



22 January 2025

Stephen O'Donoghue Director Resource Assessments Department of Planning, Housing and Infrastructure Via the NSW Planning Portal

Dear Stephen,

RE: HILLGROVE MINE – DEVELOPMENT CONSENT DA 98/35 MODIFICATION (MODIFICATION 5)

The purpose of this Scoping Letter is to provide an overview of a proposed modification to Development Consent DA 98/35 for the extension of mine life, an increased processing rate and additional tailings capacity to allow for the continued operations of the Hillgrove Mine (the Modification). This letter also seeks confirmation of the approval pathway, assessment scope and consultation requirements for the Modification.

1. Background

The Hillgrove Mine is an underground gold and antimony mine, located approximately 30 km east of Armidale in the Armidale Regional Council (ARC) local government area (LGA) (Figure 1.1). The Hillgrove Mine is operated by Hillgrove Mine Pty Ltd, a wholly owned subsidiary of Larvotto Resources Limited (Larvotto).

Mining has been conducted in this part of the Armidale Regional LGA for many years, first commencing in approximately 1887. The mine has been historically constructed and operated under a mosaic of development consents granted under the *Environmental Planning and Assessment Act 1979* (EP&A Act). Hillgrove Mine currently relies on three development consents granted under the EP&A Act:

- DA 98/35 granted by the Minister for Urban Affairs and Planning on 18 November 1998 under Part 4 of the EP&A Act, which has subsequently been modified on four separate occasions, the most recent of which occurred under the now repealed section 75W of the EP&A Act on 13 April 2018 with the approval of Modification 4
- DA 19/2000 granted by the council that is now known as ARC on 29 March 2001 under Part 4 of the EP&A Act for the Mine's Metals Processing Facility (MPF), which has subsequently been modified on three separate occasions, the most recent of which occurred on 9 November 2020
- DA 95/26 granted by the council that is now known as ARC on 8 March 2004 under Part 4 of the EP&A Act permitting the continued extraction of mineral leases pre-dating the commencement of the EP&A Act

Development Consent DA 98/35 is the state consent and authorised Larvotto to carry out mining operations until 31 December 2023, and includes the following components of the Hillgrove Mine:

- Bakers Creek Mine (accessed by the Lower Cooney Tunnel [LCT])
- Brackins Spur Mine
- Eleanora Mine (lower levels)
- Pressure Oxidation Plant (POX Plant) (no longer in use)
- haul road to Bakers Creek Mine
- Brackins Spur Haul Road extension
- Tailings Storage Facility 2 (TSF2)
- retreatment of Tailings Storage Facility 1 (TSF1) tailings
- processing up to 250,000 tonnes per annum (tpa) of ore from other existing consented mining areas in the existing Antimony Concentrate Plant and the POX Plant and deposition in TSF2

The general arrangement of the approved Hillgrove Mine, including DA 98/35 and all other development consents, is shown in Figure 1.2.

1.1. Elements of the project incorporated from council consents

During discussions held between the Department of Planning, Housing and Infrastructure (DPHI) and ARC on the approval pathway for the Project, it was confirmed that, due to the overlap between the consents and operation of the Hillgrove Mine, elements of the Hillgrove Mine also approved by ARC, could be consolidated and incorporated into the proposed modification of DA 98/35.

A summary of elements of the project incorporated from council consents and justification is provided in Table 1.1. Further consideration is provided in Tables A.2 and A.3 of Appendix A.

ARC Consent	Project element	Justification
DA 19/2000	Processing and continued use of the infrastructure at the MPF.	Infrastructure associated with the MPF was partially approved by DA 98/35. Processing up to 250,000 tpa of ore was approved by DA 98/35.
DA 95/26	Underground mining associated with the Garibaldi Mine, within Mining Lease (ML) 391 and ML 649.	The Environmental Impact Statement (EIS) supporting DA 98/35 partially included mining at the Garibaldi/Eleanora Mine.

Table 1.1 Summary of elements of the project incorporated from council consents and justification.



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2. Proposed Modification

The Modification proposes an extension of mine life, an increased processing rate and additional tailings capacity to allow for the continued operations of the Hillgrove Mine. The Modification includes (Figure 2.1):

- Mine operations, including:
 - increase in the annual processing rate of the Mine from 250,000 tpa to 500,000 tpa to recover previously approved resources
 - extend the life of mine to 31 December 2030 to allow for continued mining operations while a separate State Significant Development (SSD) application is sought to consolidate all existing and future mining activities at Hillgrove Mine from an EP&A Act perspective into a single development consent
 - increase daily construction hours and ore haulage hours (noting, no activities will occur during the night-time), and increase construction hours to seven days per week
- Tailings processing and storage, including:
 - raise TSF2 to the approved height of 1,005 mAHD (subject to design)
 - construction and operation of a tailings dewatering filter plant located at the existing MPF
 - placement of dewatered tailings at a dry tailings landform (DTL) located to the west of TSF2 (referred to as TSF2 West)
 - construct a noise and dust abatement bund, integrated into the wall of the TSF2 West to screen operations from Hillgrove village
 - buttressing TSF1 to increase structural stability as a first step towards full closure of the facility.
 Future retreatment of tailings and closure would not be undertaken until further tailings storage capacity is built (subject to SSD application)
- Modifications to other mine infrastructure, including:
 - re-instatement of the Garibaldi Open Pit over the previous pit (location is currently under rehabilitation)
 - place waste rock from the Garibaldi Open Pit to construct features which would otherwise require new borrow pits to source material, including earthworks to support the tailings dewatering filter plant raising TSF2 within currently approved limits, reconstruction of TSF1 toe buttress, reconstruction of Eleanora Dam buttress, construction of the noise and dust abatement bund and construction of TSF2 West
 - construction of a vent shaft to the Garibaldi underground works, adjacent to the re-instated Garibaldi
 Open Pit, and two portals within the pit
 - extension of pad and installation of water management structures at Brackins Spur Mine entrance to accommodate waste rock stockpiles
 - construction of a drainage structure alongside ES1 and ES2 dams to improve water management
 - construction of a new road from the MPF to aid construction of the proposed noise and dust abatement bund
 - construction of a new 11 kV overhead powerline from the existing Hillgrove Mine to the Brackins Spur Mine
 - construction of a water pipeline from the existing Hillgrove Mine to the Brackins Spur Mine following the existing Garibaldi Spur Road where practicable
 - widening of the Eleanora Dam embankment to permit two-way traffic movements between the MPF, Garibaldi Open Pit and the DTL

Table A.1 of Appendix A provides a comparison of the currently approved and modified Hillgrove Mine.



3. Strategic context

The Hillgrove Mine has a long history of mining operations, having been developed for mineral resources by several operators since 1877. Operations under DA 98/35 (originally DA S98/00802) commenced in 1998. Following Modification 4, mining under this consent was approved until 31 December 2023.

The Hillgrove Mine ceased its most recent operations in November 2022 and is currently in care and maintenance, employing six full-time equivalents.

Larvotto's objective for the Hillgrove Mine is to carry out exploration and studies, then ultimately develop the existing operations to become a sustainable producing asset. When operational, the Hillgrove Mine produces a high-quality gold and antimony product which has a high demand in domestic and international markets including the United States and Europe.

Correspondence provided to DPHI on 14 August 2024 described a staged approach to seek approval to expand and continue operations at the Hillgrove Mine. In summary, the staged approach involves:

- short-term strategy: Stage 1 modification to existing consents/approvals, including:
 - Stage 1A Development Consent DA 98/35 (i.e. the Modification discussed in this Scoping Letter)
 - Stage 1B Development Consent DA 19/2000
- long-term strategy: Stage 2 Development consent for SSD application for Clarks Gully Mine, new TSF and consolidation of all other relevant existing consents.

3.1. Project justification

The Modification (i.e. Stage 1A) is the logical and necessary first step for the continuation of operations at the Hillgrove Mine. The Modification would provide the following key benefits:

- allow for the operations at the Hillgrove Mine to recommence and continue while an SSD application is prepared and assessed (i.e. Stage 2)
- recovery of an additional 2,000 t of ore
- an incremental contribution to the local, regional and state economies
- payment of royalties to the State Government of NSW

3.2. Project alternatives

Approximately 130 kilotonnes (kt) of ore has been mined from the 1,427 kt of approved resources under Development Consent DA 98/35.

Larvotto also considered the alternative of not proceeding, however this option is not proposed by Larvotto. Not proceeding would not address the structural improvements to TSF1.

Not progressing would also result in in a significant lost economic benefit associated with the potential recommencement of the Hillgrove Mine, including reduced employment opportunities, royalties and flow on employment and economic benefit.

Further details regarding the alternatives considered would be provided in the Modification Report.

4. Statutory context

4.1. NSW approvals process

The Modification to DA 98/35 would be sought under section 4.55(2) of the EP&A Act, on the basis that the proposed modification would be "substantially the same" as the approved Hillgrove Mine (as it was last modified under section 75W).

In correspondence dated 14 August 2024, Larvotto requested confirmation from DPHI on the approach that the proposed modification to DA 98/35 would be "substantially the same development". Included in Larvotto's request was a change of impact assessment which demonstrated that the "substantially the same development" test would be satisfied.

DPHI responded to Larvotto's request on 23 September 2024 and confirmed Larvotto's approach.

Table A.1 of Appendix A provides a comparison of the currently approved and modified Hillgrove Mine as a result of the Modification.

4.2. Site verification certificate

Pursuant to clause 50A of the *Environmental Planning and Assessment Regulation 2021*, any development application which relates to mining or petroleum development must include either a Gateway Certificate, where the development occurs on land which meets the requirements of Biophysical Strategic Agricultural Land (BSAL), or a Site Verification Certificate (SVC) on land that is not BSAL.

The additional land required for the TSF2 West is not mapped as BSAL. An assessment will be undertaken in accordance with the *Interim Protocol for site verification and mapping of biophysical strategic land* (Office of Environment and Heritage, 2013) to verify the mapping and determine whether a Gateway Certificate or SVC will apply to this Modification.

4.3. Other NSW approvals

Other NSW approvals that are likely to be required for the Modification include (but are not limited to):

- a ML under the Mining Act 1992 to facilitate the expansion of TSF2
- an amendment to the existing Environment Protection Licence (EPL) for the Hillgrove Mine (EPL 921) under the *Protection of the Environment Operations Act 1979*
- relevant licencing and approvals under the Water Management Act 2000
- offset unavoidable residual impacts on biodiversity consistent with the *Biodiversity Conservation Act* 2016
- an Aboriginal Heritage Impact Permit under section 90 of the National Parks and Wildlife Act 1974
- approval under Part 4, or an excavation permit under section 139 of the Heritage Act 1977
- Dams Safety Act 2015

4.4. Commonwealth approval process

The potential impacts of the Modification on Matters of National Environmental Significance will be assessed in the environmental assessments prepared for the Modification report.

Larvotto may separately refer the Modification to the Commonwealth Minister to confirm if the proposed activities are a "Controlled Action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Should the Modification be determined to be a "Controlled Action", Larvotto intends to use the bilateral assessment pathway available between the NSW and Commonwealth governments.

5. Proposed scope of the Modification Report

Larvotto will prepare a Modification Report to assess the potential environmental impacts of the Modification. The Modification Report will be prepared in accordance with the *State significant development guidelines – preparing a modification report* (Modification Guidelines) (Department of Planning and Environment [DPE], 2022).

It is anticipated that the Modification Report would be lodged in early 2025.

A summary of the potential environmental risk and assessment approach for the Modification is provided in Table 5.1. Consideration and assessment (where required) of potential impacts to other environmental aspects (e.g. bushfire, hazards, economic, contamination waste) will be included in the main text of the Modification Report. The modification report will also detail engineering details and the relevant safety requirements for new and modified tailings storage and the buttressing of TSF1

Table 5.1	Potential environmental	risk and	assessment approac	ch for the Modification
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Environmental aspect	Existing environment and potential environmental risks	Assessment approach
Aboriginal cultural heritage	A search of the Aboriginal Heritage Information Management System (AHIMS) was completed for the Modification. No AHMIS sites are located within the Modification Area, with the closest site located approximately 1.2 km away. Further, due to the steep terrain and extensive disturbance associated with historical mining at the Hillgrove Mine, the Aboriginal archaeological potential for the Hillgrove Mine and surrounds is considered low.	An Archaeological Technical Report would be prepared for the Modification given the small disturbance areas and level of existing disturbance at the Hillgrove Mine. The Archaeological Technical Report will include consultation with relevant Aboriginal stakeholders. If Aboriginal cultural values (either Aboriginal objects or intangible cultural values) are recorded and it is likely these objects/values will be harmed, then further Aboriginal community consultation may be required as per the Aboriginal cultural heritage consultation requirements for proponents (ACHCRs) and an Aboriginal Cultural Heritage Assessment Report (ACHAR) would be required for that modification.
Agriculture and soils	 The components of the Modification located outside of the existing disturbance area are in land zoned as: RU1 – Primary Production RU5 – Village Regional land and soil capability (LSC) mapping has identified Class 4, Class 7 and Class 8 land and that no BSAL occurs within the Modification Area. There are no records of contaminated land within the Modification Area. 	 The Modification would include a Soils and Agriculture Assessment, consisting of the following items: soil surveys and land assessment a LSC Assessment an Agricultural Impact Assessment in accordance with the Strategic Agricultural Land Use Policy: Guideline for Agricultural Impact Statements (DP&I, 2012). Additionally, an assessment would be undertaken to verify BSAL and an SVC lodged.
Air quality and greenhouse gas	The nearest receiver is located approximately 200 m from the entrance to the Hillgrove Mine and approximately 500 m from the processing area. Existing monitoring and management measures are implemented at the Hillgrove Mine to mitigate dust emissions.	The Modification would include a quantitative Air Quality Impact Assessment to assess the potential air quality impacts associated with the construction and operation of the development. Additionally, a Greenhouse Gas Assessment and Greenhouse Mitigation Plan would be prepared in accordance with the Draft Greenhouse Gas Assessment Guide for Large Emitters (NSW Environment Protection Authority, 2024), or the final guidelines, where these are published

Environmental aspect	Existing environment and potential environmental risks	Assessment approach
Human health risk	The modification is unlikely to cause risks to human health risks in addition to those present from the existing operation and the historical mining which has occurred. As noted above, the nearest receiver is located approximately 200 m from the entrance to the Hillgrove Mine and approximately 500 m from the processing area. Existing monitoring and management measures are implemented at the Hillgrove Mine to mitigate dust emissions.	The modification would include a Human Health Risk Assessment, completed in general accordance with Environmental Health Risk Assessment – Guidelines for assessing human health risk from environmental hazards (enHealth, 2012).
Social	The Modification is the first step to allow for the continuation of operations at the Hillgrove Mine. The village of Hillgrove is located immediately to the north of the Hillgrove Mine and has a population of approximately 174 (Australian Bureau of Statistics, 2021).	The Modification would include a Social Impact Assessment (SIA) to assess the potential social impacts associated with development. The SIA will be prepared in accordance with the <i>Social Impact</i> <i>Assessment Guidelines for State Significant</i> <i>Projects</i> ('SIA Guidelines') (DPE, 2023) (standard level of assessment) and the Modification Guidelines.
Traffic and transport	 It is anticipated that the Modification would potentially impact the road network via: increase to light and heavy vehicle movements during construction changes to ore haulage movements Additionally, the Modification Area encompasses Smith Street located south of the village of Hillgrove. 	A Traffic Impact Assessment would be prepared to assess the potential traffic impacts on the road network for the type and volume of traffic generated by the Modification. Additionally, a Road Safety Assessment Report would be prepared for Stockton Road to identify safety issues and potential mitigation activities.
Biodiversity	 The majority of works required for the Modification are located within the existing disturbance areas at the Hillgrove Mine. Disturbance required outside of these areas (e.g. TSF2 West, and the noise and dust abatement bund) are located adjacent to the existing disturbance areas. Preliminary biodiversity surveys were completed at the Hillgrove Mine in May 2024 to inform vegetation mapping for the development (Somerville Ecology, 2024). Two Plant Community Types (PCT) were mapped in a range of condition states: PCT 3359: New England Hills Stringybark – Box Woodland (associated with state and commonwealth listed Threatened Ecological Community (TEC) White Box – Yellow Box – Blakely's Red Gum Grassy Woodland) PCT 3461: Macleay Gorges Stringybark-Red Gum Grassy Forest. Preliminary searches indicate a number of threatened flora and fauna species have the potential to occur based on the habitat present. 	The Modification would include a Biodiversity Development Assessment Report (BDAR) to further assess impacts to biodiversity and, if required, any biodiversity offset obligation. Survey efforts as part of the BDAR would confirm presence of threatened species.

Environmental aspect	Existing environment and potential environmental risks	Assessment approach
Historical heritage	 The Armidale Regional Local Environmental Plan 2012 lists five heritage items in the vicinity of the Modification, these include: Eleanora Mine—chimney Baker's Creek Mine—chimney Baker's Creek Mine—surface buildings Garibaldi Mine—chimney Baker's Creek Mine—winding engine house Existing management measures are in place at the Hillgrove Mine to prevent potential impacts to these items. 	The Modification would include a Historic Heritage Assessment to assess the potential impacts to items of historic heritage.
Noise and vibration	A Preliminary Noise Assessment was completed for the Modification (Muller Acoustic Consulting, 2024). The preliminary assessment concluded that, with the implementation of reasonable and feasible mitigation measures, particularly applied to mine haulage operations, it is anticipated that operational noise levels could achieve the relevant criteria at all receiver locations.	The Modification would include a Noise and Vibration Assessment to quantitatively assess the potential noise, and vibration impacts of the development.
Groundwater	Existing groundwater monitoring (including volume and water quality) is undertaken at the Hillgrove Mine. No groundwater dependant ecosystems are located in proximity to the Modification.	The Modification would include a semi-quantitative to qualitative Groundwater Assessment to assess the potential groundwater impacts associated with the development. The Groundwater Assessment would include the preparation of a conceptual groundwater model for the Modification.
Surface Water	 The Modification is located upstream of several named watercourses, including: Bakers Creek, a Strahler order 4 watercourse Four Mile Creek, a Strahler order 4 watercourse Swamp Creek, a Strahler order 3 watercourse Additionally, the Modification crosses various unnamed watercourses of Strahler orders 1 and 2. Existing surface water monitoring and management measures are implemented at the Hillgrove Mine to manage potential surface water impacts to the surrounding watercourses. 	 The Modification would include a detailed Surface Water Assessment, including: review of the Site Water Balance and forecast results assessment of the potential impacts on the quantity and quality of water resources, including cumulative effects assessment of the potential impacts to other water uses assessment of the potential impacts on geomorphic condition, and erosion and drainage patterns assessment of the potential impacts to water resources as a result of the modifications to the TSF the impact to flooding associated the Modification

6. Stakeholder engagement proposed

Larvotto will prepare a community and stakeholder engagement program for the Modification. Key objectives of this program will be to proactively:

- provide regular information and updates about the Modification and any impacts
- seek feedback about the Modification, including identifying perceived and real community and stakeholder concerns or involve the community and stakeholders in developing appropriate mitigation measures
- provide centralised contact channels for the community and stakeholders to make enquiries or complaints
- respond to enquiries and complaints within agreed timeframes
- maintain accurate records of interactions with stakeholders to track and monitor issues and sentiment
- provide feedback to the community about how their input informed the Modification and/or mitigation measures

Consultation with government agencies and stakeholders during preparation of the Modification is likely to include:

- local community and affected landowners
- special interest groups (e.g. Save Our Macleay River)
- ARC
- Aboriginal groups
- internal stakeholders
- Department of Primary Industries and Regional Development
- Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- DPHI and relevant divisions, including:
 - Crown Lands NSW
 - DPHI Hazards Branch
- Water NSW
- Resources Regulator
- Dams Safety NSW
- NSW Environment Protection Authority
- Heritage NSW and Heritage Council
- Transport for NSW
- Crown Lands NSW
- Registered Aboriginal Parties

The issues raised and outcomes of the community and stakeholder engagement program would be considered in the preparation of the Modification Report, with consultation undertaken summarised accordingly.

7. Request

Larvotto is seeking confirmation of the following from DPHI:

- The Modification can be lodged and considered by DPHI under section 4.55(2) of the EP&A Act
- The above-mentioned proposed scope of the Modification Report is sufficient

We would be happy to meet with DPHI further in regard to the Modification.

Yours faithfully.

Mark Vile Managing Director

Appendix A Summary of approved and modified Hillgrove Mine

Element	Approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine incorporating the Modification
Construction		
Construction hours	 Any construction activity resulting in noise emission levels greater than 5 dB(A) above background, or resulting in tonal noise or impact noise likely to cause annoyance at any residence is limited to the following hours: Monday to Friday: 7:00am – 6:00pm Saturday: 7:00am – 1:00pm Sunday and Public Holidays: No work 	Monday to Sunday: 6.30am – 7:30pm
Operation		
Mining operations	Mining operations and processing of ore to produce antimony and gold concentrates permitted until 31 December 2023.	Mining operations and processing of ore to produce antimony and gold concentrates permitted until 31 December 2030.
Mining methods, areas and access	 Underground mining using conventional stoping methods. The mine plan supporting DA98/35 was based on three major lodes plus a few small additional existing resources which are not clearly described in the EIS, but based on Section 3.1 are assumed to be Golden Gate and Smiths reef: New Brackins Spur Mine: Access by a single vertical shaft with two declines (N-S) driven along the ore body with a series of adits (E-W) to gain access to upper levels of ore body. Bakers Creek Mine (LCT) rehabilitation: Access via the existing LCT Rationalisation of Eleanora Mine (lower levels 9 – 11): Access via an extension to the LCT (effective level 13) Existing mining operations: The 1998 EIS includes continued use of existing workings. Prior approval of DA 98/35, ore production was sourced from the Syndicate lode as well as Golden Gate and Smiths reefs. Garibaldi Open Pit: Pre-existing mining disturbance in this area for the shaft and pit (Figure 2.1) 	 Underground mining using conventional stoping methods. Brackins Spur: No change Bakers Creek (LCT) Mine: No change Eleanora-Garibaldi Mine: Access to underground mining areas would be via two portals in the Garibaldi Open Pit. Existing mining operations: The 1998 EIS includes continued use of existing workings. Prior approval of DA 98/35, ore production was sourced from the Syndicate lode as well as Golden Gate and Smiths reefs. Garibaldi Open Pit: Reinstatement of open pit with deeper floor and a larger disturbance area of 1.55 ha as a source of material to construct the TSF2 Raise, the noise and dust abatement bund, buttresses at Eleanora Dam and TSF1 toe, as well as the MPF bulk earthworks. Ore extraction would be incidental, secondary activity.
Ventilation	Brackins Spur: Decline serves as intake ventilation. Bakers Creek Mine (LCT): Via LCT. Eleanora-Garibaldi Mine: Brackins Spur Haul Road to provide additional access and ventilation to the Eleanora- Garibaldi Mine at a lower lovel (MILA 105, perm	Brackins Spur: Initial ventilation (until primary circuit established) via a secondary vent duct powered by 180 kW fans located at the Brackins Spur portal. Primary circuit established by construction of vertical vent shafts. Permanent ventilation by primary fans
	ML 1441). Existing mining operations: Surface rights to provide ventilation to existing and proposed operations in old workings (ML 972).	Installed, fully contained within underground workings at sufficient distance from portal entries to minimise noise emissions. Bakers Creek Mine (LCT): No change. Eleanora-Garibaldi Mine:

Table A.1 Summary of proposed changes to currently approved activities under DA 98/35

Element	Approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine incorporating the Modification
		Vertical ventilation shaft to be constructed next to the proposed Garibaldi Open Pit.
		Existing mining operations:
		No change.
Current extent	ML 1440, ML 1441, ML 1442 and Portions 2, 101, 130, 171, 380, 406, Parish Metz, County Sandon, Hillgrove via Armidale. Notes: A project disturbance area was not adequately described in the 1998 EIS. Location of TSF2 was amended in 2000, however its new location covering Portion 128 (now Lot 128 of DP658808) was not reflected in the amended development consent	ML 1440, ML 1441, ML 1442 and Portions 130, 171, 380, 406, Parish Metz, County Sandon, Hillgrove via Armidale, Lot 128 in DP658808, Lots 171, 194, 334 in DP755834, Lot 7300 in DP1139642, Lot 1 in DP1198385, and Sections 26, 27 and 33 in DP758519. A new Mining Lease will be required for the TSF2 Expansion.
Ore processing equipment	On-site processing utilising a pressure oxidation process (not currently in use).	No change to pressure oxidation process authorised under Development Consent DA 98/35.
		Introduction of tailings filtration (building construction to be consented through new ARC consent and operation to be assessed as part of DA 98/35).
Processing rate	250,000 tpa.	Up to 500,000 tpa of ore from:
		existing stockpiles
		Metz Mine (also DA 42/82)
		Eleanora/Garibaldi Mine
		Garibald Open Pit
		Note: EPL 921 would be varied to increase maximum processing rate under condition L7.1 to align with modified consent.
Tailings	TSF2	TSF2
management	TSF2 of eventual surface area of approximately 14 ha and to a height of 1,005 mAHD, accommodating up to 2.5 Mt. TSF2 not vet constructed to approved height	Capacity for an additional 1.8 Mt of ore treatment (1.4 million m ³ of tailings) is required to support extended mining activities. This will be achieved by:
	(1,005 mAHD). TSF1 Retreatment of TSF1 tailings (1 Mt) in the CIP	• TSF2 Raise: change in configuration of the dam to enable raising of the embankment to approved height (1,005 mAHD)
	plant (operational prior DA 98/35 consent) and deposited into TSF2.	 TSF2 West/Dry Tailings Landform (DTL): extending TSF2 westward, integrating with the proposed noise bund
		Tailings deposited to both facilities will be as a 'dry' filtered tailings product. Tailings filtration will occur at the processing plant with the dry tailings then hauled by trucks to the DTL and compacted.
		The proposed approach to tailings management will be guided by the biodiversity and noise assessments undertaken.
		<u>Years 1 - 2</u> Raising of TSF2 by 8.5 vertical metres to 1,005 mAHD allowing 670 kt capacity.
		TSF2 embankment raises will be constructed using waste rock from the nearby Garibaldi Open Pit.
		Year 2 onward
		Tailings deposited to the TSF2 West Extension expands the footprint of TSF2 to the west for the DTL.

Element	Approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine incorporating the Modification
		TSF1 Retreatment of TSF1 tailings is approved under DA 98/35 however retreatment activities and closure will not occur until there is additional tailings capacity (subject to separate SSD application). Retreatment and closure of TSF1 will require additional buttressing to the dam toe which is an activity included in this modification (refer waste rock management below).
Ore stockpile management	Bakers Creek flats and at entrance of LCT.	Rehabilitation of the Bakers Creek stockpile has commenced, with vegetation growth poor in some areas. The landform will be re- contoured using suitable waste rock from Metz underground to flatten slopes and improve rehabilitation performance Ore will be hauled to surface via underground tunnels, exiting a portal in the Garibaldi Open Pit and stockpiled in the MPF area.
Power supply	11 kV-415 V substations adjacent to each mining area.	A new 11 kV overhead powerline will be constructed across Bakers Creek Gorge from the existing Hillgrove Mine to the Brackins Spur Portal. The proposed route will involve placement of poles immediately adjacent an existing Garibaldi Spur Road, limiting disturbance from clearing to 0.02 ha.
Internal access	Eleanora-Garibaldi Mine and Bakers Creek (LCT) Mines: Ore transported to MPF via the approved Gorge Road. The 1998 EIS did not differentiate ore sources in the annual mining production rates and Mod 3 mining activities were limited to Metz Mine, however up to 70 ktpa is approved under Development Consent DA 95/26 which includes the Eleanora-Garibaldi Mine. Assessment of truck movements was not undertaken in previous approvals. Therefore, the below assumptions are based on the approved production rate and assumed waste volumes from Metz (Mine and waste dump) required to raise TSF2 and provide for rehabilitation works. Assuming haulage in 40 t trucks with a 36.1 t effective capacity, 2,500 truckloads per year (or average 7 loads/day) are generated. Brackins Spur: Ore extracted to surface stockpile on Bakers Creek flats and trucked to the MPF via the approved Brackins Spur Haul Road. Metz Mine: Ore from Metz is transported along the approved Sunlight Road, crossing Bakers Creek and connecting with the Gorge Road approved under Development Consent DA 98/35. Assuming 250 ktpa ore plus 50 ktpa waste is hauled by 40 t trucks (36.1 t effective capacity), Metz Mine can generate 8,310 truckloads per year, or an average of 23 loads/day up Gorge Road.	 Upgrades, as required, within existing disturbance boundary only. Continued mining activities would use 45 t trucks (effective capacity 42.3 t). Eleanora-Garibaldi Mine: Ore will exit underground workings via two access portals in the Garibaldi Open Pit. Trucks movements for peak and average production rates are: Peak rate of 19 loads/day Average rate of 14 loads/day Brackins Spur: Ore production is not proposed at Brackins Spur during the proposed modification period. However, access will be required via the Brackins Spur Haul Road to undertake waste development for access and drilling activities. Truck movements associated with this activity will be substantially less than those that would be required to haul 20 – 50 ktpa described in Mod 1. Metz Mine: Trucks movements for peak and average production rates are: Peak rate of 305 kt ore and 46 kt waste: average 23 loads/day Average rate of 282 kt ore and 33 kt waste: average 20 loads/day

Element	Approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine incorporating the Modification
		Road which connects to the Brackins Spur Haul Road. The proposed road follows the noise and dust abatement bund below the bund crest to mitigate noise and dust. The realigned haul road would connect the MPF to a new access point at Long Point Road which would be used a future by-pass route (subject to SSD development consent).
Concentrate haulage from site Waste rock management	 The 1998 EIS did not assess concentrate haulage from site. The production plan that supported Mod 3 (2015) produced up to (annually): 6,000 t of antimony metal in concentrate at 60% Sb =10,000 t of Sb concentrate 20,000 oz of gold metal in concentrate at 40 g/t Au = 15,550 t Total saleable concentrate including 11% moisture is 28,707 tpa of concentrates to be hauled to port Assuming a B-Double carries 28.6 t Sb concentrate (26 x 1.1 t bags), the nominal trucks per year is 1,004, or average: 2.8 loads/d (7 days per week) 9,000 t generated from construction of the LCT extension and 5,000 – 10,000 tpa during operation of all components. Waste rock used for progressive development of TSF2 and other facilities on escarpment. Garibaldi Open Pit: Pre-existing mining disturbance in this area for the shaft and pit (Figure 2.1). TSF2 construction TSF2 starter embankment to be constructed from siltstone borrowed from basin floor, with additional construction materials for the starter embankment may be sought from the development of the mine access roads. Excavation of further material for the tailings capacity after TSF2 is implied in the current consent, as TSF2 capacity at full height does not provide sufficient capacity for the consented processing of 1,400 kt over the project life (TSF2 at 1.005 mAHD is ~700 kt 	 Introduction of gravity gold recovery increases recovery of gold directly to 'dore', resulting in a reduced volume of concentrates to be hauled from site. Total saleable concentrate (Au and Sb) including 11% moisture under the modified project would produce: Peak rate: 27.3 ktpa Average rate: 20.4 ktpa Assuming the same B-Double capacity (28.6 t), the following truck movements are required: Peak: 954 trucks/yr, or average: 2.6 loads/d (7 days per week) Average: 713 trucks/yr, or average: 2.0 loads/d (7 days per week) Brackins Spur: Waste rock from underground mining at Brackins Spur will be stored in a temporary stockpile prior to being deposited underground as back fill. The mass balance of waste is expected to be close to zero. Any excess waste rock will be placed in a waste dump landform, near the Brackins Spur portal, on the south side of Bakers Creek. Garibaldi Open Pit: The Garibaldi Open Pit will generate 2 Mt of waste rock which will be used for: TSF2 raise (~1.4 Mt) buttressing of TSF1 toe buttressing of Eleanora Dam embankment bulk earthworks at MPF, to improve accessibility and surface water management (drain to ES1 not ES2)
	only).	 Dry Tailings Landform starter embankments
Operation hours	 Processing: 24 hours seven days per week Mining: Conducted on a 2-shift basis Ore haulage: Surface trucking of ore on day shift basis only and only under favourable conditions 	 Processing (no change): 24 hours seven days per week Mining: Monday to Sunday: 24 hours per day (no change) Ore haulage: Monday to Sunday: 24 hours per day
Workforce	Extension created 65 additional full-time jobs (165 in total). The original assessment does not specify average and peak workforce.	 Construction (Feb 25 – Nov 25): Owners Team: 20 ramping to 190 Construction: 25 Production (2026 – December 2030):

Element	Approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine incorporating the Modification
	Currently Hillgrove Mine is in Care and Maintenance, employing 6 full-time equivalents.	 Average: 191 Peak: 205 (2 years through 2028-2029)
Water supply and management	Underground mining water requirements sought from self-contained sources such as Metz dams, recirculation of mine seepage water and from Bakers Creek. Processing requirements sourced from recycled water supply in Eleanora Dam with freshwater sourced from main Hillgrove Reservoir (Town Reservoir) and additional water sourced by pumping from Bakers Creek and Cosmopolitan Dam.	 Water is supplied for the mining use from the following sources (in order of priority): re-use of mine water, after settling of solids use of surface runoff water (contaminated by surface disturbance) from the Recycled Water Storage System use of groundwater (contaminated by current and legacy mining voids) via the Recycled Water Storage System use of water from licensed sources (share components for 74 megalitres industrial use from Town Reservoir and additional 26 megalitres from Bakers Creek and Hillgrove Station) tailings water (i.e. process water stream) will not be used for mine water supply bulk earthworks at the MPF and buttressing of Eleanora Dam is required to improve accessibility and improve surface water management by ensuring water is captured by ES1 rather than ES2 groundwater take would be accounted for by WAL40217 which has a share component of 250 megalitres A new pipeline will be installed from the existing Hillgrove Mine to the Brackins Spur Mine following the existing Garibaldi Spur Road where practicable.
Final landform	Detailed final landform designs and rehabilitation objectives were not outlined in the 1998 EIS. However, the previous Mining Operations Plan (2016-2022 Amendment C) outlined an overarching final landform for the Hillgrove Mine which included a tourism facility providing safe access to cultural and natural heritage features. Remaining areas would include a combination of pasture, woodland and water management areas.	No change to the overarching rehabilitation objectives is proposed. Raising TSF2 to the approved design height of 1,005 mAHD and expanding its footprint westward (TSF2 West) would result in the need for additional disturbance (the area outside the existing Rehabilitation Cost Estimate for Hillgrove Mine) to permit establishment of an amenable to a stable long- term landform (4 m vertical alternating strips at 1:1.75 and 1:3.5).

Additional element	Relevance to approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine (incorporating elements from DA 19/2000)
Metals processing facility (MPF)	Infrastructure associated with the MPF was partially approved by DA 98/35. Processing up to 250,000 tpa of ore was approved by DA 98/35.	Continued operation of the MPF, including new infrastructure constructed (construction to be approved as part of DA 19/2000): flotation cells modified gravity gold recovery modified ore bin tailings thickener process water tank modular office (11 m x 15 m) and ablutions flotation cells regrind mill electrical distribution room process piping, cables and pumps a secondary crusher Mined ore and recovered tailings to be crushed in primary and secondary crushers, prior to sorting, milling, gravity recovery, leaching, flotation and drying to produce: gold ore antimony concentrate tungsten concentrate

Table A.2 Elements from DA 19/2000 to be consolidated into DA 98/35

Table A.3 Elements from DA 95/26 to be consolidated into DA 98/35

Additional element	Relevance to approved Hillgrove Mine (DA 98/35 Modification 4)	Proposed Hillgrove Mine (incorporating elements from DA95/26)
Eleanora- Garibaldi Mine	The EIS supporting DA 98/35 partially included mining at the Eleanora-Garibaldi Mine	Continued mining of the Eleanora-Garibaldi Mine within ML 391 and ML 649. Extraction rate: • Avg: 125,000 tpa • Peak: 240,000 tpa (one year at this rate)