NSW GOVERNMENT

NSW Resources Regulator

FWP0001400

HILLGROVE MINES FORWARD PROGRAM

Thursday 8 February 2024 to Sunday 7 February 2027

Contents

Summary

DETAIL	
Mine	Hillgrove Mines
Reference	FWP0001400
Forward program commencement date	Thursday 8 February 2024
Forward program end date	Sunday 7 February 2027
Forward program revision (if applicable)	
Contact	Katie Ann Bryant
Mining leases	ML 1601 (1992), ML 205 (1973), MPL 919 (1906), PLL 804 (1924), MPL 146 (1973), PLL 416 (1924), ML 592 (1973), ML 391 (1973), ML 1602 (1992), ML 1026 (1973), ML 772 (1973), MPL 220 (1973), MPL 745 (1906), ML 961 (1973), ML 649 (1973), ML 1604 (1992), GL 5845 (1906), ML 5643 (1906), ML 1442 (1992), PLL 3827 (1906), GL 3980 (1906), ML 1020 (1973), ML 749 (1973), ML 1441 (1992), ML 219 (1973), ML 810 (1973), ML 1599 (1992), ML 945 (1973), ML 1332 (1992), PLL 1252 (1924), ML 714 (1973), ML 6282 (1906), ML 1598 (1992), ML 655 (1973), GL 3959 (1906), ML 972 (1973), ML 600 (1973), ML 392 (1973), ML 1603 (1992), ML 1100 (1973), ML 1101 (1973), ML 1440 (1992), ML 231 (1973), ML 1600 (1992), PLL 661 (1924), PLL 350 (1924), MPL 1427 (1906)
Project location	HILLGROVE MINES PTY LTD
Date of submission	Friday 17 May 2024

Important

The department may make the information in your program and any supporting information available for inspection by members of the public, including by publication on its website or by displaying the information at any of its offices. If you consider any part of your program to be confidential, please communicate this to the department via the message function on this submission within the NSW Resources Regulator Portal.

Three-year forecast – surface disturbance activities

Project description

Hillgrove primarily operates under consent DA 98/35 (18 Nov 1998). Additional consents include DA19/2000 and DA95/26. Four modifications to DA98/35 were granted in 2000, 2005, 2015 and 2018. Authorised development includes the underground Brackins Spur Mine, construction and operation of surface facilities, processing of mined minerals and construction of haul roads in Bakers Creek Gorge to the Brackins Spur and Lower Cooney Mines. Mining operations currently comprise exploration activities across mineralised corridors covered by the ML's. Under the current consent, operations were authorised until the end Dec 2023, and are now expired. Under Larvotto Resources Limited, Hillgrove Mines Pty Ltd is undertaking planning and preparation for recommissioning of the mine with a planning pathway that likely includes modification of existing consents (DA98/35, DA19/2000, and DA95/26), plus application for a new consent for the Clarks Gully area (via Council).

Description of surface disturbance activities

Exploration activities

There is no existing consent that authorises ore production or processing and the current site status is Exploration and Assessment, where exploration include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production. In this phase, surface disturbances are related to clearing and rehabilitation of drilling pads, plus maintenance clearing of vegetation from existing disturbances (eg: dams and drainage channels).

Construction activities

There is no existing consent that authorises ore production or processing and the current site status is Exploration and Assessment, where activities include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production. In this phase, there are no new surface disturbances for construction. The only surface activity in which could be considered construction is maintenance clearing of vegetation from existing disturbances (eg: dams and drainage channels).

Mining schedule

Mining development method and sequencing and general mine features.

There is no existing consent that authorises ore production or processing and the current site status is Exploration and Assessment, where activities include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production. In this phase, there are no new surface disturbances for mining development or production.

Areas identified for emplacements, the sequencing of emplacements, construction, and management.

No planned changes to emplacement management or activities at Hillgrove Mine over the next three-year period under the current approvals

Processing infrastructure activities and the location of tailings facilities and schedule for emplacement.

There is no existing consent that authorises ore production or processing and the current site status is Exploration and Assessment, where activities include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production. In this phase, there are no new surface disturbances for tailings facilities. Determining tailings locations for future permitting is one of the key focus areas for the technical studies and it is anticipated further detail will be able to be provided in the following year.

Waste disposal and materials handling operations.

The current waste disposal and materials handling operations will continue to be implemented over the next three years. Putrescible waste produced from the site is sorted and disposed of by offsite waste contractors. Hydrocarbons and chemicals are used onsite at Hillgrove Mine for operations relating to processing ore, blasting and vehicle fuelling and maintenance. Materials handling procedures for hydrocarbons and chemicals include daily pre-start vehicle and plant checks for any hydrocarbon leaks, silt traps and suitable oil separation systems in wash down bays, the maintenance of Safety Data Sheets in a central register and regular inspections of all hydrocarbon and chemical containment facilities as part of the workplace inspection program. Licenced contractors are used for the transportation of hydrocarbons and chemicals to the site and the removal and disposal of used hydrocarbons and hazardous waste. Any identified contaminated soil will be removed from site in accordance with legislation or relocated to the bioremediation area until testing indicates the material is suitable for disposal in the spoil dump.

Key production milestones

MATERIAL	UNIT	YEAR 1	YEAR 2	YEAR 3
Stripped topsoil (if applicable)	(m^3)	0	0	0
Rock/overburden	(m^3)	0	0	0
Ore	(Mt)	0	0	0
Reject material[1]	(Mt)	0	0	0
Product	(Mt)	0	0	0

[1] This includes coarse rejects, tailings and any other wastes resulting from beneficiation.

Three-year rehabilitation forecast

Rehabilitation planning schedule

Rehabilitation planning schedule

There are no rehabilitation planning activities forecasted over the next three-year period for Hillgrove Mine. Plans will be progressed in the coming year to determine future development and operations (mining, processing, infrastructure construction and rehabilitation). This will include applying for new permits to extend the operational life of Hillgrove which will defer major rehabilitation works as the infrastructure will continue operational use. Conceptual plans include re-treatment of TSF1 and placement of those tailings in a new tailings facility. Planning conducted in the coming year will also identify areas where progressive rehabilitation can be initiated alongside future operations. We are currently in a state of Exploration and Assessment, where exploration include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production which is expected to last 12-18 months. During this period, there will be no new disturbance or rehabilitation, other than current rehabilitation already mentioned in the Year one plan.
On completion of the technical studies and submission of the permitting applications, an updated Forward Program will be able to be submitted.

Stakeholder consultation

This will need to be rewritten, with a new schedule. Ongoing stakeholder consultation will occur at the Hillgrove township community meetings over the next three-year period. Consultation with landowners for the development of land access agreements for exploration activities will also be carried out across the forward program period. Hillgrove Mine does not currently have a community engagement group with the village residents. Engagement occurs informally, mostly with individuals on an ad-hoc basis and through HMPL management representation at meetings of the Hillgrove Progress Association where an update report on the mine's activities and plans is provided. HPA meetings are held quarterly.

Rehabilitation studies, risk assessments and/or design work

There are no rehabilitation studies, assessments or design works forecasted over the next three-year period for Hillgrove Mine.

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Rehabilitation research and trials

RRT NUMBER	PROJECT/TRIAL NAME	OBJECTIVE OF TRIAL/PROJECT	METHODOLOGY	EXPECTED DATE OF COMPLETION	STATUS
FWP0001400					

Rehabilitation maintenance and corrective actions

Rehabilitation maintenance will be carried out of the 16 drill pads rehabilitated during 2022-2023. Maintenance consists of weed removal and be carried out as identified during quarterly inspections. Two rehabilitation areas are performing below expectations and require corrective works. Halls Creek Laydown– soils are presenting low pH (4-5). Investigation will be conducted by a suitably qualified person to determine whether soil is naturally acidic or associated with mining activities and provide appropriate remediation options for the area if required to achieve the desired final land use. Bakers Creek Waste Dump – vegetation establishment has been below expectations due to the steep batter angles and grazing of tree seedlings by goats. Recommendation from the 2023 Annual Rehab Inspection proposed deployment of hydro mulching to promote rapid vegetation take-up but has not be done at this time. Technical studies for production recommencement are investigating potential placement of waste rock to reprofile slopes to promote vegetation take-up. Potentially the same response with more information around BCWD and the two sites with the weed control

Rehabilitation schedule

No surface disturbance areas which will be decommissioned over the forward program period would trigger the implementation of rehabilitation activities. Scheduled rehabilitation activities involve maintenance and corrective actions on already established rehabilitation areas. There is no existing consent that authorises ore production or processing and the current site status is Exploration and Assessment, where activities include geological drilling campaigns and technical studies to progress the site towards gaining the required permits to recommence production. Major rehabilitation works will be deferred whilst technical studies are carried out with potential infrastructure will continue operational use. Conceptual plans include re-treatment of TSF1 and placement of those tailings in a new tailings facility.

Subsidence remediation for underground operations

As broad scale subsidence is not an issue at Hillgrove Mine, there is no ongoing subsidence monitoring or management program in place. Occasional small depressions or voids are found around historical workings near the surface. Any subsidence observed during daily activities is reported and action is taken to remediate these areas. Remediation generally comprises shaft / stope exposure and backfilling with rock.

Progressive mining and rehabilitation statistics

Three-yearly forecast cumulative disturbance and rehabilitation progression

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
A	**Total surface disturbance footprint**	(ha)	67.65	67.65	67.65
B	**Total active disturbance**	(ha)	47.57	47.57	47.57
P	**Total new area of land proposed for active rehabilitation**	(ha)	9.77	9.77	9.77

Rehabilitation key performance indicators (KPIs)

	FORECAST	UNIT	YEAR 1	YEAR 2	YEAR 3
O	**Total new active disturbance area**	(ha)			
P	**Total new area of land proposed for active rehabilitation during the reporting period**	(ha)	9.77		
Q	**Annual rehabilitation to disturbance ratio**				

Attachment 1 – Reporting Definitions

REPORTING CATEGORY		DEFINITION
A	Total disturbance footprint – surface disturbance	All areas within a mining lease that either have at some point in time or continue to pose a rehabilitation liability due to surface disturbance activities. The total disturbance footprint is the sum of the total active disturbance, decommissioning, landform establishment, growth medium development, ecosystem and land use establishment, ecosystem and land use development and rehabilitation completion (see definitions below). Underground mining operations should not include the footprint of underground mining areas/subsidence management areas in the total disturbance footprint.
B	Total active disturbance	Includes on-lease exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste rock emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped) and temporary stabilised areas (e.g. areas sown with temporary cover crops for dust mitigation and temporary rehabilitation).
C	Rehabilitation – land preparation	Includes the sum of all disturbed land within a mining lease that have commenced any, or all, of the following phases of rehabilitation – decommissioning, landform establishment and growth medium development. Refer to the glossary of terms in this document for the definition of these phases of rehabilitation.
D	Ecosystem and land use establishment	Includes the area which has been seeded/planted with the target vegetation species for the intended final land use. However, vegetation has not matured to a stage where it can be demonstrated that it will be sustainable for the long term and or require only a maintenance regime consistent with target reference/analogue sites. Typically, rehabilitation areas would be in this phase for at least two years (and usually more) before rehabilitation can be classified as being in the ecosystem and land use development phase. This phase does not apply to infrastructure areas that are being retained as part of final land use for the site.

REPORTING CATEGORY	DEFINITION
O	The area of any new active disturbance that will be created during the next three years, as defined under definition A1 (definition A1 Table 5).
P	The sum of any new rehabilitation to be commenced in the next three years. These areas may be in the phases "Rehabilitation - Land Preparation" or the "Ecosystem & Land Use Establishment" (definitions C & D in Table 5).
Q	The rehabilitation to disturbance ratio (S / R) indicates how many hectares of new rehabilitation are undertaken for each hectare of land disturbed during the three years. A ratio of 1/1 indicates that the area of new rehabilitation and disturbance in that period are the same.

Attachment 2 – Definitions

WORD	DEFINITION
Active	In the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.
Active mining phase of rehabilitation	In the context of rehabilitation, the active mining phase of rehabilitation constitutes the rehabilitation activities undertaken during mining operations such as salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Analogue site	In the context of rehabilitation, an analogue site is a 'reference site' that represents an example of the defining characteristics (such as vegetation composition and structure or agricultural productivity) of the final land use. Characteristics of analogue sites can be assessed to develop the rehabilitation objectives and completion criteria for final land use domains.
Annual rehabilitation report and forward program	As described in the Mining Regulation 2016.
Annual reporting period	As defined in the Mining Regulation 2016.
Closure	A whole-of-mine-life process, which typically culminates in the relinquishment of the mining lease. It includes decommissioning and rehabilitation to achieve the approved final land use(s).
Decommissioning	The process of removing mining infrastructure and removing contaminants and hazardous materials.
Decommissioning Phase of Rehabilitation	Activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. In the context of the rehabilitation management plan this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

WORD	DEFINITION
Department	The Department of Regional NSW.
Disturbance	See Surface Disturbance.
Disturbance area	An area that has been disturbed and that requires rehabilitation. This may include areas such as on-licence exploration areas, stripped areas ahead of mining, infrastructure areas, water management infrastructure, sewage treatment facilities, topsoil stockpile areas, access tracks and haul roads, active mining areas, waste emplacements (active/unshaped/in or out-of-pit), tailings dams (active/unshaped/uncapped), and areas requiring rehabilitation that are temporarily stabilised (i.e. managed to minimise dust generation and/or erosion).
Domain	An area (or areas) of the land that has been disturbed by mining and has a specific operational use (mining domain) or specific final land use (final land use domain). Land within a domain typically has similar geochemical and/or geophysical characteristics and therefore requires specific rehabilitation activities to achieve the associated final land use.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.
Exploration	Has the same meaning as that term under the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

WORD	DEFINITION
Final landform and rehabilitation plan	As defined in the Mining Regulation 2016.
Final land use	As defined in the Mining Regulation 2016.
Form and way	Means the form and way approved by the Secretary. Approved form and way documents are available on the Department's website.
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short lived pioneer species. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Habitat	Has the same meaning as that term under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994* (as relevant).
Indicator	An attribute of the biophysical environment (e.g. pH, topsoil depth, biomass) that can be used to approximate the progression of a biophysical process. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion (i.e. defined end point). It may be aligned to an established protocol and used to evaluate changes in a system.
Land	As defined in the *Mining Act 1992.*
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).
Large mine	As defined in the Mining Regulation 2016.
Lease holder	The holder of a mining lease.

WORD	DEFINITION
Life of mine	The timeframe of how long a mine is approved to mine, from commencement to closure.
Mine rehabilitation portal	Means the NSW Resources Regulator's online portal that lease holders must use (via a registered account) to: ■ upload rehabilitation geographical information system (GIS) spatial data ■ develop rehabilitation GIS spatial data (using online tracing functions) ■ generate rehabilitation plans and rehabilitation statistics using the map viewer and Rehabilitation Key Performance Indicator functionalities. Data submitted to the mine rehabilitation portal is collated in a centralised geodatabase for use by the NSW Resources Regulator to regulate rehabilitation performance of lease holders.
Mining area	As defined in the *Mining Act 1992*.
Mining domain	A land management unit with a discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).
Mining land	As defined in the *Mining Act 1992.*
Native vegetation	Has the same meaning as that term under section 60B of the *Local Land Services Act 2013.*
Overburden	Material overlying coal or a mineral deposit.
Performance indicator	An attribute of the biophysical environment (for example pH, slope, topsoil depth, biomass) that can be used to demonstrate achievement of a rehabilitation objective. It can be measured and audited to demonstrate (and track) the progress of an aspect of rehabilitation towards a desired completion criterion, that is, a defined end point. It may be aligned to an established protocol and used to evaluate changes in a system.

WORD	DEFINITION
Phases of rehabilitation	The stages and sequences of actions required to rehabilitate disturbed land to achieve the final land use. The phases of rehabilitation are: ■ active mining ■ decommissioning ■ landform Establishment ■ growth medium development ■ ecosystem and land use establishment ■ ecosystem and land use development.
Progressive rehabilitation	The progress of rehabilitation towards achieving the approved rehabilitation completion criteria. This may be described in terms of domains, phases, performance indicators and rehabilitation completion criteria.
Rehabilitation Completion	The final phase of rehabilitation when a rehabilitation area has achieved the approved rehabilitation objectives and rehabilitation completion criteria for the final land use. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that the relevant rehabilitation obligations have been fulfilled following submission of *Form ESF2 Rehabilitation completion and/or review of rehabilitation cost estimate* application by the lease holder.
Rehabilitation Completion criteria	As defined in the Mining Regulation 2016.
Rehabilitation cost estimate	As defined in the Mining Regulation 2016.
Rehabilitation management plan	As defined in the Mining Regulation 2016.
Rehabilitation objectives	As defined in the Mining Regulation 2016.
Rehabilitation risk assessment	As defined in the Mining Regulation 2016.
Rehabilitation schedule	The defined timeframes for progressive rehabilitation set out in the forward program.

WORD	DEFINITION
Relevant stakeholders	Means any persons or bodies who may be affected by the mining operations, including rehabilitation, carried out on the lease land, and includes: ■ the relevant development consent authority ■ the local council ■ the relevant landholder(s) ■ community consultative committee (if required under the development consent) or equivalent consultative group ■ affected land holder(s) ■ government agencies relevant to the final land use ■ affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities) ■ local Aboriginal communities, and ■ any other person or body determined by the Minister to be a relevant stakeholder in relation to a mining lease.
Risk	The effect of uncertainty on objectives. It is measured in terms of consequences and likelihood (AS/NZS ISO 31000:2009).
Secretary	The Secretary of the Department.
Security deposit	An amount that a mining lease holder is required to provide and maintain under a mining lease condition, to secure funding for the fulfilment of obligations under the lease (including obligations that may arise in the future).
Surface disturbance	Includes activities that disturb the surface of the mining area, including mining operations, ancillary mining activities and exploration.
Tailings	A combination of the fine-grained solid material remaining after the recoverable metals and minerals have been extracted from the mined ore, and any process water[2].
Waste	Has the same meaning as that term under the *Protection of the Environment Operations Act 1997*.

[2] Commonwealth of Australia (DITR), 2007. *Tailings Management*.

Attachment 3 – Plans

Hillgrove Mines Forcast Data.pdf

Hillgrove Mines Forcast Data.pdf

Hillgrove Mines Forcast Data.pdf