impacts to air* (DETSI, 2024b).
- *Application requirements for activities with impacts to land* (DETSI, 2024c).
- *Application requirements for activities with impacts to water* (DETSI, 2024d).
- *Application requirements for activities with noise impacts* (DETSI, 2024e).
- *Application requirements for activities with waste impacts* (DETSI, 2024f).
- *Approval processes for Environmental Authorities* (DETSI, 2024g)

This amendment proposes to modify authorised disturbances detailed within EA Table A1 – Authorised Disturbance to accurately reflect existing on-ground disturbances. No additional disturbance is proposed as part of this amendment.

The proposed amendment has been determined to be of negligible risk to all environmental values. Existing controls can continue to be implemented to maintain the level of risk to as low as reasonably practicable.

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1. Introduction

Wulguru Technical Services Pty Ltd (WTS) was engaged by Chinova Resources Osborne Pty Ltd (Chinova), owner and operator of the Osborne Mine (the Project), to prepare supporting information for amendments to Environmental Authority (EA) EPML00873613, dated 5 April 2024.

Preparation of a Progressive Rehabilitation and Closure Plan (PRCP) identified discrepancies between authorised and current on-ground disturbances. Additionally, feedback from the Department of Environment, Tourism, Science and Innovation (DETSI) following an Estimated Rehabilitation Cost (ERC) application, identified discrepancies between the proposed rehabilitation methods and what is authorised by the EA. This application proposes the retrospective assessment and approval of historical disturbances for activities to continue in compliance with the *Environmental Protection Act 1994* and allow consistency between different legislative frameworks.

1.1. Purpose

The purpose of this document is to describe the existing environmental values and assess the potential environmental impacts that may arise from the proposed amendments. A risk assessment has been completed for the identified potential impacts and reasonable and appropriate mitigation measures are proposed.

1.2. Project Location

The Osborne Project is located approximately 195 km south-east of Mount Isa in north-west Queensland (Figure 1). The Project includes two satellite assets known as Trekelano and Lucky Luke. Trekelano is located approximately 90 km south-east of Mount Isa. Luckly Luke is an undeveloped copper deposit, located 30 kms north-west of the Osborne Project area.

The entire Project encompasses seven (7) Mining Leases (MLs), as detailed in Table 1, with underlying landholders are identified in Table 2.

The Project is underlain by six (6) separate pastoral holdings, including:

- Burnham (considered part of the Chatsworth Station), owned by MDH Pty Ltd;
- Chatsworth, owned by MDH Pty Ltd;
- Pilgrim, owned by Robert John McDonald (part of the MDH group);
- Trekelano, owned by James and Veronica Brown;
- Pathungra, owned by John and Patricia Treloar; and
- Kheri, owned by William Cameron.

Table 1. Granted tenures for the Project and associated activities

Project	Mining Lease	Mining Lease Name	Area (ha)	Activities
Luckly Luke	ML90187	Lucky Luke	1572.56	Open Cut Pit Waste Rock Emplacement Ancillary Infrastructure (workshop, administration building, landfill) ROM Topsoil Stockpiles
Osborne	ML90040	Osborne	2152	Osborne Pit Waste Rock Emplacements TSF1 TSF2 Processing Plant Ancillary Infrastructure (accommodation village, administration buildings, workshops, sewage treatment plants, haul roads, pipelines, bores, magazines, landfills, laydown areas, Kulthor surface infrastructure) Material stockpiles Power station Exploration
	ML90158	Kulthor	1771	
	ML90057	Borefield and Services	64.31	
Trekelano	ML90183	Trekelano Extended	8.41	Trekelano Pit Inheritance Pit Waste Rock Emplacement Sediment Basin Topsoil Stockpile Permanent Roads and Tracks Rehabilitation Areas
	ML90125	Trekelano	180.1	
	ML90128	Trikilana	181.7	

Note: Development has not commenced at Lucky Luke. Accordingly, all activities at this project are proposed.

Table 2. Underlying landholder

Lot	Plan	Tenure	Landholder	Mining Lease Overlap
5328	SP271692	Lands Lease	MDH Pty Ltd	ML90040 ML90158 ML90057
2	WNR12	Lands Lease	Treloar	ML90057
5354	PH1831	Lands Lease	Cameron	ML90057
13	SP309109	Lands Lease	MDH Pty Ltd	ML90187
2949	SP223508	Lands Lease	McDonald	ML90128 ML90183
22	SP223509	Lands Lease	Brown	ML90125
109	SP213577	Lands Lease	Chinova Resources Osborne Pty Ltd	ML90125 ML90183 ML90128
12	CW20	Lands Lease	Chinova Resources Osborne Pty Ltd	ML90183

LUCKY LUKE

Lucky Luke

437980E
441480E
7592300N
7588800N
7585300N
0 1.5 3 km

LEGEND

- Mining lease
- Key features

Sources:
QLD Department of Resources (2025)
Google Satellite

Mount Isa
Trekelano
Lucky Luke
Osborne

362000E
452000E
7724300N
7634300N
7544300N
0 35 70 km

OSBORNE

Osborne

452740E
456740E
7558880N
7554880N
7550880N
0 1.5 3 km

TREKELANO

Trekelano

385150E
386450E
7625950N
7624650N
7623350N
0 500 1,000 m

EA AMENDMENT

FIGURE 1. PROJECT LOCATION

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CRS: GDA2020 / MGA zone 54

Date: 19 June 2025

Author: H. Robb

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1.3. Legislative Context

1.3.1. Environmental Protection Act 1994 (Qld)

The *Environmental Protection Act 1994* (EP Act) is Queensland's primary piece of environmental legislation. The objective of the EP Act is to 'protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends'.

'Environment' is defined under the Act as (section 8):

- Ecosystems and their constituent parts, including people and communities;
- All natural and physical resources;
- The qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and
- The social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c).

To ensure the protection of environmental values, Chinova are required to meet the requirements of the EP Act and its subordinate legislations.

1.3.2. Mineral Resources Act 1989 (Qld)

The *Mineral Resources Act 1989* (Qld) (MR Act) provides for the assessment, development and utilisation of mineral resources. The MR Act establishes a framework to facilitate mining-related activities through the leasing of prospecting, exploration, mineral development, and mining tenure.

Approval is required to mine the minerals specified in the lease and for all purposes necessary to effectually carry out mining as well as other mining activities specified in the ML and associated with, arising from, or promoting the activity of mining. Mining and production and associated activities including processing and rehabilitation must be conducted within a ML.

2. Overview of Proposed EA Amendment

Applications to amend an EA must be made in accordance with s.224 and s.225 of the EP Act and meet the application requirements detailed in s.226. An application must also comply with s.226AA, s.226A, s.226B, s.227 and s.227AA to be considered 'properly made'.

2.1. Proposed Amendments

2.1.1. Proposed Amendment 1: Revised Area of Authorised Structures

This amendment proposes to modify the maximum disturbance area for existing features currently authorised under Schedule A, Table A1 – Authorised Disturbances of the EA (date: 5 April 2024), to accurately reflect on-ground disturbance (refer Table 3). All disturbances have been reviewed utilising the Google Satellite aerial imagery, accessed 22 April 2025.

Features have previously been identified in Table A1, however, the total authorised disturbance areas are not consistent with on-ground disturbance. Minor amounts of overclear were identified at Trekelano. No overclear was identified at Lucky Luke. The majority of overclear has been identified at Osborne and Kulthor. The amendment does not propose any additional disturbance or future on ground works to occur. All features will continue to be managed in accordance with existing Project procedures.

Unauthorised borrow pits have previously been established within the authorised disturbance footprints for the TSF2 Stockpile NE and TSF2 Stockpile E. As no topsoil stockpile has been constructed at TSF2 Stockpile NE, this feature has been removed from Table A1. A topsoil stockpile remains in place at TSF2 Stockpile E; however, the authorised disturbance area has been reduced to 0.6 ha to reflect the actual on-ground extent, with the remaining area occupied by the borrow pit. Amendment 2 (refer Section 2.1.2) proposes the inclusion of borrow pits within Table A1 of the EA. The existing, unauthorised borrow pits within the footprint for TSF2 Stockpile NE and TSF2 Stockpile E will be captured under this feature.

2.1.2. Proposed Amendment 2: Authorisation of Existing, Unauthorised Mine Features

Several existing features have not previously been defined in Table A1. This amendment proposes the inclusion of the following mine features to Table A1:

- Borrow Pits (10.87 ha) (Figure 4)
- TSF2 East Environmental Dam (in approved Borrow Pits footprint (0.79 ha)) (Figure 5)
- Administration Office (0.41 ha) (Figure 6)
- Magazine (0.46 ha) (Figure 7)
- Magazine Topsoil Stockpiles (0.74 ha) (Figure 8)
- Processing Plant Topsoil Stockpiles (0.91 ha) (Figure 8)
- Trekelano Topsoil Stockpile (9.60 ha) (Figure 9)

For consistency, TSF2 East Environmental Dam has been incorporated into the water storage monitoring schedule defined in Table C – 11 (Onsite Water Storage Monitoring).

These features currently exist on ground and are actively being utilised for Project activities. The amendment does not propose any future disturbance or additional on ground works.

No new features are proposed for inclusion at Lucky Luke.

2.1.3. Proposed Amendment 3: Disposal of Water and Dam Liners within the Osborne Pit

The amendment proposes to modify Condition E6-3 of the EA to authorise the disposal of water and dam liners within the Osborne pit. The EA currently authorises the disposal of regulated waste into the open pit, including potentially acid forming (PAF) material, mineralized waste, construction/demolition waste, and general inert site clean-up materials.

A revised Condition E6-3 has been provided within Section 2.2 below**.**

2.2. Proposed Conditioning

A revised Table A1 – Authorised Disturbance is provided for inclusion in the EA (Table 3). Revised areas are provided to two decimal places. Where the maximum authorised area is greater than the on-ground disturbance, the maximum area has been retained. Proposed Schedule I – Maps/Plans are provided in **Appendix A: Proposed Schedule J – Maps and Plans**.

A proposed Table C11 – Onsite Water Storage Monitoring (Table 4) and revised Condition E6-3 are provided below for inclusion in the EA.

Table 3. Proposed Table A1 – Authorised Disturbance

Mine Domain	Mine Feature Name	Mining Lease/s located upon	Location (MGA94, zone 55)		Maximum Disturbance Area (ha)
			Northing	Easting	
Waste Rock Dump (WRD) and Ore Stockpiles	Osborne WRD	90040	7557032	456179	15.27
			7557375	456485	
			7556882	456895	
	Osborne West WRD	90040	7556454	455557	13.71
			7556308	455791	
			7555792	455443	
			7555745	455677	
	Lucky Luke WRD	90187	7589350	441158	50.00
			7589244	440783	
			7588538	440723	
			7588534	441441	
			7589096	441452	
	Trekelano WRD	90125	7623669	386545	67.12
			7624290	385711	
			7624128	385177	
			7623307	385397	
Run of Mine (ROM)	Osborne ROM	90040	7556827	456502	19.73

Mine Domain	Mine Feature Name	Mining Lease/s located upon	Location (MGA94, zone 55)		Maximum Disturbance Area (ha)
			Northing	Easting	
	Lucky Luke ROM	90187	7589035	440664	6.65
Processing Area	Osborne Processing Plant	90040	7556706	456905	8.61
Open Cut Pit	Trekelano Inheritance Pit	90183 and 90125	7623834	386354	26.29
			7624093	386587	
			7624519	386464	
			7624490	386180	
			7623992	386151	
	Trekelano Pit	90125	7624594	386105	5.59
			7624742	386089	
			7624875	385999	
			7624707	385869	
			7624584	385915	
	Osborne Pit and Extension	90040	7556581	456043	27.65
			7556288	456108	
			7556488	455737	
			7556912	455809	
			7556945	456130	
	Lucky Luke Pit	90187	7589639	440727	10.09
			7589512	440546	
			7589306	440615	
Tailings Storage Facility (TSF)	TSF1	90040	7555186	456031	56.15
			7556153	456242	
			7556247	455757	
			7555308	455530	
	TSF2	90040	7556105	456703	167.56
			7555711	456725	
			7555207	456898	
			7555114	458141	
			7555928	458145	
			7556556	457893	
			7557021	457543	
			7557047	457159	
	TSF3	90040	7555801	455328	39.13
			7556079	455282	
			7555661	454796	
			7555496	454810	
			7555263	455543	

Mine Domain	Mine Feature Name	Mining Lease/s located upon	Location (MGA94, zone 55)		Maximum Disturbance Area (ha)
			Northing	Easting	
Dams and Diversions	TSF2 Reclaim Dam	90040	7555416	457792	In TSF2 footprint (27.00 ha)
	Environmental Dams 2 and 3	90040	7557364	456550	4.54
	Environmental Dam 1	90040	7556351	455301	10.26
	Environmental Dam 4	90040	7556844	456960	0.49
	Trekelano Sediment Dam	90125	7623409	386049	3.46
	Lucky Luke Sediment Dam	90187	7588243	441472	0.93
	Lucky Luke Storm Water Dam	90187	7588777	440647	1.00
	Lucky Luke De-water Dam	90187	7589574	440500	0.76
	TSF 3 Reclaim Dam	90040	7556217	455103	18.26
	TSF2 East Environmental Dam	90040	7556598	457805	In Borrow Pits footprint (0.79 ha)
Topsoil Stockpiles	TSF1 Stockpile West	90040	7555961	455494	6.78
	TSF2 Stockpile West	90040	7556042	456598	0.95
	TSF1 WRD Stockpile	90040	7556317	456004	9.57
	TSF2 Stockpile E	90040	7555997	458258	0.60
	Osborne Pit Stockpile	90040	7556823	455671	5.34
	Lucky Luke Stockpile	90187	7588408	441055	14.42
	Magazine Stockpile	90040	7555230	457339	0.74
			7555244	457070	
	Processing Plant Topsoil	90040	7556482	457071	0.91
	Trekelano Topsoil Stockpile	90125	7624299	385496	9.60
Ancillary Infrastructure	Airport Health Clinic and STP	90040	7557614	454617	0.025
	Administration Office	90040	7556484	456551	0.41
	Old Health Clinic and STP	90040	7556081	456287	0.46
	Contractor Workshop (open cut pit extension)	90040	7556586	456544	0.033
	Osborne Landfill/Laydown	90040	7555984	456726	10.59
	Bowser/Power Station	90040	7556403	256878	2.20
	Osborne Mine Workshop	90040	7556598	457070	3.72
	Kulthor Surface Infrastructure	90040	7556544	454342	24.54
	Osborne Village	90040	7553040	455542	9.75
	Osborne Airstrip	90040 and 90158	7557623	454691	33.38
	New Osborne Core Shed	90040	7556844	454830	3.60
	Osborne Contractor Yard	90040	7556434	456206	3.30
	OSJ Shed	90040	7556858	454984	3.17

Mine Domain	Mine Feature Name	Mining Lease/s located upon	Location (MGA94, zone 55)		Maximum Disturbance Area (ha)
			Northing	Easting	
	Osborne Pit Workshop	90040	7556591	454844	3.20
	Trekelano Camp/Office	90125	7624881	386275	0.50
	Lucky Luke Landfill	90187	7588614	440641	0.61
	Lucky Luke Office/Workshop	90187	7587759	440598	0.89
	Gas and Borefields Pipeline	90040 and 90057	NA	NA	30.13
	Borrow Pits	90040	Various		10.87
	Magazine	90040	7555207	457103	0.46
			7555244	457425	
Roads and Tracks	Osborne	90040 and 90158	NA	NA	131.41
	Lucky Luke	90187	NA	NA	16.15
	Trekelano	90125 and 90128	NA	NA	1.86

Table 4. Proposed Table C11 – Onsite Water Storage Monitoring Locations

Monitoring Point	Coordinates (MGA94, Z54)		Monitoring Frequency
	Northing	Easting	
Environmental Dam 1	7556343	455189	Quarterly (if water is present)
Environmental Dam 3	7557282	456686	
Trekelano Environmental Dam 1	7623486	385979	
Lucky Luke Environmental Dam 1	7588243	441472	
Luky Luke Stormwater Dam	7588777	440647	
TSF2 East Environmental Dam	7556624	457852	

Condition E6-3

The regulated waste licenced for disposal in the Tailings Storage areas listed in Schedule A- Table A1 (Authorised Mining Activities) and/or in the Osborne open cut pit is limited to:

a) *Tailings from the mineral processing operation originating from activities located on ML90187, ML90040, ML90057, ML90183, ML90125, ML90068, ML90128, ML90158 and ML2733;*
b) *Potential acid forming material of up to 0.61 Million m3 from TSF2;*
c) *(EML Project) Tailings of up to 4.25 Million m3;*
d) *TSF2 material of up to 0.42 Million m3 stockpiled on the ROM;*
e) *Potential acid forming material of up to 0.88 Million m3 stored on the TSF1 oxide cell;*

f) *Mineralized waste and screen fines of up to 0.185 Million m3;*

g) *General inert site clean-up materials of up to 0.05 Million m3;*

h) *Mine affected waters of from the Process Water Pond, Environment Dam 2/3, Environment Dam 4, Kulthor Turkey's Nest, TSF2 Reclaim Dam, and Workshop Ponds;*

i) *Dam liners from the Process Water Pond and Kulthor Turkey's Nest.*

2.3. Justification of Proposed Amendment

All persons under Section 319 of the EP Act must fulfill their general environmental duty to not carry out any activity that causes, or is likely to cause, environmental harm unless the person has an authority to do so or has taken all reasonably practicable measures to prevent or minimise the harm. This amendment is required to ensure that Project activities are lawful and appropriately managed. Additionally, this will ensure consistency is achieved between various legislative frameworks (i.e. PRCP and ERC).

To reiterate, no future disturbance is planned to occur under this proposed amendment.

2.3.1. Justification Proposed Amendment 1

This amendment seeks the authorisation of existing disturbance, above what is currently authorised. A review of historical aerial imagery identified that this disturbance occurred across the MLs incrementally, since the 1990's. Generally, this overclear has resulted in < 1ha of additional disturbance per feature.

The resolution of the existing authorising figures in the EA is poor, and it is difficult to determine the exact boundaries of authorised disturbance areas compared to unauthorised disturbance.

Osborne roads and tracks account for the majority of additional disturbance (131.41 ha). This disturbance occurred incrementally across the entire Project MLs. The information available does not provide a justification for this disturbance, other than a lack of high-quality spatial data at the time. Advancements in imagery and accessibility have significant improved Chinova's ability to monitor disturbance across its large Project area.

A comparison of the authorised disturbance and on ground disturbance is provided in Table 5.

Table 5. Current and Proposed Authorised disturbance

Mine Domain	Mine Feature Name	Current Maximum Authorised Disturbance (ha)	Proposed Authorised Disturbance (ha)	Area Increase (ha)
Waste Rock Dump (WRD) and Ore Stockpiles	Osborne WRD	15.27	15.27	0
	Osborne West WRD	13.71	13.71	0
	Lucky Luke WRD	50.00	50	0
	Trekelano WRD	67.12	67.12	0
Run of Mine (ROM)	Osborne ROM	16.44	19.73	3.29

Mine Domain	Mine Feature Name	Current Maximum Authorised Disturbance (ha)	Proposed Authorised Disturbance (ha)	Area Increase (ha)
	Lucky Luke ROM	6.65	6.65	0
Processing Area	Osborne Processing Plant	6.23	8.61	2.38
Open Cut Pit	Trekelano Inheritance Pit	26.29	26.29	0
	Trekelano Pit	5.59	5.59	0
	Osborne Pit and Extension	26.01	27.65	1.64
	Lucky Luke Pit	10.09	10.09	0
Tailings Storage Facility (TSF)	TSF1	56.15	56.15	0
	TSF2	159.50	167.54	8.04
	TSF3	39.13	39.13	0
Dams and Diversions	TSF2 Reclaim Dam	In TSF2 footprint (21.65 ha)	In TSF2 footprint (27.00 ha)	5.35
	Environmental Dams 2 and 3	4.54	4.54	0
	Environmental Dam 1	10.26	10.26	0
	Environmental Dam 4	0.486	0.49	0.004
	Trekelano Sediment Dam	3.09	3.46	0.37
	Lucky Luke Sediment Dam	0.93	0.93	0
	Lucky Luke Storm Water Dam	1.00	1	0
	Lucky Luke De-water Dam	0.76	0.76	0
	TSF 3 Reclaim Dam	18.26	18.26	0
	TSF2 East Environmental Dam	-	Within Borrow Pits footprint (0.79 ha)	0.79
Topsoil Stockpiles	TSF1 Stockpile West	6.78	6.78	0
	TSF2 Stockpile West	0.91	0.95	0.04
	TSF1 WRD Stockpile	9.57	9.57	0
	TSF2 Stockpile E	6.12	0.6	-5.52
	TSF2 Stockpile NE	3.39	0	-3.39
	Osborne Pit Stockpile	5.34	5.34	0
	Lucky Luke Stockpile	14.42	14.42	0
	Magazine Topsoil Stockpile	-	0.74	0.74
	Processing Plant Topsoil Stockpile	-	0.91	0.91
	Trekelano Topsoil Stockpile	-	9.60	9.60

Mine Domain	Mine Feature Name	Current Maximum Authorised Disturbance (ha)	Proposed Authorised Disturbance (ha)	Area Increase (ha)
Ancillary Infrastructure	Airport Health Clinic and STP	0.025	0.025	0
	Administration Office	-	0.41	0.41
	Old Health Clinic and STP	0.025	0.046	0.021
	Contractor Workshop (open cut pit extension)	0.033	0.033	0
	Osborne Landfill/Laydown	8.72	10.59	1.87
	Bowser/Power Station	2.20	2.2	0
	Osborne Mine Workshop	3.10	3.72	0.62
	Kulthor Surface Infrastructure	24.54	24.54	0
	Osborne Village	9.75	9.75	0
	Osborne Airstrip	33.38	33.38	0
	New Osborne Core Shed	3.60	3.6	0
	Osborne Contractor Yard	2.84	3.3	0.46
	OSJ Shed	3.17	3.17	0
	Osborne Pit Workshop	3.20	3.2	0
	Trekelano Camp/Office	0.50	0.5	0
	Lucky Luke Landfill	0.61	0.61	0
	Lucky Luke Office/Workshop	0.89	0.89	0
	Gas and Borefields Pipeline	30.13	30.13	0
	Borrow Pits	-	10.87	10.87
	Magazine	-	0.46	0.46
Roads and Tracks	Osborne	16.20	131.41	115.21
	Lucky Luke	16.15	16.15	0
	Trekelano	1.61	1.86	0.25

Note: Borrow pits were established within the disturbance footprints for TSF2 Stockpile E and TSF2 Stockpile NE. The authorised maximum disturbance for TSF2 Stockpile E has been reduced to reflect on-ground disturbance. TSF2 Stockpile NE has been removed from Table A1 as it has not been constructed and the feature is not required.

2.3.2. Justification Proposed Amendment 2

The proposed amendment relates to new features, not previously defined in the EA. WTS undertook a review of historical imagery to identify when the additional features were constructed. Table 6 defines

the first date that the features can been observed from aerial imagery. Further detail on the construction and purpose of each feature is described below.

Table 6. Date of historic disturbance

Feature	Date disturbance first identified on aerial imagery
Processing Plant Topsoil Stockpile	4/05/2004
Trekelano Topsoil Stockpile	2/06/2006
Borrow pits to the north of TSF 2	17/08/2010
TSF2 East Environmental Dam	17/08/2010
Magazine	6/06/2013
Magazine Topsoil Stockpile	6/06/2013
Borrow Pit for TSF2 Dam (East)	11/03/2019

The specific date for the establishment of the administration offices is not available, however, the construction of the supporting and ancillary infrastructure at Osborne commenced in 1994. The magazine was established to the south of TSF2 in 2013. The administration office and magazine have not previously been authorised under the EA.

Topsoil stockpiles have previously been authorised under the EA; however, the magazine, processing plant, and Trekelano stockpiles have not been included.

Borrow pits were utilised to facilitate the construction of TSF2's capping system in 2016; however, were not previously authorised under the EA.

The TSF2 East Environmental Dam is located within the authorised disturbance footprint for the TSF 2 Stockpile NE and captures runoff from a 36.26 ha catchment located within the north-eastern extent of the now capped TSF2. The TSF2 East Environmental Dam has a maximum capacity of 61.6 ML and prevents runoff from the now capped TSF2 releasing into the receiving environments of No Name Creek and Little Sandy Creek to the north (Chinova, 2025). SLR prepared a design for the TSF2 East Environmental Dam in 2015, which has been attached within Appendix D.

The catchment which TSF2 East Environmental Dam services is illustrated within Figure 2.

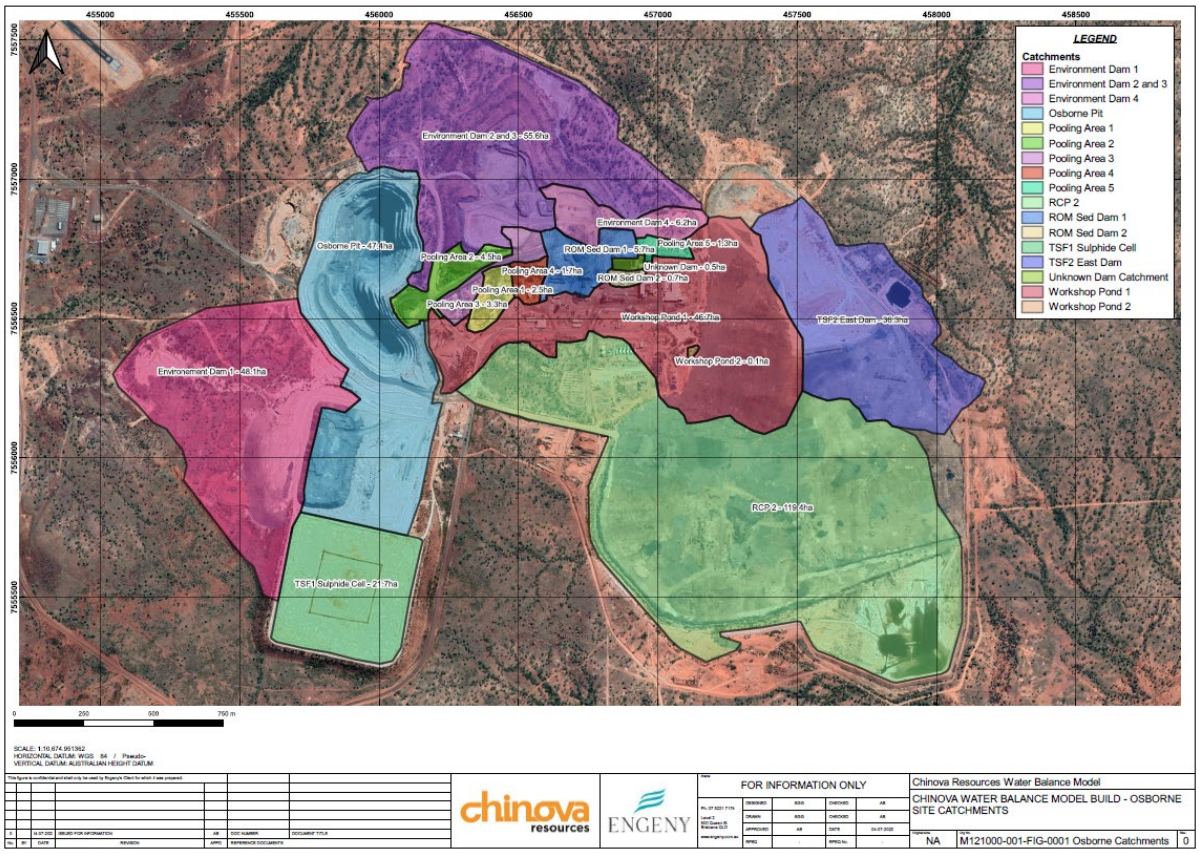


Figure 2. Osborne Mine Catchment Areas (Chinova, 2025)

2.3.3. Justification Proposed Amendment 3

This amendment seeks to authorise the disposal of water and dam liners within the Osborne pit. The pit is currently authorised for the storage of multiple waste streams, including tailings, mineralised waste, and demolition waste during operations and rehabilitation. Tailings have additionally been deposited within the Osborne underground workings surrounding and beneath the pit.

Technical studies have concluded that potential impacts to groundwater from the storage of waste within the pit are unlikely as the pit walls are impermeable and groundwater within the adjacent geology is limited and highly compartmentalised (SLR, 2022a). It is not expected that there will be any additional impacts resulting from the disposal of water and dam liners to the open pit, provided the infill and water levels do not intersect the Mesozoic-Proterozoic contact between relative level (RL) 1245 m and RL 1250 m (SLR, 2021b). The Mesozoic-Proterozoic contact between RL 1245 m and 1250 m is the hydrostratigraphic unit with the highest potential permeability (AGE, 2023a). The hydrogeology of the Osborne pit has been illustrated within Figure 3.

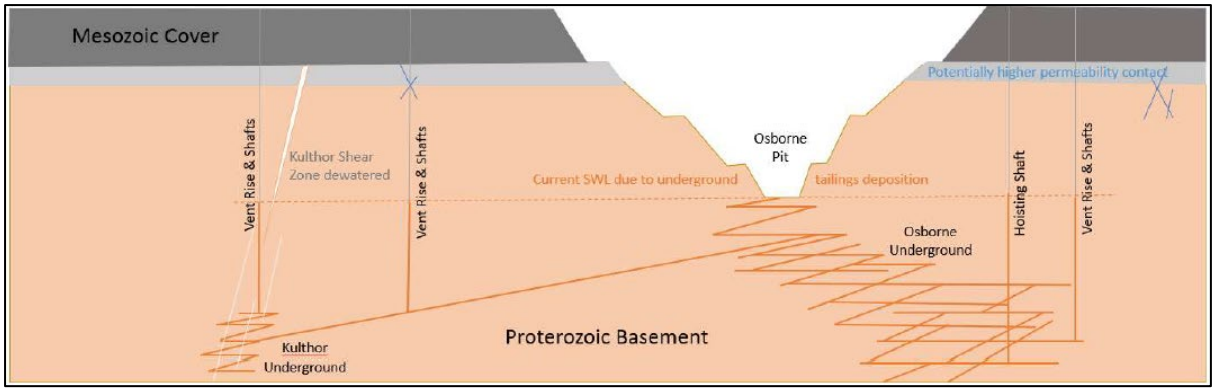


Figure 3. Osborne Pit and Underground Workings Hydrology (SLR, 2021b)

Disposal of Water within the Osborne Pit

Following cessation of operations, the Process Water Pond, Environment Dams 2/3 and 4, Kulthor Turkey's Nest, TSF2 Reclaim Dam, and Workshop Ponds will be rehabilitated. To reduce the timeframe and cost associated with evaporation prior to rehabilitation, Chinova proposes to dispose of any residual water within the Osborne Pit. Chinova developed a GoldSim probabilistic water balance model for Osborne to estimate the volume of water requiring disposal on cessation of operations. The total maximum volume of residual water requiring disposal within the pit is 84.6 ML.

Void hydrology modelling by AGE indicates that, after backfilling, the pit has a remaining capacity of 282,000 m³ (282 ML) before reaching RL 1245 m (AGE, 2023a), the intersection of the Mesozoic-Proterozoic formation. The water level within the pit is not to exceed RL 1,245 m to minimise interaction with groundwater associated with the Mesozoic-Proterozoic contact (SLR, 2022b). Disposal of 84.6 ML of water will not cause the pit water level to intersect the Mesozoic–Proterozoic contact at this elevation.

AGE further concluded that, under all but the most extreme rainfall events (1% AEP), the pit will maintain a negative water balance. Under the 1% AEP climate conditions, the pit water budget is positive 51,210 m^3 per year, indicating a shallow ephemeral lake will form. Theoretically this pit can be considered a sink; however, there is no groundwater connectivity and no actual water table adjacent the pit. The remaining capacity below RL 1245 m following a year of 1% AEP climate conditions will be 230,790 m^3 (AGE, 2023a).

Under the median (50th percentile) climate conditions, the pit water budget is negative 197,000 m^3 per year, indicating no long-term pit lake formation (AGE, 2023a). At this rate, the 84.6 ML of water disposed of within the pit is expected to evaporate within approximately 5.2 months.

Water quality for the Environment Dams 2/3 and 4, Kulthor Turkey's Nest, and TSF2 Reclaim Dam have been detailed within Section 5.2.4. Water quality has not been analysed for the Process Water Pond or Workshop Ponds. The deposited PAF material and mineralized waste already deposited within the pit means it is unlikely that the disposal of water from the water storages would reduce water quality within the pit.

Disposal of Dam Liners within the Osborne Pit

The Process Pond (0.3 ha) and Kulthor Turkey's Nest (0.1 ha) are currently lined with a high-density polyethylene (HDPE) liner to minimise seepage to groundwater. On closure, the structures will be rehabilitated to achieve a post mining land use of low-intensity agriculture. This requires removal and appropriate disposal of the liner.

Dam liners are not currently authorised for disposal within the pit; however, this method represents the most efficient option for managing this waste during site rehabilitation. A total volume of approximately 6 m^3 of dam liners is proposed for disposal within the pit.

This amendment will allow for the storage and disposal of potentially contaminated waters and dam liners in a safe and non-polluting manner, within a structure already authorised for the storage of potentially contaminated material.

2.4. Alternatives to the Amendments

Authorisation of Overclear and Existing Unauthorised Features

The only lawful alternative to the proposed amendment is to rehabilitate any additional disturbance above what is authorised within Table A1. As the discrepancies are generally < 1 ha per feature and spread across the entire Project, this is not practical. Rehabilitation of such small areas would be costly and difficult to execute whilst also providing no beneficial environmental outcome.

Rehabilitation of the borrow pits and topsoil stockpiles will prevent Chinova from accessing the remaining borrow material available within these sources for closure rehabilitation works (i.e., establishment of landforms). This would require additional impacts to land through the establishment of alternative borrow pits.

Removal of the administration offices will significantly hinder Chinova's ability to conduct onsite operations. Similarly, the removal of the magazine would eliminate the ability to lawfully store explosives onsite. To maintain operational capability, the removal of these facilities would necessitate the construction and approval of alternative infrastructure elsewhere onsite.

The removal of TSF2 East Environmental Dam would hinder Chinova's ability to manage potentially contaminated runoff from TSF2. Without TSF2 East Environmental Dam, potentially contaminated runoff would continue into No Name Creek and Little Sandy Creek to the north-west of TSF2.

The most appropriate way for Chinova to meet its general environmental duty is to include the overclear for authorised features and existing unauthorised features within the Table A1 of the EA, alongside the continued implementation of existing controls.

Disposal of Water within the Osborne Pit

The alternative to disposal of residual water from the Process Water Pond, Environment Dam 2/3, Environment Dam 4, TSF2 Reclaim Dam, Kulthor Turkey's Nest, and Workshop Ponds within the Osborne pit is to evaporate the water within the structures themselves. Evaporation of water from these storages is estimated to take 11 months following the cessation of operations. The estimated evaporation time for these structures does not account for additional rainfall during the wet season. Assuming the dewatering process continues into the wet season, the dewatering process will be extended, further delaying the commencement of rehabilitation works. Additionally, the in-storage evaporation will increase the costs associated with the rehabilitation of these structures.

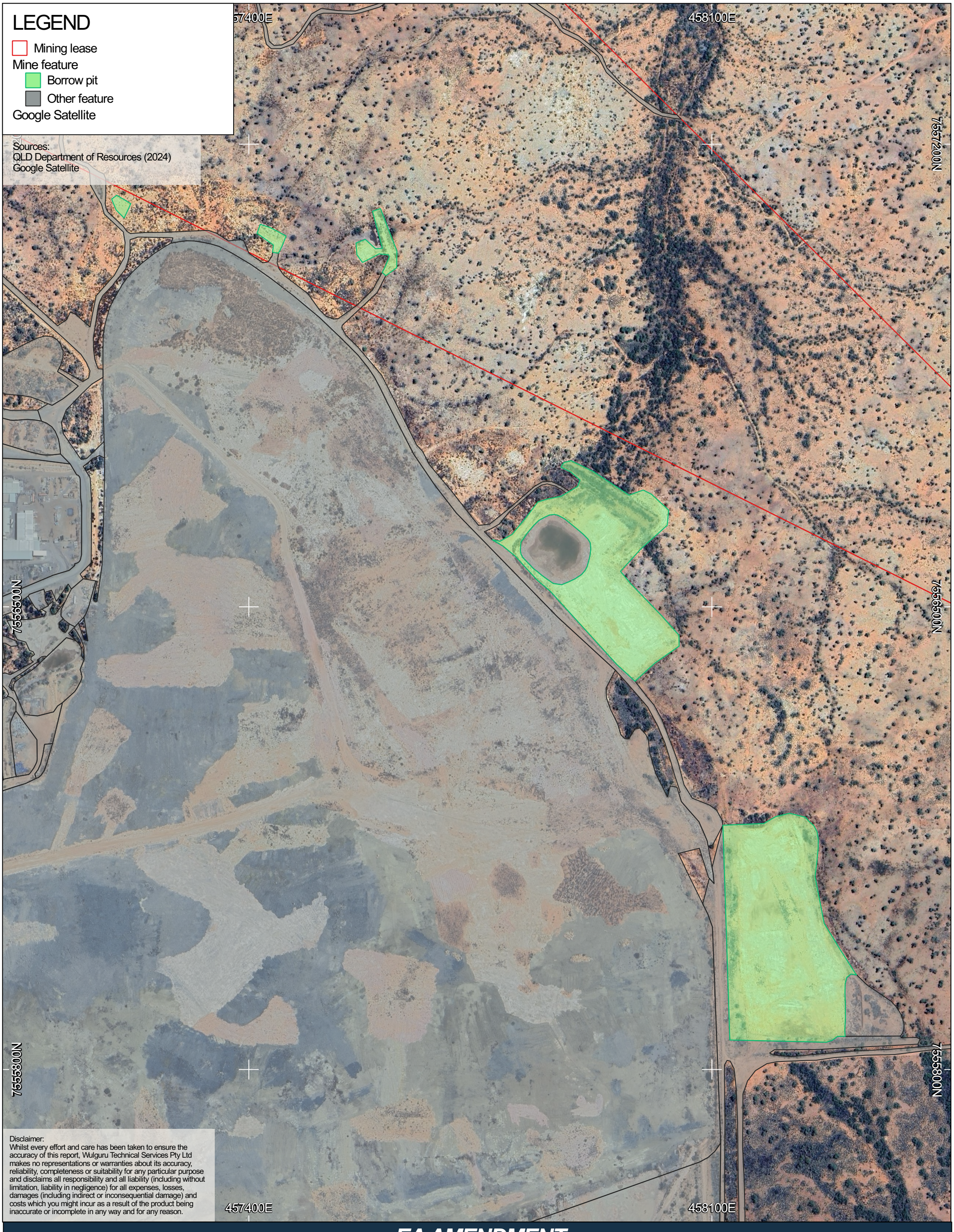
The authorised disposal of water from onsite water storages to the pit at the cessation of operations is the most cost-effective and efficient method for remnant water disposal.

Disposal of Dam Liners within the Osborne Pit

The alternative to disposing of dam liners within the Osborne Pit is offsite disposal. The closest disposal facility is located in Mount Isa (195 km to the north-west); however, this option would incur additional

costs, including transportation and disposal fees. Transporting the liners to Mount Isa would also result in the generation of additional Scope 3 greenhouse gas emissions.

In contrast, disposal of the dam liners within the Osborne pit is the most cost-effective and operationally efficient solution.



EA AMENDMENT

FIGURE 4. BORROW PITS

100 0 100 200 m

CRS: GDA2020 / MGA zone 54
Scale: 1:5,000 @A3

Date: 18 June 2025
Author: J. McLachlan
Version: 0.02

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Project Number: 2025.03007

Client: Chinova Resources Osborne Pty Ltd

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LEGEND

- Mining lease
- Mine features
- TSF2 East Environmental Dam

Sources:
Queensland Department of Resources
Google

457680E
457970E
7556836N
7556546N
7556256N

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EA AMENDMENT

FIGURE 5. TSF2 EAST ENVIRONMENTAL DAM

80 0 80 160 m

CRS: GDA2020 / MGA zone 54
Scale: 1:2,900 @A3

Date: 13 June 2025
Author: H. Robb
Version: 0.02

Project Number: 2025.03007
Client: Chinova Resources Osborne Pty Ltd

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EA AMENDMENT

FIGURE 6. ADMINISTRATION BUILDING

80 0 80 160 m

CRS: GDA2020 / MGA zone 54
Scale: 1:2,900 @A3

Date: 13 June 2025
Author: H. Robb
Version: 0.02

WULGURU TECHNICAL SERVICES

Project Number: 2025.03007

Client: Chinova Resources Osborne Pty Ltd

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LEGEND

- Mining lease
- Mine features
- Magazine

Sources:
Queensland Department of Resources
Google

457085E
457375E
7555516N
7555226N
7554936N

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EA AMENDMENT

FIGURE 7. MAGAZINE

80 0 80 160 m

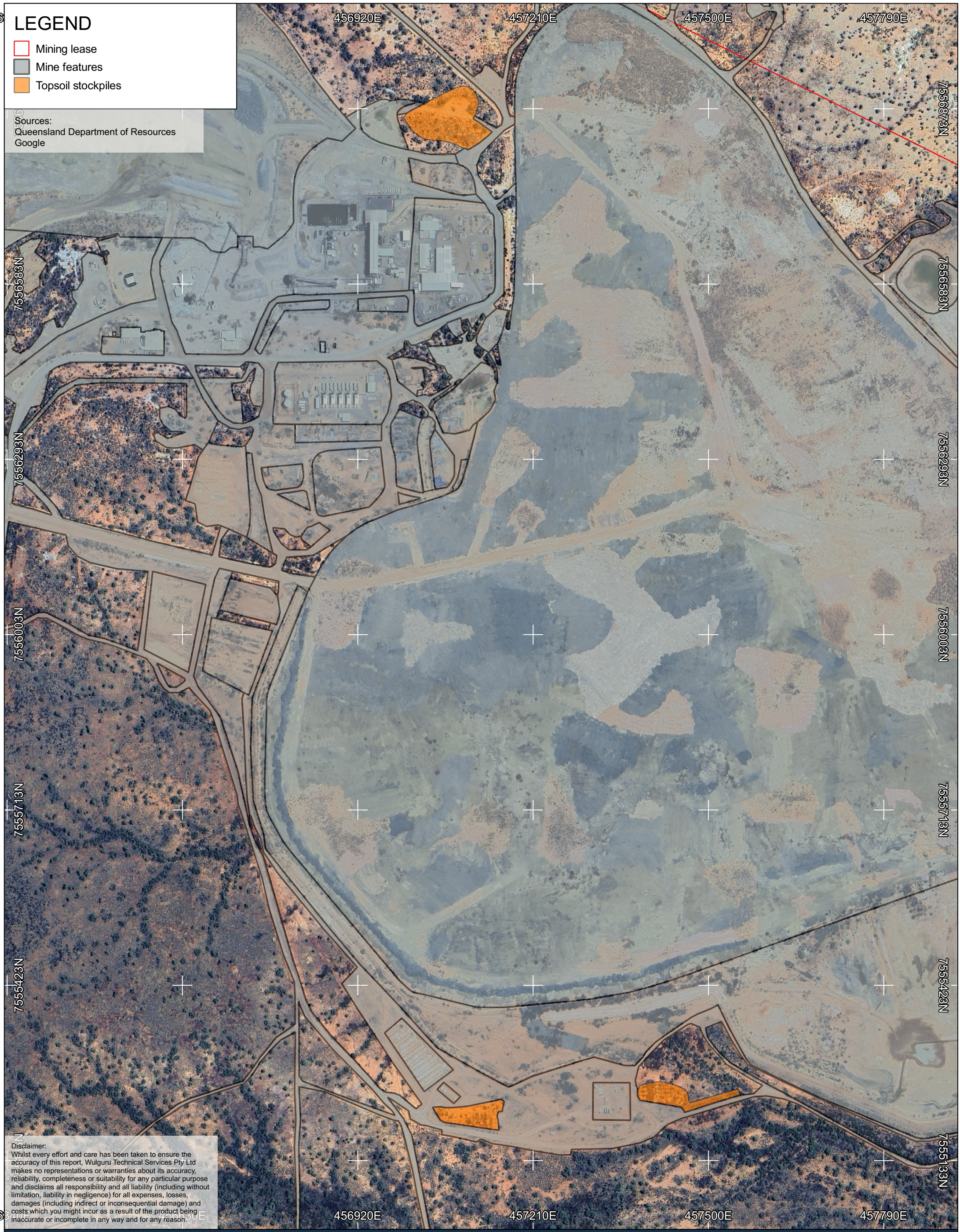
CRS: GDA2020 / MGA zone 54
Scale: 1:2,900 @A3

Date: 13 June 2025
Author: H. Robb
Version: 0.02

Project Number: 2025.03007
Client: Chinova Resources Osborne Pty Ltd

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EA AMENDMENT

FIGURE 8. OSBORNE TOPSOIL STOCKPILES

150 0 150 300 m

CRS: GDA2020 / MGA zone 54
Scale: 1:5,500 @A3

Date: 19 June 2025
Author: H. Robb
Version: 0.03

WULGURU TECHNICAL SERVICES

Project Number: 2025.03007
Client: Chinova Resources Osborne Pty Ltd

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