



ALKANE
RESOURCES LTD
ABN 35 000 689 216

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

for the

PEAK HILL GOLD MINE 2022



Peak Hill Gold Mine Proprietary Pit looking north from viewing platform 29 November 2022



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2022

Prepared by:

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21 February 2023

Peak Hill Gold Mine

Annual Environmental Management Report 1 January to 31 December 2022

Name of Mine: Peak Hill Gold Mine

Rehabilitation Management Plan Commencement Date: 23 November 2022

Mining Authorisations (Lease / License No.): MLs1351, 1364, 6036, 6042, 6277, 6310, 6389, 6406, 1479, GL5884

Land Owner/Occupier: Alkane Resources Ltd

Tenure: Freehold (Lot 81) and leasehold

Pre-mining Landuse; Lot 81 – Agriculture with remainder mining 1889-1917 and easements in favour of Parkes Shire Council

Name of Authorisation / Authorisation holder(s): Alkane Resources Ltd

Name of Mine Operator (if different): N/A

Name and Contact Details of the Mine Manager (or equivalent):

Michael Sutherland

General Manager NSW

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Dubbo, NSW, 2830

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Name and Contact Details of Environmental Representative:

As above

Name of Representative(s) of the Authorisation Holder(s): Michael Sutherland

Title of Representative(s) of the Authorisation Holder(s): General Manager NSW

Signature of Representative(s) of the Authorisation Holder(s):



Due Date 1 March 2023

Final

Version: 1

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1. INTRODUCTION

1.1. SCOPE AND FORMAT

1.1.1. Scope

This Annual Environmental Management Report (AEMR) for the Peak Hill Gold Mine (“the Mine”) has been prepared by Alkane Resources Ltd (“the Company”) following the EDG12 Small Mine AEMR Guide (2012).

Parkes Shire Council is the consent authority (DA648/93) for the Peak Hill Gold Mine and consent condition 7.1 requires an Annual Report detailing the performance of the development.

The reporting period for the Peak Hill Gold Mine AEMR is 1 January to 31 December.

A letter from NSW Planning & Environment (dated 8 May 2017) established a due date for annual reporting as 1st March.

The mine had an approved (30 March 2016) Mining Operations Plan 2014-2022 for the Peak Hill Gold Mine (MOP) to take the site through to relinquishment or renewal by 17 January 2022.

Schedule 8A of the Mining Regulation 2016 imposed standard conditions on all mining leases in NSW. The provisions of Schedule 8A commenced on 2 July 2022. MOPs have been replaced with a Rehabilitation Management Plan and Forward Program which required consultation during preparation with Resources Regulator and PSC.

Rehabilitation Objectives and Rehabilitation Completion Criteria were circulated to the Resources Regulator and Parkes Shire Council in late 2022.

An application to renew the Mining Leases was lodged 6 July 2021. Instruments of renewal were issued 4 July 2022.

The Mine is located immediately east and northeast of the township of Peak Hill, in the Central West of NSW (**Figure 1** and **Plan 1A**).

The key MLs for the Peak Hill Gold Mine were issued to Alkane by the Minister for Mineral Resources in 1993 (see **Plan 1C**). As additional resources were identified through exploration drilling, additional MLs were granted to form a contiguous area for mining and gold processing for the purpose of this document the area covered by MLs is referred to as the “Mine Site”. Freehold agricultural land (now Lot 81 in DP 12155789) was purchased by Alkane to accommodate the mine infrastructure

1.1.2. History of Operations

The Peak Hill Gold Mine operated as a drill and blast open cut gold mine between 1996 and 2002. Gold was extracted using heap leach cyanide technology until 2005 - when the last gold was poured on 20 December 2005.

The Waste Rock Emplacement, ROM Pad and haul roads were rehabilitated in December 2002 before the Macmahon Contractors mining fleet demobilised from site (**Plan 1**).

When gold production ceased from the heap leach in November 2005, that landform was reshaped and rehabilitated by McCutcheon's Earthmoving and the Soil Conservation Service designed and built the downslope structures.

All but 8.5Ha of the mine site was rehabilitated by 2005 and the site has essentially been under care and maintenance since then. A Site Supervisor, based in Peak Hill, maintains the mine site.

In June 2017, four hectares of the ML1364 was excised (now Lot 80 in DP1215579) and gifted to PSC to enable the establishment of a waste transfer station to replace the exhausted Peak Hill landfill facility. Roose Road was extended to service the new site which re-cycled the Macmahon Contractors site infrastructure.

The final steps in rehabilitation of the site are described in RMP (Nov 2022). RMP **Plan 1** shows the proposed final landform and rehabilitation features.

Gold Production from the Peak Hill gold mine from October 1996 to December 2005 was 153,657 fine ounces.

The Open Cut voids are a feature of a walking trail, operated by Parkes Shire Council (under a formal *Agreement for Tour Arrangements*) offering free access to the public during opening hours.

A Tourist Mine Permit issued by the Minister in 2003 is no longer valid (*Work Health and Safety (Mines & Petroleum Sites) Act 2013*) and the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 as the PHGM is considered an active minesite with ongoing resource definition drilling to occur on the leases.

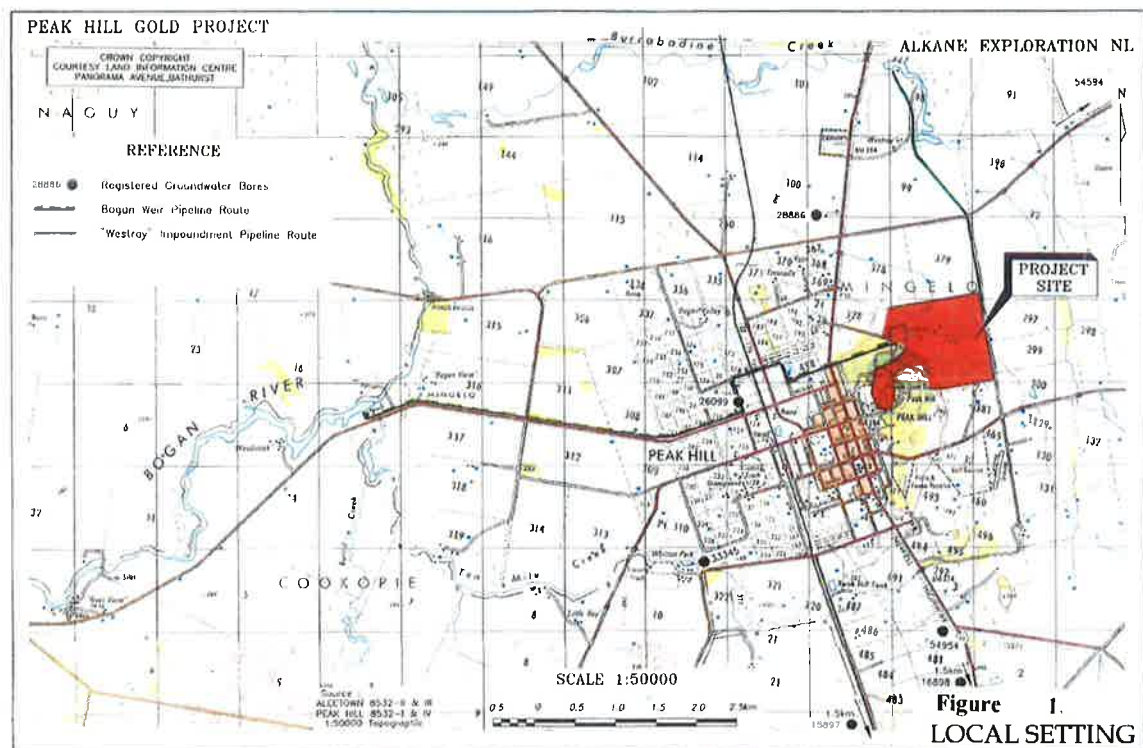
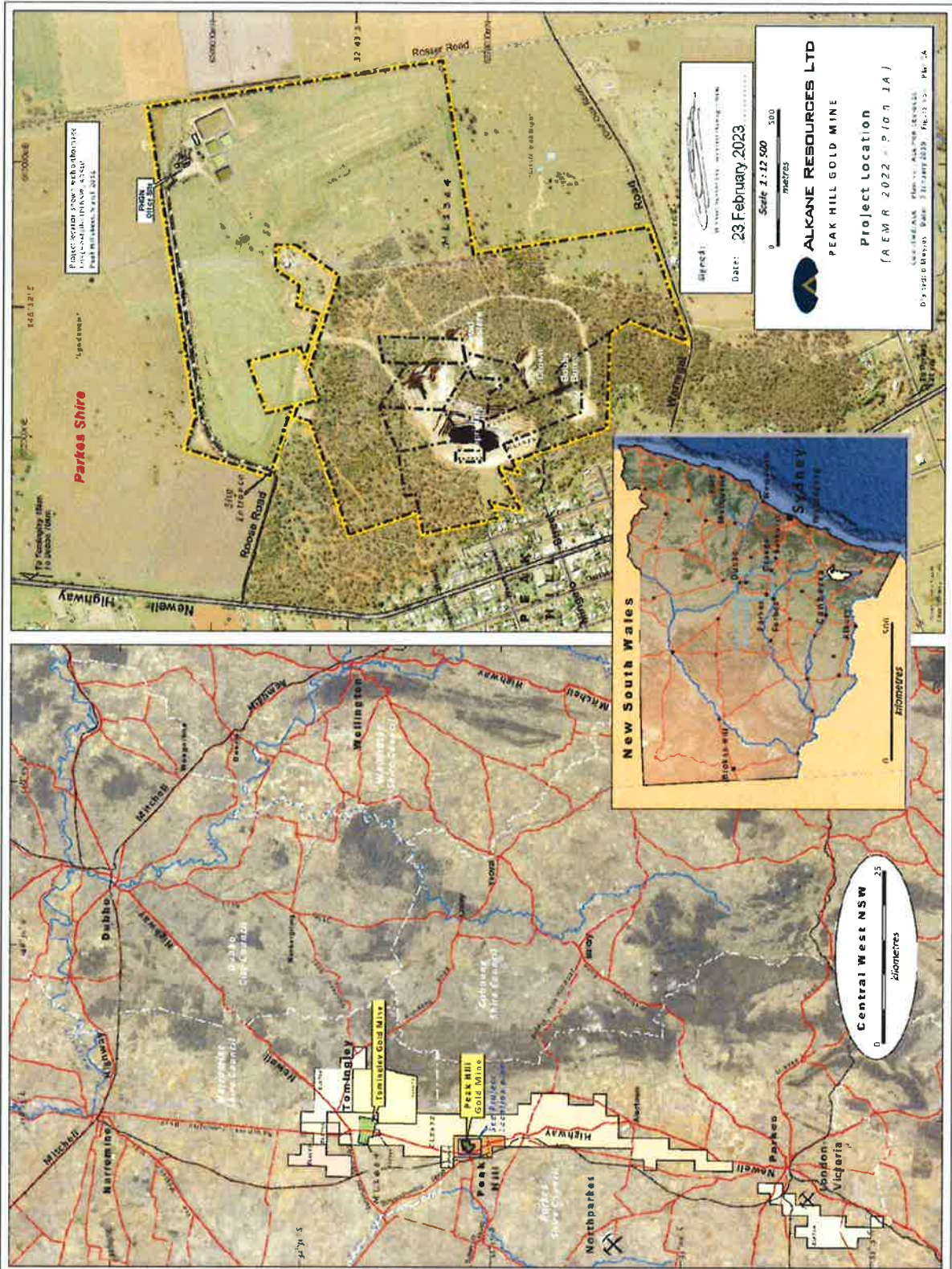
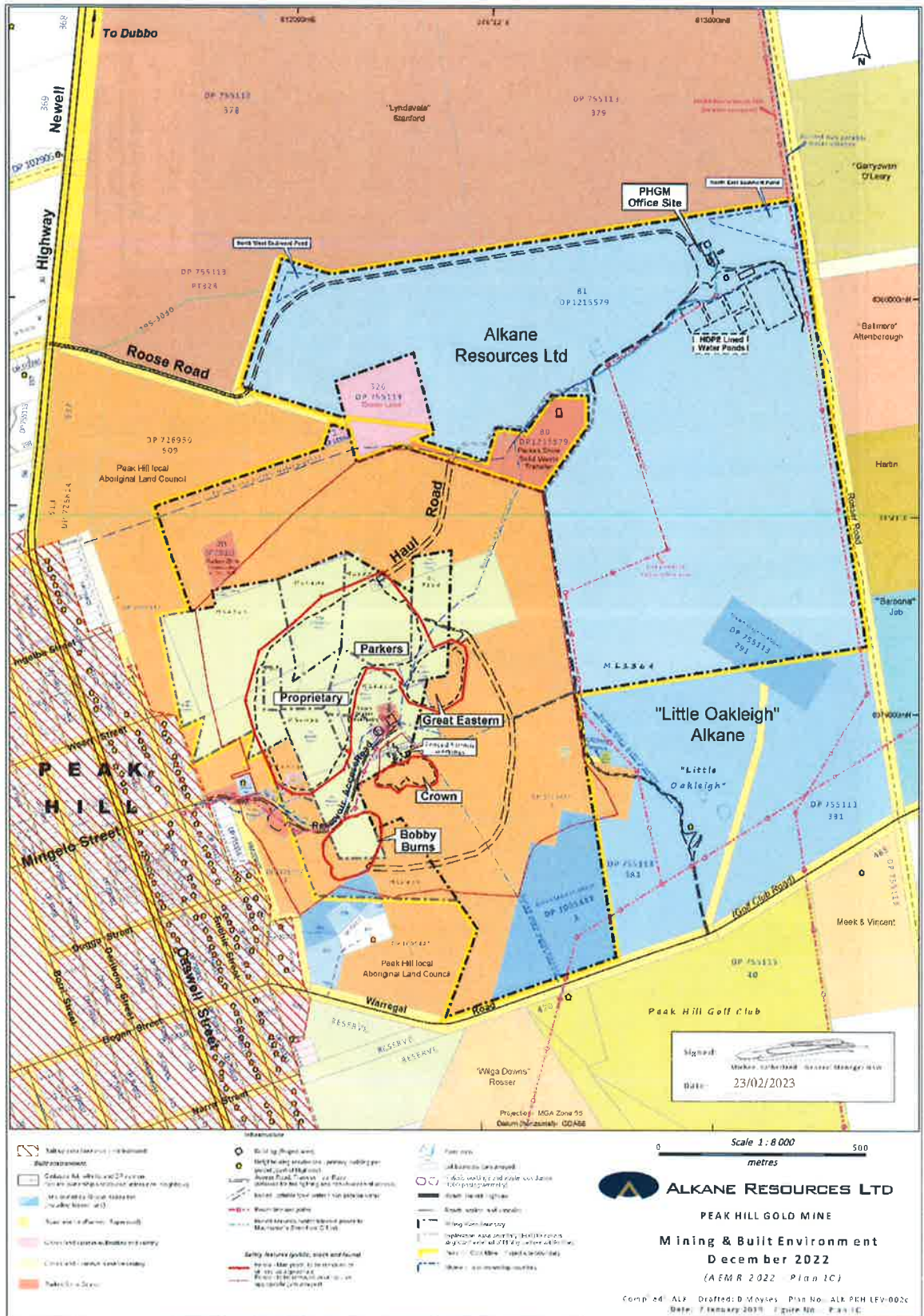
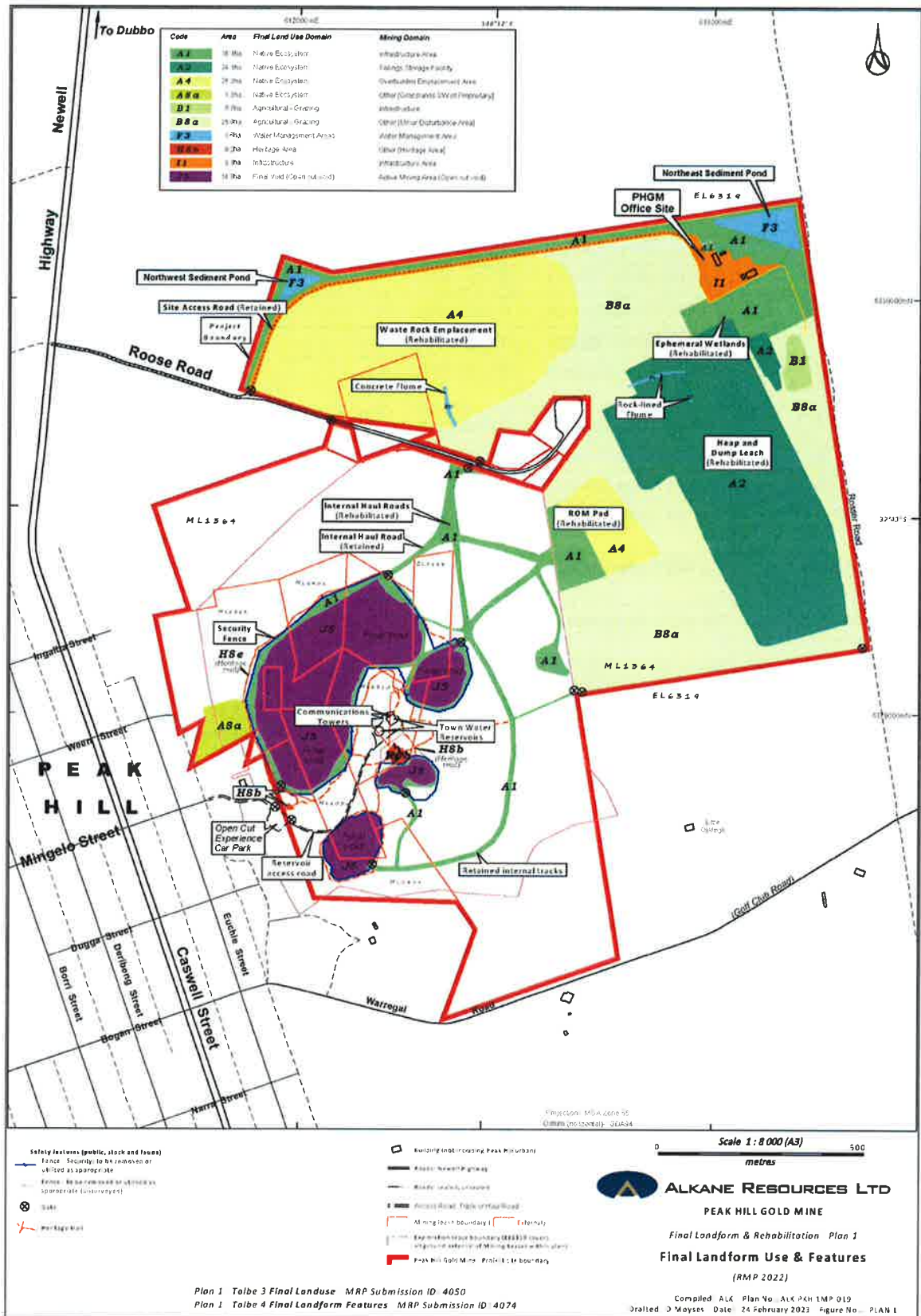


Figure 1: Local Setting (source: EIS 1993)







1.2. CURRENT CONSENTS, AUTHORISATIONS AND LICENSES**Table 1: presents the consents, authorisations and licences held in relation to the Mine.**

Number	Granted by	Grant Date	Expiry Date	Purpose
Development Consent				
DA 648/93	Parkes Shire Council	3 Sep 1993	Replaced by DA 15039	Development Consent – Open Cut Gold Mine and heap leach gold extraction plant
DA 648/93	Parkes Shire Council	16 Aug 1994	Replaced by DA 15039	Modification of Development Consent (Parkers Extension)
DA 1033/97	Parkes Shire Council	15 Jul 1997	-	Extension of Processing Operations
DA 1049/97	Parkes Shire Council	5 Aug 1997	-	Garth Bore Pipeline
DA 1080/97	Parkes Shire Council	6 Feb 1998	-	Main Tailings
DA 99253	Parkes Shire Council	1 Feb 2000	-	Great Eastern
DA 99253	Parkes Shire Council	20 Apr 2000	-	Modification of Development Consent (Great Eastern)
DA 00174	Parkes Shire Council	8 Dec 2000	-	Bobby Burns Pit
DA 01072	Parkes Shire Council	19 Jun 2001	-	Parkers Cutback
DA 01162	Parkes Shire Council	20 Nov 2001	-	Crown Pit
DA 15039	Parkes Shire Council	25 Jun 2015	-	Retention of Mine Buildings at PHGM and supersedes DA 648/93
Subdivision Certificate 15008	Parkes Shire Council	30 Jul 2015	-	Waste Transfer Station
Special Purpose Conditions	Mineral Resources	27 Feb 2003	No longer valid	Permit to Conduct Tourist Activities
Mineral Authorities				
EL6319	Minister for Mineral Resources	12 Oct 2004	11 Oct 2026	Exploration Activities
GL5884		12 Dec 1969	02 Jun 2037	Mining activities at the Peak Hill Gold Mine
ML1351		15 Jun 1994	24 Sep 2036	
ML1364		14 Mar 1995	25 Dec 2035	
ML1479		18 Jan 2001	17 Jan 2043	
ML6036		07 Mar 1968	02 Jun 2037	
ML6042		21 Feb 1968	02 Jun 2037	
ML6277		12 Mar 1971	02 Jun 2037	
ML6310		27 Aug 1971	02 Jun 2037	
ML6389		06 Apr 1973	02 Jun 2037	
ML6406		25 Jan 1974	13 Feb 2037	
Licences - Environmental				
EPL5473	Environment Protection Authority	5 Sep 1999	Renewed annually	Regulation of noise, dust and water emissions from the Mine Site.
		7 Nov 2003	NA	Notice of Variation of Licence
		28 Jan 2011	NA	Licence varied by correction to DECCW region record
		17 Jun 2014	NA	Licence variation 1505946
		3 Dec 2018	NA	Licence Variation (reflecting excision of 4Ha of ML1364)
Licence 451536	Trade & Investment – Crown Lands	23 Feb 2010	NA	Licence for pipeline and pump site
WAL 34968	NSW Office of Water	1993	NA	300ML Water Access Licence – Bogan Weir
Source: Alkane Resources Ltd				

1.3. LAND OWNERSHIP AND LAND USE

Plan 1A provides an aerial photo of the Mine Site and its surrounds. Land uses within and surrounding the Mine Site include the following:

- Urban residential and rural residential;
- Agriculture and native ecosystem;
- Transportation (Newell Highway);
- Water Supply Infrastructure on Peak Hill, Reservoir access road, communications towers, rising and gravity water mains;
- Peak Hill Solid Waste Transfer Station off Roose Road (Lot 80 DP1215579);
- Commercial main street of Peak Hill;
- Recreation (Open Cut Experience – walking trails and interpretive signs);
- Former mining operations – four mine voids plus historic Crown workings and alluvial mine workings; and
- Bushland biodiversity owned by Peak Hill Local Aboriginal Lands Council.

1.3.1. Community Consultation

Consultation was undertaken with the local community, indigenous representatives and relevant government agencies throughout the operating life of the Peak Hill Gold Mine and during mine closure planning.

Establishing a tourism asset, post mine closure, was a voluntary commitment made by Alkane Resources as a demonstration of its commitment to sustainable development. The community has been keen to have continued access to the mining leases on the hill post mine closure.

The former Tourist Mine, operated as the *Open Cut Experience*, attracted 11,000 visitors in 2003.

The most recent community information session was hosted by Alkane at the Peak Hill Ex-Services and Citizens Club on 24 October 2018 to explain Alkane's diamond drilling program which was conducted from December 2018 to February 2019.

Alkane has met with Peak Hill Local Aboriginal Lands Council during this period to discuss potential underground resources at Peak Hill and the Tomingley Gold Extension Project.

Alkane will be an active participant in a *Back to Peak Hill Weekend* 17-19 March 2023 by hosting bus tours to the mine site.

1.3.2. Government Agency Consultation

The following government agencies were consulted during the preparation of the RMP

- Mining Exploration & Geoscience.
- Resources Regulator
- Environment Protection Authority.
- Parkes Shire Council.

The EPA issued a licence variation for the Peak Hill Gold Mine (EPL5473) on 3 December 2018. The variation was simply a slight change to the premises identification.

The Resources Regulator issued an improvement Notice regarding of the Open Cut Experience Emergency Management Plan on 19 January 2022 and a second improvement notice on 11 February 2022 regarding the Safety Management System for the PHGM.

During the period Alkane engaged a consultant and completed a thorough revision of the Health and Safety Management System to cover the mine site (including Open Cut Experience) and exploration activities on the exploration tenements.

The Resources Regulator reviewed the work completed on the HSMS on site on 19 October 2022.

In July 2022, Michael Sutherland was nominated Quarry Manager for PHGM site (as a competent person).

2. MINING ACTIVITIES

2.1. PROJECT DESCRIPTION

The Peak Hill Gold Mine includes the following components (**Plan 1**).

- Mine site access road (off Roose Road).
- Three-bedroom transportable house with carport (ultimately to be removed).
- Mine site office, crib room, workshop steel shed (slab floor), small storage shed for maintenance equipment (on former lab slab).
- Core shed, sea containers (exploration access and continuing use).
- Five HDPE lined ponds (awaiting re-use or final rehabilitation).
- Rehabilitated Final Landforms (waste rock emplacement, heap leach and ROM Pad).
- Open cut voids (fenced):
 - Proprietary and Parkers Open Cut (including Parkers Cut Back);
 - Great Eastern Open Cut;
 - Crown Open Cut;
 - Bobby Burns Open Cut (partially back filled); and
 - Historic (1890-1915) Crown Workings and alluvial workings (fenced).
- Bobby Burns to Proprietary Haul Road (fire break).
- Buried water pipelines from “Westray”, the Bogan Weir and Peak Hill Sewage Treatment Works. A 63mm buried potable water line runs from the PSC reservoir to site office and core yard.
- A transformer and electrical distribution network within the Mine Site.
- Grassed waterways and sediment ponds in the northeast and northwest corners of the mine site.
- Three groundwater monitoring bores around the northeastern perimeter of the mine site.
- Viewing platform and 22 interpretive signs around the Open Cut Experience.

Parkes Shire Council and NSW Government provided additional built infrastructure to the Tourist Mine during 2016 to enhance the visitor experience. Additional improvements – a large, fabricated gateway/shelter/interpretive signs and two bronze sculptures and a sound post were installed by PSC in 2017. These improvements were officially opened by the Minister for Tourism, the Hon Adam Marshall on 11 August 2017.

The Bogan River water pipeline was replaced in the Peak Hill-Narromine rail corridor by ARTC for the Inland Rail Project. The pipeline was upgraded to meet Inland Rail construction standards in the rail corridor. The Bogan weir pump was reactivated during 2020.

Though no biodiversity offsetting was required for the Mine Site, it should be noted that the development of PHGM has resulted in significant benefits to biodiversity within and in the vicinity of the Mine Site. By restricting unlawful access to existing areas of remnant and regrowth native vegetation, as well as regular pest and weed monitoring and maintenance programs, ongoing management of the Mine Site directly and indirectly benefits the existing biodiversity. In addition, the rehabilitation of various areas of the Mine Site and establishment of mixed native and exotic plant communities has further increased the overall biodiversity of the Mine Site.

Table 2 below details the mining domains within the Mine Site, their size and major assets contained. Note that the areas detailed are based on maximum disturbance within the term of the RMP. A more detailed description of each domain is provided in the RMP (Nov 2022).

Table 2: Major Assets per Domain

Mining Domain	Size (approx. ha)	Assets	Use & Details
1 - Infrastructure Area	19.2	Roads: site access. Buildings: Including site office, house, crib room and amenities. Processing: Including shed, wet plant slab and man-proof fencing 5 HDPE-lined ponds (processing and overflow). Ancillary Infrastructure: growth medium stockpile A subdivision of 4 hectares of land from Lot 380 with former contractor infrastructure on it was approved by PSC and subsequently gifted by Alkane to PSC for use as a waste transfer station. A part cancellation (4Ha) of the Mining Lease 1364 took effect from 26 June 2017.	Roads provide access to open cuts, site entry and inspection to site areas. Buildings still in use and maintained. Wet plant structures removed from site in 2010 and only slab remains. Processing ponds contain rainwater and pumped Bogan river water which evaporates during the year. Approximately 2,250m ³ stockpiled growth medium approximately 0.7h
2 – Tailings Storage Facility	24.1	5Mt of heap and dump leach (spent ore) contoured to direct runoff to a downslope rock-lined flume. Includes 0.6Ha dump leach trial area The crushed ore in the heap leach does have some commercial value as construction material. RMS used spent heap leach material for shoulder widening on Newell Highway in 1999.	Rehabilitated as a final landform. Well grassed with mixed pasture sward. Some natural regeneration of trees and shrubs. Top-dressed with Ag lime (2t/Ha in April 2022)

Mining Domain	Size (approx. ha)	Assets	Use & Details
3 - Water Management Area	1.6	Includes two sedimentation ponds, a farm dam near former contractor's area and grassed table drains and waterways.	Table drains and grassed waterways are designed to manage rainfall run-off.
4 - Overburden Emplacement Area (Waste Rock Emplacement and ROM pad)	26.3	5 Mt of waste rock including 815,000 tonnes of sulphidic material (>1 g Au/t) which is encapsulated in oxide waste rock (<0.5g Au/t). Includes 4.5Ha Rom pad constructed from oxidised waste rock.	Shaped and rehabilitated WRE has maximum height of 25m and heap leach has a maximum height of 20m. Top-dressed with Ag lime (2t/Ha in April 2022)
5 – Active Mining Area (Open Cut Void)	14.7	Includes four voids at the end of the MOP period.	Part of tourist mine attractions. Natural regeneration and mine openings provide habitat for bats, birds and possums. Used for commercial photography.
8 - Other – Minor Disturbance Area	35.0	Areas largely undisturbed by mining (49Ha) Grazing licence as part of "Little Oakleigh" Lease (8 Ha).	Biodiversity and Agriculture (grazing).
8 – Other – Rehabilitation Area	1.3	Areas of historical mining disturbance (not associated with PHGM) that were rehabilitated by PHGM. Also includes areas used for exploration drilling in 2018-19 and subsequently rehabilitated.	Biodiversity and conservation.
<p>Note: The WRE extends across 2.65Ha of Lot 326 which was used as a solid waste Depot by Parkes Shire Council up until 2017. This facility has been replaced by 4Ha of land subdivided from Lot 380. Source: Alkane Resources Ltd</p>			

2.2. ACTIVITIES OVER THE MOP TERM

2.2.1. Exploration

The primary activity at the Peak Hill Gold Mine was the continuing use as the exploration base for the Tomingley Gold Extension Project (TGEP) which is a State Significant Development. TGEP will likely extend the life of Tomingley Gold Operations for at least ten years with the San Antonio Roswell Open Cut and underground mine proposed for construction in 2022. An EIS for TGEP was submitted to DPE in February 2022. SSD approval is anticipated in Feb 2023.

Regional exploration activity (between Tomingley and Peak Hill) will continue during the 2023. Exploration personnel will continue to access the core yard and site offices as part of their normal activities.

The Peak Hill Gold Mine MLs contain a known sulphide resource totalling 4.91Mt grading at 2.05g/t Au and 0.17%Cu (1.0g/t Au cut off).

Exploration activities may include the following:

- Geochemical sampling;
- Geological mapping;
- Geophysics; and
- Diamond and Reverse Circulation resource and geotech drilling.

The objective of the PHGM exploration program in 2018-2019 was to further define the known resource, as well as identify additional resources within the Mine Site. Metallurgical test work on the core and resource evaluation continues. Some geotechnical drilling will be required as part of the ongoing underground resource feasibility work.

Environmental management of exploration activities will continue to be implemented to ensure the final rehabilitation of the exploration areas is consistent with the rehabilitation objectives identified in Section 5.2 of this document.

2.2.2. Construction

The only construction that took place during the reporting period was a small maintenance shed was erected on the slab of the former site laboratory. One refrigerated container is temporarily on site to store the Proprietary Pit drill core which contains high amounts sulphides which would otherwise oxidise.

Alkane renewed the Mining Leases at Peak Hill during the period to allow for future potential underground mining. Processing of any ore would likely take place at Tomingley Gold operations. That would require a new development application and associated environmental assessment.

2.2.3. Mining Operations during the Reporting period

No mining was undertaken on the PHGM MLs during the 2021 reporting period (1 January 2022 - 31 December 2022).

There are no plans to disturb previously rehabilitated areas during the MOP period.

There has been no land clearing, construction activity, ore extraction nor mineral processing during 2022.

2.3. REHABILITATION DURING THE AEMR PERIOD

There have been few active interventions on the mine site since the commencement of the MOP as most of the site was rehabilitated by 2005.

In March 2020, exploration samples bags that had been temporarily stored south of the intermediate pond were removed from site and the area above the trial dump leach site was covered with fresh topsoil.

On 7 April 2021, 108 tonnes of agricultural lime was spread across the heap leach and WRE final landforms (46Ha) at a rate of approximately 2t/Ha. While the pasture cover is generally excellent, it was expected that the addition of lime would shrink some of the bare patches on the final landforms. Bare patches are also a feature on surrounding agricultural land (not owned by Alkane).

Boxthorn, Prickly Pear and other noxious weeds were controlled through spraying by the Site Supervisor. A patch of St John's Wort (*Hypericum perforatum*) was identified grown in a 400m square patch east of the PSC waste transfer station. This weed was sprayed during flowering and the location will be monitoring annually for follow-up eradication. This weed has proliferated across the Central West in 2022. Excessive macropod numbers were controlled under licence from EES by a licenced professional shooter.

The site continues to develop more ecological complexity each year as trees planted in 1996 are producing habitat for birds and other vertebrates and seed for new generations of trees.

The 2020-2022 calendar years have seen above average and timely rainfall which resulted in three of the best consecutive cropping and pasture seasons ever experienced in the district.

Groundcover on the mine site is generally much better than surrounding farmland.

Trees and shrubs (self-sown) on the batters of the WRE were cut to maintain ground cover and protect buried sulphides.

2.3.1. Further Development of Final Rehabilitation Plan

A Forward Program, Rehabilitation Objectives and Final Landform Plan

was submitted to the Resources Regulator during the period.

A DA was approved by Parkes Council in 2016 to allow for the retention of the mine buildings (except the house) on site.

A DA was approved by Parkes Council for the subdivision of four hectares of land from Lot 380 for use as a new solid waste transfer station. This land was transferred at no cost to council to satisfy consent condition 1.25 of Consent 648/93

The new Peak Hill Waste Transfer Station which has recycled the contractor's area (workshop shed, slab and washdown bay) opened for operations in 2018.

Alkane submitted a part relinquishment application to DRE on 6 November 2015 to excise the 4 hectares from the mining lease. Alkane received confirmation of the part cancellation of the part cancellation on 26 June 2017.

Alkane will consult with Mining Exploration & Geoscience and DPE during 2023 regarding the potential to re-open the Peak Hill Gold Mine as an underground mine. Those discussions and feasibility study results will determine whether the mine proceeds to final closure or works towards the approval of a new development.

Some of the remaining infrastructure on site would be utilised in any new development.

Table 3 presents the predicted cumulative disturbance and rehabilitation progression in accordance with the first Forward Program submitted for the PHGM in accordance with Clause 13(1) of Schedule 8A of the *Mining Regulation 2016*.

During the next reporting period, the first Annual Rehabilitation Report for the PHGM will be prepared. A summary of the information presented in that Report will be included as part of each successive AEMR.

In accordance with Clause 16 of Schedule 8A of the *Mining Regulation 2016*, the Annual Rehabilitation Report and Forward Program are publicly available on the Alkane website.

Table 3: Predicted Cumulative Disturbance and Rehabilitation Progression during the next Three-Year Term

	Year 1	Year 2	Year 3
Total disturbance footprint – surface disturbance (ha)	122.9	122.9	122.9
Underground mining area (ha)	0	0	0
Total active disturbance (ha)	19.2	19.2	19.2
Rehabilitation – land preparation (ha)	0	0	0
Ecosystem and land use establishment (ha)	0	0	0

Table 4: Maintenance Activities on Rehabilitated Land
(This period's activities and activities proposed in the next reporting period)

NATURE OF TREATMENT	Area Treated (ha)		Comment/control strategies/ treatment detail
	Report period	Next period	
Additional erosion control works (drains re-contouring, rock protection)	0	0	
Re-covering (detail - further topsoil, subsoil sealing etc)	0	0	
Soil treatment (detail - fertiliser, lime, gypsum etc)	0Ha	0	108 tonnes of agricultural lime was applied to the WRE and heap leach final landforms in April 2021
Treatment/Management (detail - grazing, cropping, slashing etc)	0	0	
Re-seeding/Replanting (detail - species density, season etc)	0	0	
Adversely Affected by Weeds (detail - type and treatment)	194.8	194.8	Boxthorn, Bathurst burr, Devils Claw, Fierce thornapple, Prickly Pear, St Johns Wort. Spot spraying with glyphosate and wetter. St. Barnaby's Thistle was eradicated from site. Spray and/or chip to remove.
Feral animal control (detail - additional fencing, trapping, baiting etc)	100	100	Macropod reduction under licence on Lot 81 only.

3. METEOROLOGICAL DATA

The Peak Hill Gold Mine no longer maintains a weather station at the mine site but rather relies on the registered BOM site at Peak Hill Post Office (within 500m of the site).

In 2019 the total rainfall for New South Wales was the lowest on record, at 55% below average; well below the previous driest year of 1944.

2019 was the warmest year on record for New South Wales as a whole, with the mean temperature 1.95 °C above average and 0.27 °C warmer than the previous warmest, 2018.

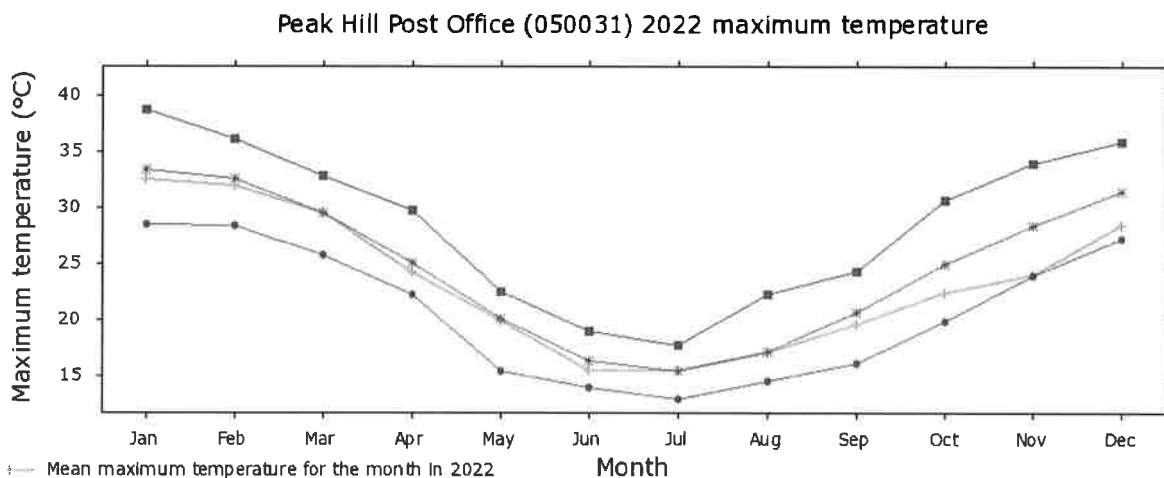
The five warmest years on record for New South Wales are now 2019, 2018, 2014, 2017 and 2009.

2022 experienced a mean maximum significantly cooler than the mean for September to December period. The amount of rain and rain days likely influenced the cooler than average year.

The Peak Hill Post Office mean annual rainfall is 563.2mm. The total rainfall at Peak Hill Post Office in 2022 was 1099.6mm (almost double the annual mean).

The mine site rehabilitation performed as designed and no damage has been observed on any of the final landforms. The northeast sediment pond did overflow during 2022 and water quality was monitored.

The charts below contain maximum and minimum temperatures for 2022 versus the long term mean and daily and monthly rainfall data for 2022.

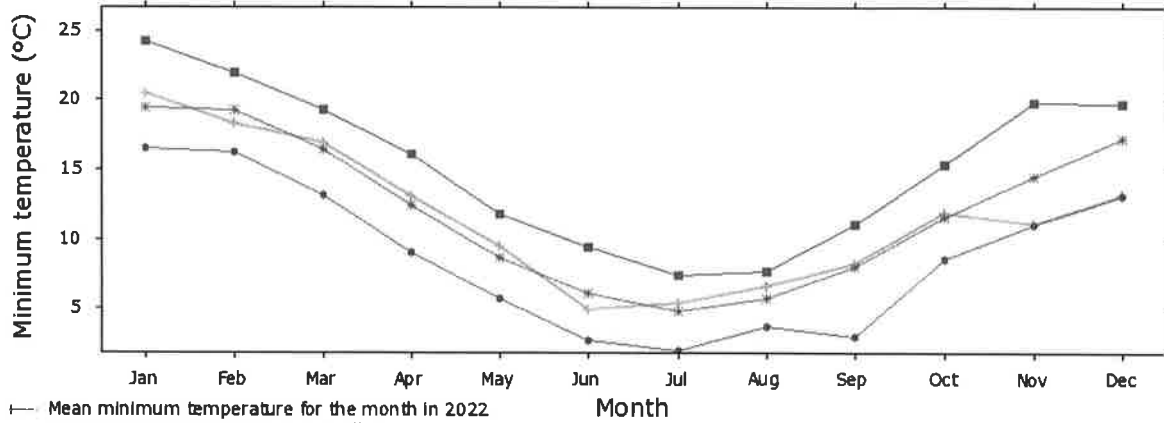


— Mean maximum temperature for the month in 2022
 * — Mean maximum temperature over all years
 ■ — Highest monthly mean maximum temperature over all years
 ● — Lowest monthly mean maximum temperature over all years
 No data

Note: Data may not have completed quality control
Observations made before 1910 may have used non-standard equipment

Climate Data Online, Bureau of Meteorology
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Peak Hill Post Office (050031) 2022 minimum temperature



- Mean minimum temperature for the month in 2022
- * Mean minimum temperature over all years
- Highest monthly mean minimum temperature over all years
- Lowest monthly mean minimum temperature over all years
- No data

Note: Data may not have completed quality control
Observations made before 1910 may have used non-standard equipment

Climate Data Online, Bureau of Meteorology
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2022	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Graph												
1st	0	0	0	0	↓	3.4	9.0	10.0	0.2	↓	29.2	0
2nd	0	0.4	13.8	0	42.0	0	4.0	0.2	0	↓	6.4	0
3rd	0	0	63.0	0	0.2	0	27.6	0	0	↓	0	0
4th	0	0	0	0	1.4	0.6	25.4	12.0	0	8.0	0	0
5th	0	0	↓	0	6.4	↓	11.6	22.4	0	2.2	↓	0
6th	0	0	↓	0	0	2.2	2.0	↓	0	12.2	↓	0
7th	36.8	0	10.4	15.2	0	0	0.6	↓	0	0	1.2	0
8th	31.0	0	0.2	25.0	0	1.6	0	0.6	4.4	30.0	0	12.0
9th	0	0	3.0	54.2	0	0	0	0.4	32.4	17.0	0	0
10th	0	0	0	23.0	0	0	0	0	↓	0.4	0	↓
11th	0	0.6	0	0.2	0	↓	0	0	↓	0	2.0	↓
12th	13.6	0	0	0	18.2	↓	0	0.6	8.6	0	0.6	3.0
13th	0	0	0.8	0	3.2	↓	1.0	1.0	0	0	12.6	6.6
14th	2.0	0	0	0	↓	1.0	0	2.0	0	21.6	41.0	0
15th	0	0	0	0	↓	0	0.2	5.4	7.0	0.2	0	0
16th	6.4	0	0	0	3.0	0	0	9.2	48.4	0	0	0
17th	0	0	1.2	0	0.2	0.6	0	0.6	0	0	0	0
18th	0.4	0	2.0	0	0	0.2	0	0	1.6	0	0	0
19th	6.6	0	0	0	0	0	0.2	6.0	0	0	0	0
20th	0.8	0	0	21.6	0	0	0	↓	0	6.4	7.2	0
21st	0	8.0	0	0	0	0	0	↓	8.6	6.8	0	0
22nd	0	0	0	0	0	0	0	3.0	16.8	↓	0	0
23rd	0	0	0.8	0	0	0	0	0	0.4	↓	0	2.0
24th	0	0	0	0	0	0	0	8.6	0	18.4	0	↓
25th	0	1.4	0	0	0	0	0	0.2	0	3.6	0	↓
26th	0	2.0	0	0	0	0	9.2	0.2	0	0.8	↓	↓
27th	0	1.2	3.2	17.2	0	0	0	0	4.4	1.0	↓	↓
28th	0.4	0	1.4	10.8	15.4	0	0.4	0	1.2	2.0	2.2	12.0
29th	0	0	0	2.0	0.2	0	0.6	2.0	2.2	0	0	0
30th	0	0	0.4	↓	1.2	0	↓	19.2	0	0	0	1.0
31st	1.6	0	0	0	15.0	0	↓	0	0	0	0	0
Highest Daily	36.8	8.0	63.0	54.2	18.2	3.4	27.6	22.4	48.4	30.0	41.0	12.0
Monthly Total	99.6	13.6	100.2	169.2	106.4	9.6	91.8	103.6	136.2	130.6	102.4	36.6

Annual total for 2022 = 1099.8 mm

[View all monthly data](#)

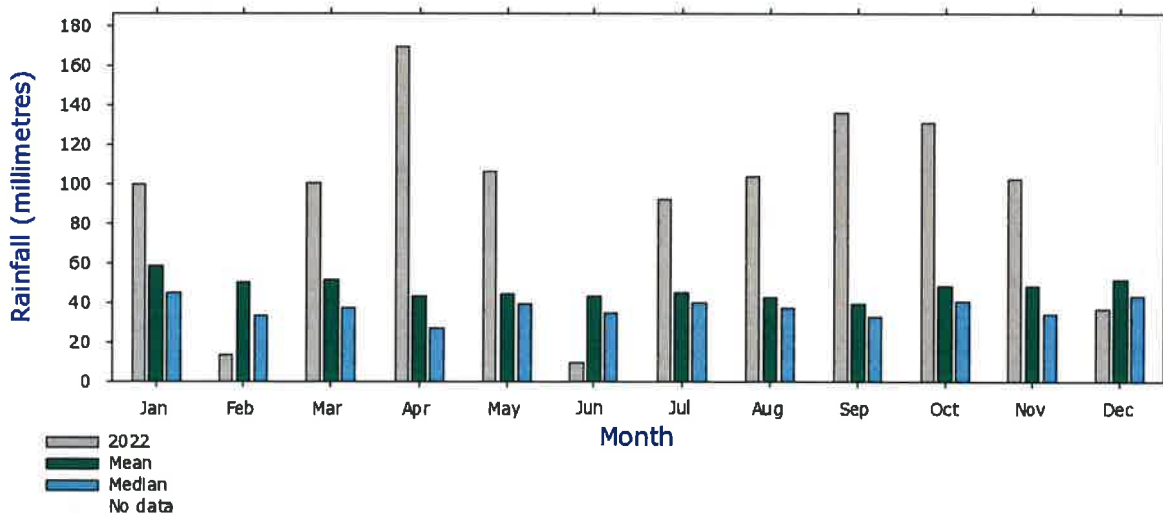
[Plot year of daily data](#)

Summary statistics for all years

[Move mouse over highest daily rainfall to view dates.](#)

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean	58.9	50.5	51.4	42.9	44.3	43.3	45.0	42.6	39.6	48.4	48.6	51.2
Median	44.8	33.4	37.4	27.0	39.5	34.6	39.8	37.5	33.0	40.8	34.2	42.9
Highest Daily	120.7	133.9	116.8	105.4	89.2	123.2	55.8	60.5	48.8	71.4	60.2	88.0

Peak Hill Post Office (050031) 2022 Rainfall (millimetres)



4. ENVIRONMENTAL PERFORMANCE

Environmental control strategies (rehabilitation) have been undertaken as described in the MOP 2014-2022.

A new Rehabilitation Management Plan (Nov 2022) and Forward Program will guide rehabilitation actions towards final land form and land use.

However, final rehabilitation of site will not occur while there is still potential to develop the underground resource at Peak Hill.

Three Landscape Function Analysis studies (14 transects across final landforms and two analogue site) have been undertaken to date by Graminus Consulting on August 2013, February 2014 and May 2014.

The analogue sites have not been disturbed by mining. Significantly “neither analogue site is any better or worse than any other transect”. The metric scores (May 2014) for stability, infiltration and nutrient cycling endorse a positive outcome for the rehabilitation techniques employed on the minesite.

Surface water discharges (results reported on www.alkane.com.au) from the licenced discharge point (NE sediment pond) comply with EPA limits. Despite almost double Peak Hill average rainfall in 2021, there were three surface water discharges from the site.

PHGM NE Sed Pond SW Sampling Results - 2022				
Sampling date	LAB ID	pH	O&G	BOD
06-May-22	ES2216251	7.53	<5	2
09-Sep-22	ES2233121	7.81	<5	5
14-Nov-22	ES2241434	7.63	<5	3

This is an indication of the good groundcover across the minesite and healthy soils (landscape function) being able to absorb rainfall events.

Box thorn spraying is getting on top of the infestation with a decline in recruitment evident.

Macropod management is ongoing to ensure landforms are not overgrazed.

Photographs of the mine site exploration and rehabilitation progress are contained in Appendix I.

5. COMPLAINTS AND LIAISON

There were no complaints received by Alkane relating to the Peak Hill Gold Mine during the reporting period.

Alkane completes an annual return for the EPA and that is posted on the Company website.

APPENDIX 1- PHOTOGRAPHS



Photo 1: Peak Hill Gold Mine waste rock emplacement and screen plantings looking northeast. All photos unless otherwise labelled were taken by Mike Sutherland on 14 June 2022.



Photo 2: Upper batter of WRE looking west. Self-sown Sticky everlasting daisies (*Helichrysum viscosum*) were abundant across the mine site in 2022.



Photo 3: One of the former “bare patches” on the WRE. There is evidence that lime treatment (2/t Ha) in April 2021 has assisted in shrinking these patches. Photo taken 29 November 2022.



Photo 4: Emubush (*Eremophila longifolia*) recruited to batters on the southwestern corner of WRE now forms a thicket and attracts several species of birds during flowering. Photo taken 29 November 2022.

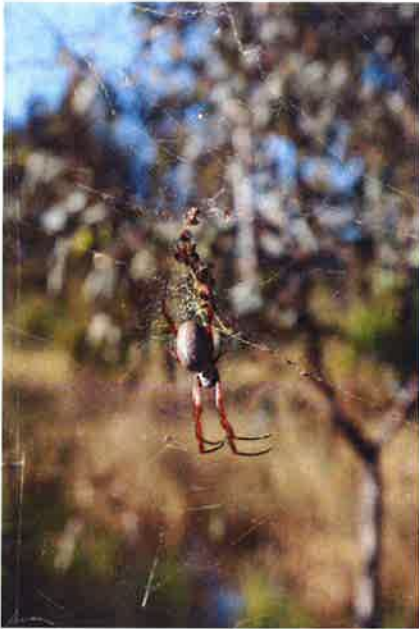


Photo 5: Golden Orb spider (*Nephila edulis*) in the woodland around the northeast sediment pond created by PHGM on Lot 81 is an indicator of the habitat complexity that has been established since 1996. Prior to mining there was no shrub layer on Lot 81. Photo taken 14 June 2022.



Photo 6: View of regenerating vegetation surrounding northwest sediment pond. This pond has never discharged water since construction in 1996. Photo taken 29 November 2022.



Photo 7: Prickly Pear (*Opuntia stricta*) was targeted for eradication on the minesite during the period. Neighbouring land was also target for this introduced species. It was probably a garden escapee at Peak Hill.



Photo 8: St John's Wort (*Hypericum perforatum*) was identified on the minesite and sprayed for the first time on 29 November 2022. This infestation, east of waste transfer station, will be monitored in 2023 for follow up treatment.



Photo 9: Resources Regulator personnel during a minesite inspection in the core yard on 24 January 2022.



Photo 10: The northeast sediment pond discharged during 2022, was sampled and was compliant with EPA discharge limits for the site. Photo taken 8 January 2022.



Photo 11: View of Proprietary pit looking southeast from west wall on 29 November 2022.



Photo 12: The PHGM core yard has been busy all of 2022 - processing core for the Tomingley Gold Extension Project and other local exploration tenements. Photo taken 29 November 2022.



Photo 13: Maintenance shed erected on the slab of the former Aminya laboratory that serviced the mining operation 1996-2002. Photo taken 29 November 2022.



Photo 14: Ken Robinson providing scale for the larges of the River Red Gums at the northwest sediment pond (planted in 1996). Photo taken 29 November 2022.



Photo 15: Heap leach berm looking south. Currawang (*Acacia doratoxylon*) grows on the west facing batters. Photo taken 29 November 2022.

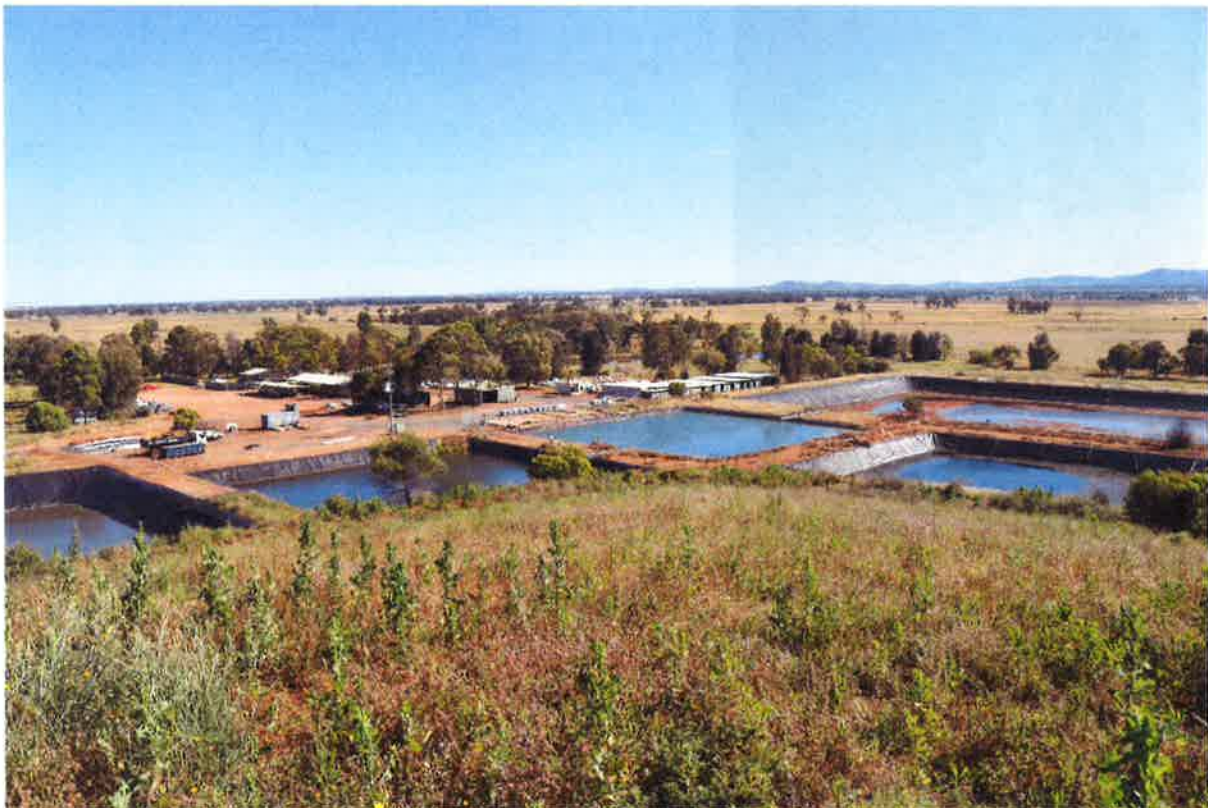


Photo 16: Remaining infrastructure at PHGM seen from northeast corner of heap leach final landform. Photo taken 29 November 2022.



Photo 17: Interpretive signs installed in 2003 along the Open Cut Experience are due for renewal in 2023. Photo taken 14 June 2022.



Photo 18: Crown pit natural regeneration looking east from OCE walking trail. Photo taken 14 June 2022.



Photo 19: Great Eastern pit looking northeast from viewing area. Photo taken 14 June 2022.



Photo 20: Bobby Burn pit looking east. Partial back-fill in 2002 has a well-established woodland covering approximately 30% of the void area. Photo taken 14 June 2022.



Plate 21. The downslope flumes constructed on the WRE in 2002 by Soil Conservation service are working effectively. This image taken 29 November 2022 shows three stilling ponds each supporting a dominant wetland species (*Cyperus sp.*, *Juncus sp.* and *Typha orientalis*).



Plate 22. Four Australasian Grebe (*Tachybaptus novaehollandiae*) chicks on the northeast sediment pond. Floating nest partly submerged in foreground. Photo taken 29 November 2022).

APPENDIX 2- CORRESPONDENCE

Alkane Resources Ltd
PO BOX 4384
VICTORIA PARK WA 6979
Attn: Michael Sutherland

By email: msutherland@alkane.com.au

Dear Michael Sutherland

Mining Authorisations GL 5884 (1906), ML 1351 (1992), ML 1364 (1992), ML 1479 (1992), ML 6036 (1906), ML 6042 (1906), ML 6277 (1906), ML 6310 (1906), ML 6389 (1906), ML 6406 (1906) - Peak Hill Gold Mine - Request for MOP Extension

NOTICE OF MOP EXTENSION APPROVAL

I refer to your correspondence dated 14 January 2022 (RR22/2459) requesting an extension to the approved Mining Operations Plan (MOP) (MCV14/919; INW14/29703) for the Peak Hill Gold Mine, which is due to expire on 17 January 2022.

The Department has considered your request and has granted an extension to the current approved MOP until **2 July 2022** to enable the continuation of the approved activities during the transitional period for the *Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021* and preparation of documentation required.

It is the responsibility of the Authorisation Holder to ensure that all mining and mining related operations described in this MOP are as approved within the relevant Project Approval or Development Consent and all necessary approvals, consents or permits required under the relevant NSW or Commonwealth regulations have been obtained prior to carrying out the operations.

It is the responsibility of the Authorisation Holder to fulfil their obligations and commitments to the rehabilitation outcomes and performance standards as approved by the relevant consent authority to ensure the rehabilitation outcomes identified are achieved.

If you require additional information, please contact the Resources Regulator on 1300 814 609 or via email at nswresourcesregulator@service-now.com.

Yours sincerely,

Christine Fawcett
Manager Environmental Operations
Resources Regulator

17 January 2022



Alkane Resources Ltd
C/- Clare Briscoe
Australian Mining & Exploration Title Services (AMETS)
PO BOX 440
HOVE SA 5048

By email: nsw@amets.com.au

10 June 2022

Dear Clare

Notice of proposed decision – GL 5884, ML 6036, ML 6042, ML 6277, ML 6310, ML 6389, ML 6406 (Act 1906), ML 1351, ML 1364 and ML 1479 (Act 1992)

I refer to your application for the renewal of the abovementioned leases which were received by Regional NSW – Mining, Exploration and Geoscience (MEG) on 5 and 6 July 2021.

Recommended decision

A delegate for the Minister administering the *Mining Act 1992* (the decision-maker) has considered the application and the supporting information submitted with the application and is proposing to renew GL 5884, ML 6036, ML 6042, ML 6277, ML 6310, ML 6389, ML 6406 (Act 1906), ML 1351, ML 1364 and ML 1479 (Act 1992) as set out in the **enclosed** draft Instrument(s) of Renewal.

Term

Please note that it is proposed to reduce the term of the authorities to less than the 21 years you have sought (other than ML 1479 for which 21 years is proposed). The reduced term is to ensure that the authorities remain valid under the provisions of the *Mining Act 1992* and the *Native Title Act 1993 (Cth)*.

Minerals

You may also note that Alumina and Steatite are no longer defined as minerals under the *Mining Act 1992* and have been removed from the relevant authorities.

What you need to do

Should you wish to make representations regarding the recommended decision you are required to submit the representation to MEG (at the email address: resource.operations@planning.nsw.gov.au) by **27 June 2022**.



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Next steps

If no representations are received by the due date, processing of the renewal applications will be finalised as proposed in our previous correspondence to you. A final decision will be made following 2 July 2022 when new standard mining lease conditions 2021 apply (as part of the *Mining Regulation 2016* amendment process).

Further information

If you would like to discuss this matter, please contact Sophie McCrae, Assessment Analyst, on 02 4063 6759. Alternatively, please contact the Titles and Customer Operations team on 02 4063 6600 or by email at resource.operations@planning.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Chris Dwyer'.

Chris Dwyer
Manager Title Assessments
Assessments and Systems
Regional NSW – Mining, Exploration and Geoscience

Encl: Draft Instrument(s) of Renewal



Alkane Resources Ltd
C/- Clare Briscoe
Australian Mining & Exploration Title Services (AMETS)
PO BOX 440
HOVE SA 5048

By email: nsw@amets.com.au

6 July 2022

Dear Clare

Renewal – GL 5884, ML 6036, ML 6042, ML 6277, ML 6310, ML 6389, ML 6406 (Act 1906), ML 1351, ML 1364 and ML 1479 (Act 1992)

I refer to your application for the renewal of the abovementioned leases which were received by Regional NSW – Mining, Exploration and Geoscience (MEG) on 5 and 6 July 2021.

Decision to renew

In accordance with the provisions of s114(1)(a) and s115 of the *Mining Act 1992*, the decision-maker has now renewed GL 5884, ML 6036, ML 6042, ML 6277, ML 6310, ML 6389, ML 6406 (Act 1906), ML 1351, ML 1364 and ML 1479 (Act 1992) subject to the terms and conditions set out in the attached Instrument of Renewal.

Renewal of the leases took effect on 4 July 2022.

Useful information

It is the holder's responsibility to be aware of the expiry date of this authority, and if renewal is required, to lodge a renewal application. Any application must be lodged within the period specified in s113(2) of the Act, that is, not earlier than 5 years and not later than 1 year before the lease ceases to have effect. Renewals may be lodged by completing form 'ML8 Renew a mining lease'. This form and a list of fees are available from [our website](#).

In addition, compensation is payable to landholders for any loss suffered, or likely to be suffered, as a result of the exercise of the rights conferred by the authority or by an access arrangement in respect of the lease.



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Further information

If you would like to discuss this matter, please contact Sophie McCrae, Assessment Analyst, on 02 4063 6759. Alternatively, please contact the Titles and Customer Operations team on 02 4063 6600 or by email at resource.operations@regional.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Chris Dwyer'.

**Chris Dwyer
Manager Title Assessments
Assessments and Systems
Regional NSW – Mining, Exploration and Geoscience**

Encl: Final Instrument(s) of Renewal

Mike Sutherland

From: Mark Greally <mark.greally@regional.nsw.gov.au>
Sent: Wednesday, 7 December 2022 10:00 AM
To: Mike Sutherland
Subject: ASMT0023709 | PP0001928 | Audit – Peak Hill Gold Mine

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear Mr Michael Sutherland

Peak Hill Gold Mine – Compliance with Schedule 8A Mining Regulation 2016 Standard conditions of mining leases

Schedule 8A of the Mining Regulation 2016 imposes standard conditions on all mining leases in NSW. The provisions of Schedule 8A commenced on 2 July 2022 for all 'large mines' – being those mines which require an environment protection licence under the *Protection of the Environment Operations Act 1997* (refer to clause 1 in Schedule 8A).

Further details regarding the Schedule 8A provisions are available on the Resources Regulator website at the link below:

<https://www.resourcesregulator.nsw.gov.au/rehabilitation/mine-rehabilitation/new-standard-rehabilitation-conditions-on-mining-leases>

The Resources Regulator is responsible for ensuring compliance with the provisions of Schedule 8A. The Regulator has undertaken a preliminary review of the Schedule 8A requirements as they apply to the **Peak Hill Gold Mine** and notes the following:

Schedule 8A enables lease holders to lodge the following applications via the [Regulator Portal](#):

- amending the annual reporting period [clause 13(5) in Schedule 8A],
- amending the submission date of the forward program and annual rehabilitation report [clause 15(2) in Schedule 8A].

The Regulator does not have a record of any applications for the **Peak Hill Gold Mine** and it may be the case that you do not require any change to these dates and/or periods. However, if you wish to seek a change then please ensure you log into the [Regulator Portal](#) and submit the relevant application.

Clause 19 in Schedule 8A requires the lease holder to nominate a contact person with whom we can communicate with in relation to the mining lease(s) for the purposes of the *Mining Act 1992*. The Regulator does not have a record of this having been done for the **Peak Hill Gold Mine**. Please ensure you log into the [Regulator Portal](#) and complete this nomination. A copy of the written consent of the lease holder(s) will also need to be attached.

Clause 7 in Schedule 8A requires the lease holder to conduct a rehabilitation risk assessment and implement measures to eliminate, minimise or mitigate the risks. The rehabilitation risk assessment is not required to be submitted to us for approval but is to be made available upon request. Please ensure you keep appropriate records documenting the rehabilitation risk assessment, including how it has been evaluated over the term of a mining lease.

Clauses 10 and 16 in Schedule 8A require the lease holder to prepare and publish a Rehabilitation Management Plan (RMP) on its website. The RMP is not required to be submitted to us for approval but is to be made available upon request. Clause 17 in Schedule 8A requires lease holders to keep appropriate records documenting the RMP,

including how it has been evaluated over the term of a mining lease. Following a review of your website it appears that a RMP has not been published.

Clause 13(1) in Schedule 8A requires the lease holder to submit a forward program. The Regulator does not have a record of a forward program for the **Peak Hill Gold Mine**. Please ensure you log into the [Regulator Portal](#) and submit the required forward program. Clause 16 in Schedule 8A also requires the lease holder to publish the forward program on its website. Following a review of your website it appears that a forward program has not been published.

You are requested to address the above matters as soon as possible.

You are reminded that non-compliance with the standard mining lease conditions in Schedule 8A of the Mining Regulation 2016 constitutes an offence under section 378D of the *Mining Act 1992*. If you require additional information please contact Inspector Mark Greally on 1300 814 609 (option 2, then 5) or via email at nswresourcesregulator@service-now.com

Yours sincerely,

Regards,

Mark Greally
Inspector Environment

NSW Resources Regulator | Department of Regional NSW
T 02 6360 9527 | E mark.greally@regional.nsw.gov.au
105 Prince Street (Locked Bag 21) Orange NSW 2800



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The Department of Regional New South Wales acknowledges that it stands on Country which always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.



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