

Mount Morgan Gold Project

Heritage Minerals Pty Ltd

Mount Morgan Priority Living Area, Central Queensland

Amendment Report for RDI17-001

Report Submitted to Support “Carrying out activities in a Priority Living Area”



Prepared by
Heritage Minerals Pty Ltd
November 2020

CONTENTS

DEFINITIONS AND ABBREVIATIONS

1.0 INTRODUCTION

2.0 KEY AMENDMENT COMPONENTS

3.0 MOUNT MORGAN MINE SITE BACKGROUND

4.0 PROPOSED RESOURCE ACTIVITY

- Mining (Resource Extraction)
- Mineral Processing
- Future Exploration, Mining and Rehabilitation

5.0 PROJECT PERMITTING

- Priority Living Area
- Mining Leases
- Landowner Compensation Agreements
- Environmental Authority
- Heritage

6.0 CURRENT LAND STATUS

- Surrounding Land Uses within the PLA

7.0 FUTURE LAND USE

- Tourism
- Environmental Remediation
- Future Land Use without Resource Development Activity

8.0 COMMUNITY IMPACT AND MITIGATION

9.0 DEMONSTRATION OF STAKEHOLDER CONSULTATION

- Mount Morgan Community
- Rockhampton Regional Council
- Landowners
 - Rockhampton Regional Council

- **DNRM**
- **Private landowners**
- **Easement Owner**

APPENDICES

APPENDIX 1 - PHOTOS OF VISUAL IMPACT AREAS

APPENDIX 2 - ASSESSMENT CRITERIA TABLE 1 AND 2

APPENDIX 3 - MAP – HERITAGE MINERALS OPERATING AREAS, FUTURE EXPLORATION AND REHABILITATION AREAS

APPENDIX 4 - LIST OF COMMUNITY COMMENT FROM COMMUNITY INFORMATION MEETING HELD AT MOUNT MORGAN 14th DECEMBER 2016

DEFINITIONS AND ABBREVIATIONS

RIDA (Regional Interests Development Approval) an approval under the Regional Planning Interests Act 2014 (RPI Act).

Resource Activity has the meaning given in the Environmental Protection Act 1994 (includes a mining activity).

AMD – Acid Mine Drainage is acidic water that is created when sulphide minerals are exposed to air and water and through a natural chemical reaction, produce sulphuric acid.

AMLPL – Abandoned Mine Land Program (State of Queensland)

DES – Department of Environment and Science

DLGRMA – Department of Local Government, Racing and Multicultural Affairs

DNRME – Department of Natural Resources, Mines and Energy

EA – Environmental Authority

EPA Act – Environmental Protection Act 1994

Heritage Minerals – Heritage Minerals Pty Ltd (Mount Morgan mining lease operator)

Mineral Exploration (exploration) - is the process of finding commercially viable concentrations of minerals to mine. In this report it may include activities such as: drilling, bulk sampling, mineral separation testing, geotechnical, geophysical and geochemical testing and other generally accepted industry practice techniques to achieve the stated purpose.

FS – Feasibility Study is the evaluation of a proposed mining project to determine whether the mineral resource can be mined economically at a high level of confidence. A Feasibility Study in this definition is the same as a Definitive Feasibility Study (DFS) or a Bankable Feasibility Study (BFS).

MR Act – Mineral Resources Act 1989

Mining – As used in this report; has the same meaning as defined in the MRA Act. In this report it may include: extracting tailings by excavator or dredging, transport to a ROM Pad, processing tailings and other mineralised rock in a central process plant and disposing the waste discards into a Tailings Storage Facility (TSF). Mining includes

extracting mineral from former mine waste dumps (mullock) and extracting and stockpiling former mine slag.

MMML – Mount Morgan Mine Limited

Norton – Norton Gold Fields Limited (former Mount Morgan mining lease holder)

OCP – Open Cut Pit

MMPAD – Mount Morgan Promotion and Development Inc

Mine rehabilitation - is the restoration of the post-mined landscape to the intended post-mining land use

ROM PAD – Run of Mine Pad – Stockpiled ore ready for processing

RPI Act – Regional Planning Interests Act 2014

RRC – Rockhampton Regional Council

RRPS – Rockhampton Region Planning Scheme 2015

TSF – Tailings Storage Facility

Requirement to obtain a Regional Interests Development Approval

Section 24 of the RPI Act provides an exemption from the provisions of the Act where the activity is pre-existing. A resource activity is considered to be 'pre-existing' if, immediately before the land becomes land in an area of regional interest, the activity may be carried out lawfully on the land.

A resource activity can be carried out lawfully on land if:

- it is carried out under a resource authority or environmental authority; and*
- the application for either authority adequately detailed the location, nature and/or extent of the expected surface impacts of the activity; and*
- no further authority or approval is required to be obtained in relation to the location, nature or extent of the expected surface impacts of the activity.*

Where a regional interest development approval is required for an activity located in a PLA, the applicant must make an assessment application to the chief executive of the Department of Infrastructure, Local Government and Planning (DILGP).

The RPI Act restricts the carrying out of resource activities where the activity is not exempt from the provisions of the Act or a regional interests development approval has not been granted.

Heritage Minerals prepared this amendment report based on advice from DLGRMA that the existing approval (RPI17-001) granted to Norton Goldfields Limited (Norton) on the 26th July 2017 requires review based on both changes to the mining lease ownership and proposed project impacts.

A State Heritage Development Application for “make safe works” at the Mount Morgan Mine site was prepared by DNRME and Carbine and was approved on 7th April, 2017 (CHDS06457117), however, a Heritage Management Plan between the State and Heritage Minerals is required before mining activity can commence. This Heritage Management Plan is currently in preparation.

An amendment to the existing Environmental Authority (EPML00433013) held by Heritage Minerals is also required to incorporate proposed project changes.

1.0 INTRODUCTION

The RPI Act Guideline 04/14 – carrying out activities in a Priority Living Area describes a Priority Living Area (PLA) as “*an area of regional interest under the Regional Planning Interests Act 2014 (RPI Act)*”. PLA’s are identified through the regional plan making process under the Sustainable Planning Act 2009 and are shown on a map in a regional plan.

A PLA is an area that includes the existing settled area of a city, town or other community and other areas necessary or desirable:

- a) for the future growth of the existing settled area; and
- b) as a buffer between the existing or a future settled area and resources activities.
- c) The purpose of establishing PLAs as areas of regional interest is to provide greater certainty for investment in the development of a region’s towns or urban growth areas.

The Central Queensland Regional Plan gazetted in 2013 defined a Priority Living Area around the town of Mount Morgan that included the mining leases covering the historic Mount Morgan Mine. The 2015 Rockhampton Regional Planning Scheme (RRPS) designated the mine site as “Mine Precinct” and described outcomes that accommodate future mining under conditions.

The Mount Morgan Mine site is located on land managed as an Abandoned Mine Land Project by the Queensland Department of Natural Resources, Mines and Energy (DNRME). In April 2018, Carbine Resources Limited withdrew from the Mount Morgan Gold Copper Project relinquishing all interests. Ownership of the mining leases was retained by Norton.

In September 2020, Heritage Minerals acquired ownership of the Mount Morgan mining leases by commercial agreement with Norton. The transfer of mining lease ownership includes transfer of the rights and obligations for Environmental Authority EPML00433013, the rights and obligations obtained with the Regional Development Interests approval (RDI17-001), transfer of a Cultural Heritage Management Agreement (CHMA) with the Gangulu Endorsed Parties and the rights and obligations obtained under the “Phase 2 Agreement” between the State and Norton that sets out the respective obligations for the State and the mining lease owner for managing environmental and heritage management legacies from the former mine operator (Mount Morgan Mine Limited).

Heritage Minerals is finalising a Feasibility Study (FS) to re-treat tailings at the former Mount Morgan mine site to produce gold and copper.

Heritage Minerals has prepared this report as an amendment to the 2017 “Report Submitted to Support Carrying Out Activities in a Priority Living Area” prepared by Carbine Resources Limited for the RDI17-001 permit application. This report and the appended “Assessment Criteria response tables”, have been updated to incorporate the changed mining lease ownership and Heritage Minerals planned project changes.

2.0 KEY AMENDMENT COMPONENTS

Heritage Minerals work has followed on from the work and assessment completed by Carbine. Key components of change relevant to the Regional Interests Development Act requirements are:

- A change in mine lease ownership and planned project ownership (Norton/Carbine to Heritage Minerals);
- A reduction in mine lease area to excise key areas with tourism potential, and thereby accommodate future tourism proposals of tourism stakeholders;
- A change in planned project operator (Carbine Resources to Heritage Minerals);
- Mine life reduced from 10+ years to 5+ years although there could be extensions based on future economic evaluation of remaining resources;
- Increase in planned production rate from 1Mt/annum to 2Mt/annum;
- Gold and copper production without pyrite production;
- No pyrite haulage to the Port of Gladstone;
- No requirement for Road Use Notification for mineral product haulage;
- Changed process plant location to that currently approved in the Environmental Authority;
- Process plant location is now 900m from the closest residence (Carbine 1.2 km) but the location has visual and noise mitigating topography;
- Construction of a Tailings Storage Facility (TSF) in Sandstone Gully to hold treated tailings. Carbine planned to construct their TSF at Sandstone Gully in two stages however, Heritage Minerals plan to build only one TSF wall at the junction of the OCP and Sandstone Gully. Water in the OCP will be treated before release to the Dee River;
- Augmentation of DNRME’s existing water treatment plant with Heritage Minerals water treatment to boost treatment rate to 1,000ML/year for the initial four years;

- Tailings produced from the first two years of Heritage Minerals operation will be discharged into the deepest part of the OCP while OCP water level is dropped and the TSF dam wall is constructed;
- Tailings will be discharged into the new Sandstone Gully TSF once completed;
- Some extraction of historic tailings from the OCP;
- Increase in project workforce numbers up to 80 personnel;
- No immediate plan for tourism access to the mine operating areas of the mining leases but potential to support Rockhampton Regional Council and other tourism stakeholder projects;
- Reduced impact on existing mine site heritage listed structures;
- Some reconfiguration of planned internal haul routes;
- Increase in daily delivery truck movements for reagents and supplies;
- DNRME require 20t/day of truck delivered quicklime (1 truck per day) for their water treatment plant. Heritage Minerals will require about 100t/d (5 truckloads) of quicklime;
- Some change in post mine rehabilitation landforms;

3.0 MOUNT MORGAN MINE SITE BACKGROUND

The Mount Morgan Mine site is located at the township of Mount Morgan, 32 kilometres south-south west of Rockhampton, in Central Queensland. The mine site is adjacent to the Dee River which flows between the mine and the town. The Dee River then flows into the Don and Dawson Rivers and then into the Fitzroy River.

Mining commenced at the Mount Morgan site in 1882 to recover gold but considerable quantities of silver and copper were also produced. During the 108-year life of the mine, approximately 8.3 million ounces of gold, 1.2 million ounces of silver and 387,000 tonnes of copper was mined and recovered from 50 million tonnes of ore from underground and open cut operations. The mine closed in 1990.

Between 1886 and 1927, Mount Morgan Gold Mining Company Limited controlled the mining leases. The company went into liquidation in 1927 following a disastrous underground fire and deliberate flooding of the workings in 1925. The company was reformed as Mount Morgan Limited (MML) in 1928. MML began open cut mining in 1932 and by the time mining ceased in 1981, more than 145 million tonnes of ore and overburden had been mined. Between 1982 and 1990, a tailings re-treatment process operated whereby 26.7 million tonnes of tailings were treated and placed in the Mount Morgan open cut.

Because of its historical significance to the State of Queensland, a part of the Mount Morgan mine site became heritage listed with the proclamation of the Queensland Heritage Act in 1992.

In 1993, the mine leases were assigned to the Joint Venture of Perilya Mines NL and Aumin Technology and Development NL. The Joint Venture conducted an exploration and investigation program aimed at defining a viable mineral resource while being indemnified against environmental impacts of previous mining. The Joint Venture ceased exploration activities in 1998. In 2000, the State called for Expressions of Interest for mining companies interested in further re-processing of mined waste rock and tailings which would complement rehabilitation. Moonraker Limited signed an agreement with the State in 2000 and commenced evaluation of the mineral resources. This agreement and the mining leases were subsequently transferred to Norton in 2004 who conducted further evaluation work. Carbine entered into a concurrent farm-in agreement with Norton in 2013 but withdrew from the project in 2018 for both technical and commercial reasons.

In September 2020, Heritage Minerals acquired ownership of the mining leases after conducting due diligence assessment including drilling, metallurgical testing, engineering, and commercial assessment. A Stage 1 feasibility assessment was completed in April 2020. Additional resource definition and project optimisation studies are in progress.

Heritage Minerals Pty Ltd is a private company established to reprocess the historic Mount Morgan tailings.

4.0 PROPOSED RESOURCE ACTIVITY

Initial focus is to recover gold and copper from historic tailings within the Mount Morgan mining leases. The Stage 1 FS completed by Heritage Minerals detailed the potential economic viability of mining and re-treating 10 million tonnes of historic tailings over a mine life of 5.5 years. In addition, there are significant tailings in the OCP and other historical tailings and waste dumps within the mining leases considered to be exploration targets that could augment and extend the mine life beyond 5.5 years. Test work has enabled the development of a mineral processing flowsheet that incorporates extraction of copper and gold via a resin-in-pulp circuit. Heritage Minerals are not planning to extract pyrite. This means pyrite will not be trucked to Gladstone as Carbine proposed.

The gold and copper planned for extraction occur in the historic mine tailings dumps at Mundic Gully, No. 2 Mill tailings dam, Shepherds tailings dam, Red Oxide, Sandstone Gully and in the former open cut pit. The Red Oxide tailings underlie slag dumps produced from historical roasting processing circuits (Appendix 3 Map).

Processing facilities will be located within the mining leases in the vicinity of DNRME's water treatment plant. Although closer to residential locations, direct line of sight and noise impact will be partially mitigated by topography. (Appendix 1 Photo: Planned Processing Plant Location).

A Development by the State Heritage approval that incorporated Carbine's mine development proposals was approved on 7th April 2017. Conditions of approval include archival recording of landscape and heritage structures within the heritage listed area. There is also a requirement for Heritage Minerals to enter into a Heritage Management Agreement with the State. Landscape archival recording has been completed and an Archaeological Management Plan is in preparation.

Tailings in the open cut pit and sulphide bearing mullock dumps (Grasstree Gully, B, C, K, Q, and Horsepaddock Dumps) are known to contain mineral bearing sulphides that may form part of future mineral resources and re-processing activities.

Other waste dumps (Shepherds, Airfield East and West, Western Dump and the historic blast furnace and reverberatory furnace slag dumps contain low levels of gold and copper which may form part of future mineral resources (Appendix 3 Map). Slag dumps were placed over the top of mineralised "Red Oxide" tailings discarded during the early years of mining the non-sulphide bearing zones in the upper portion of the mineral deposit.

Other locations within the mining leases that potentially contain historic tailings or sulphide bearing mineralisation may form future exploration targets and mining resources.

MINING (RESOURCE EXTRACTION)

Mineral resources are located on granted mining leases held in the name of Heritage Minerals who will be the project operator. Mineralised tailings will be mined by excavator and taken by truck to a ROM stockpile. The slag overlying the Red Oxide tailings is hard and compact. If the Red Oxide tailings are to be extracted in future, occasional blasting may be required to break up the material in-situ so it can be bulldozer ripped or removed by excavator. Haul roads will be constructed for truck and service vehicle movement. Existing roads will be used wherever possible and upgraded to ensure safe truck haulage. Overburden will be progressively removed

during mining operations. Most of the overburden is in the Mundic Gully and Red Oxide areas. Tailings at 2 Mill and Shepherds have mine waste overburden that may be several metres thick. This will be removed and stored for post mine rehabilitation.

The mining sequence proposed is as follows:

- Years 1 to 2: No. 2 Mill Tailings and remnant tailings in Sandstone Gully;
- Years 2-5: Shepherds Tailings;
- Years 3-4: Mundic Tails;
- Years 3-5: Red Oxide;
- Years 5+: Open Cut Tailings (potential) although there may be some earlier mining depending on the scheduling sequence.

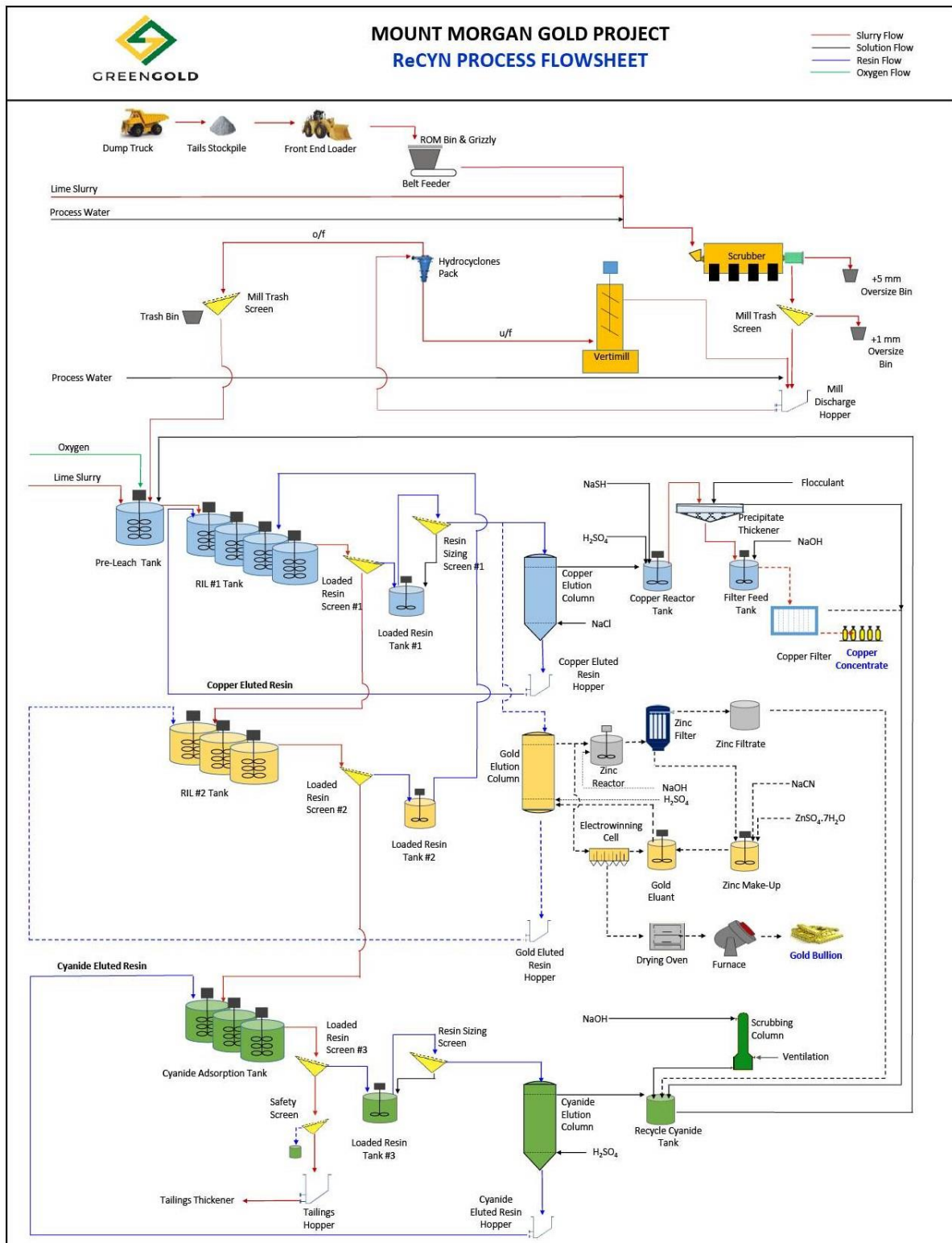
Mining will be undertaken within a 12 hour/5.5-day week to minimise noise impacts.

MINERAL PROCESSING

The flowsheet is summarised in below. The “ReCYN” process is used for copper and gold extraction and cyanide recovery. A thickener has been added to the final tails flow to maximise reclamation of process water and reduce the lime consumption.

The “RECYN” process is the name given to a specialist technology, which is used for the recovery of cyanide and dissolved metals from precious metal plant process streams. The process is based on the use of a functionalized resin bead, pre-treated to allow the dual duty of recovering free and complexed metal and cyanide ions from solution with a high degree of efficiency.

Mineral processing will be on a 12hr/365 day/annum basis. The process plant location is well shielded from residential areas by mine landforms that will reduce noise impacts.



Flow Sheet for Gold and Copper Recovery

FUTURE EXPLORATION, MINING AND REHABILITATION

The historic mining operation mined 143 million tonnes of rock and ore during its 108-year mine life. This was made up of 93 million tonnes of rock waste and 50

million tonnes of ore. Many of the waste dumps on the mine site contain low grade mineralisation of sulphide minerals in the form of pyrite that produce Acid Mine Drainage (AMD). Of the 50 million tonnes of ore processed, approximately 40 million tonnes of tailings were discarded on the mine site. The tailings contain acid producing sulphides when exposed to air and water. The sulphide bearing waste rocks in the overburden dumps and the tailings that were deposited in the OCP during the 1980's constitutes a potential mineral resource that hasn't been fully evaluated. In addition, there are areas on the mine site where AMD indicates sulphide contamination exists. These areas are also potential mineral resources that could be evaluated for future mining potential.

The Mount Morgan gold and copper bearing ore body was one of the richest in the world at the time of former mining. Although there has been a considerable amount of exploration drilling within the mining leases, new exploration technologies and concepts have developed over the last 20 years since exploration ceased. There is potential for future exploration and drilling activity to take place within the mining leases. Heritage Minerals are further defining and optimising these Resources to Mining Reserves.

All areas mined by Heritage Minerals require will rehabilitation in accordance with Environmental Authority conditions and conditions as stated in the agreement with the State.

Table 1: Mount Morgan Tailings JORC 2012 Mineral Resource Summary

Area	Type	Category	Tonnage (Mt)	Gold (g/t)	Gold (Koz)	Copper (%)	Copper Metal (t)	Silver (g/t)	Silver Metal (kg)	Sulphur (%)	Pyrite Equiv. (wt %)
No 2 Mill	Sulphide	Indicated	2.71	1.11	97	0.12	3,184	1.14	3,078	13.7	25.6
	Oxide	Indicated	0.12	0.80	3	0.05	55	1.80	207	4.0	
Mundic Gully	Sulphide	Indicated	1.70	1.91	104	0.17	2,822	0.90	1,533	10.5	19.6
	Sulphide	Inferred	0.02	1.86	1	0.24	40	1.24	21	10.6	19.9
Shepherds	Sulphide	Indicated	4.83	0.84	131	0.17	8,195	1.42	6,889	12.4	23.2
Red Oxide	Oxide	Indicated	0.83	2.17	58	0.30	2,495	0.60	499	0.6	
	Oxide	Inferred	0.03	2.05	2	0.29	85	0.58	17	0.5	
Sandstone Gully	Sulphide	Inferred	0.25	0.85	7	0.07	175	1.20	301	12.0	22.4
	Oxide	Inferred	0.02	0.85	1	0.07	14	1.20	24	2.0	
In-Pit Tails	Sulphide	Inferred	26.67	0.52	446	0.07	18,672	1.38	36,884	11.3	21.1
Total Indicated	Total Indicated	Indicated	10.19	1.20	394	0.16	16,750	1.20	12,207	11.4	
	Sulphide	Inferred	9.24	1.12	333	0.15	14,200	1.24	11,500	12.4	23.2
	Oxide	Indicated	0.95	2.00	61	0.27	2,550	0.74	706	1.0	
Total Inferred	Total Inferred	Inferred	26.99	0.53	456	0.07	18,986	1.38	37,246	11.3	
	Sulphide	Inferred	26.94	0.52	454	0.07	18,887	1.38	37,205	11.3	21.1
	Oxide	Inferred	0.05	1.56	2	0.2	99	0.84	41	1.1	

(Carbine Resources Limited ASX announcements 18 July, 2016, 27 July, 2016, 1 Aug, 2016 and 9 Aug, 2016.
Rounding errors can occur.)

Table 2: Carbine 2016 Exploration Target Summary

Category	Drillhole Number	Low Range					High Range				
		Tonnes (kt)	Au Grade (g/t)	Au (koz)	Copper %	Sulphur %	Tonnes (kt)	Au Grade (g/t)	Au (koz)	Copper %	Sulphur %
Oxide Waste Dumps	54	290	1.8	16	0.1	2	600	2.3	40	0.1	2
Oxide Slag Dumps	5	280	1.0	9	0.4	1	1,000	0.8	26	0.6	1
Oxide Tailings Dumps	34	220	1.0	7	0.1	3	700	0.9	22	0.1	3
Total Oxide	93	800	1.3	32	0.2	2	2,300	1.2	88	0.3	2
Sulphide Waste Dumps	34	430	1.2	17	0.1	12	600	1.4	30	0.1	13
Sulphide Tailings Dumps	10	660	1.0	22	0.1	9	2,000	1.2	77	0.1	12
Total Sulphide	46	1,100	1.1	39	0.1	10	2,600	1.3	106	0.1	12
Total Sulphide and Oxide	139	1,900	1.2	70	0.2	6.7	4,900	1.2	190	0.2	7.5

(The potential quality and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of the Mineral Resource. Rounding Errors will occur.)

5.0 PROJECT PERMITTING

PRIORITY LIVING AREA

The former Mount Morgan Mine site and the mining leases covering Heritage Minerals Project area fall within the Mount Morgan Priority Living Area included in the 2015 Rockhampton Region Planning Scheme (RRPS) (western boundary shown on Application Item 1 Appendix map). This planning scheme has recognised the impact of past mining and the importance of future mining. In the RRPS, the mine site is identified as “Mine Precinct – Limited Development Constrained Land”. In particular, the **RRPS Strategic Framework Section 3.3.13 Element – Specific use** states the following:

- (1) “The Mount Morgan mine will continue to provide for tourist related uses. Further expansion of these uses is supported, provided that natural and environmental constraints posed by the site can be mitigated. The reuse of the site for mining and processing is supported provided that impacts on the

surrounding community, scenic amenity and the environment are properly managed.

3.8.5 Element – Extractive and mineral resources

- (1) *The reuse of the Mount Morgan mine tailings is supported provided that sensitive land uses within Mount Morgan, scenic amenity and environmental values are not impacted upon. “*

Appendix 2 consists of Table 1 and Table 2 that list PLA assessment criteria with a response to demonstrate the proposed project will satisfy prescribed solutions that: *“The activity (a) is unlikely to adversely impact on development certainty – (i) for land in the immediate vicinity of the activity; and (ii) in the PLA generally; and Carrying out the activity in the priority living area, and in the location stated in the application, is likely to result in community benefits and opportunities, including for example, ongoing financial and social benefits to the community”.*

The Rockhampton Regional Council indicated ongoing strong support for Heritage Minerals tailings re-treatment project providing Heritage Minerals has obtained the required environmental, heritage, mining and road use approvals in addition to satisfying the criteria stated in the RRCPS above.

The status of Heritage Minerals regulatory approvals is provided below:

MINING LEASES

The project occupies 30 granted mining leases as detailed in Application Item Appendix 4 and shown in the Application Item Appendix 4 map for the original PLA application. All mining leases have an expiry date of 31 August 2025. Leases can be renewed for additional duration prior to expiry.

At the request of DNRME and RRC, portions of the mining leases that included the surface mining rights for the Fire Clay Caverns (ML5635), the historic General Managers Residence (ML5660) and the historic Old Gold Room (ML5602) were surrendered to make provision for future tourism proposals by these parties. This is made up of a 14.33 hectare surface area reduction from 35 hectares for ML 5635, a 5.07 hectare partial surrender from 84.5 hectares for ML 5660 and a 24.6 hectare partial surrender from 121.1 hectares for ML 5608. The mining leases have been transferred to Heritage Minerals with the reduced areas of mining lease.

Mining leases are held in the name of Heritage Minerals Pty Ltd.

LANDOWNER COMPENSATION AGREEMENTS

The real property descriptions and details of ownership, land classification, current use, proposed resource activity per lot and area of impact underlying the project mining leases are detailed in Application Item 2 Appendix 2 (Proposed Activities per Lot and Area of Disturbance) for the original PLA application.

There are 73 land titles underlying the Mount Morgan mining leases. Ownership is as follows:

Private Term Lease: 1 title

Rockhampton Regional Council Titles: 3 titles

State Land: 67 titles

Easements: 2 titles

Within the Mount Morgan PLA and within the mining leases, these titles cover an area of 653 hectares (now approximately 611.72 hectares with the partial mining lease surrenders). The mine lease owner has satisfactorily completed compensation agreements with the relevant landowners as required under the MRA. These agreements are registered against the mining titles (*agreements submitted as Commercial-in-Confidence as part of the original PLA application*).

ENVIRONMENTAL AUTHORITY

Heritage Minerals holds EPML00433013 for the Mount Morgan Mine.

<https://apps.des.qld.gov.au/env-authorities/pdf/epml00433013.pdf>

Heritage Minerals feasibility evaluation has updated components of the project that require amendment to the existing EA. Pre-lodgement meetings have been held with DES in September 2019. Submission of the EA amendment application is pending completion of the FS. This will now proceed based on the current planned mining activity. The current EA has provisions that stipulate criteria for mine rehabilitation, dust, noise, vibration, odours, water quality, waste management and financial assurance. This includes criteria that relate to “sensitive places” including schools, dwellings, residential allotments, motel/hotels, educational institutions, public parks or gardens, and places used as workplaces. Heritage Minerals Plan of Operation and the Progressive Rehabilitation and Closure Plan when completed, will have to detail how planned mining activity satisfies EA conditions.

HERITAGE

Parts of the mine site, including areas to be incorporated into Heritage Minerals operational areas, are within the area listed on the Queensland Heritage Register, (Site ID600751) the Register of the National Estate (4/3/189/0004/1) and the National Trust of Australia (Qld) (MTM2/4). A Conservation Management Plan was prepared in 2002, however, there has now been significant deterioration of some of the heritage listed buildings and structures to the point where they represent a serious safety and health risk to site visitors and site operational staff. The presence of environmental contamination producing AMD is considered a health risk that will be ongoing whilst sulphide bearing minerals are present in mine wastes. DNRME submitted a “Development by the State” application to address these risks. The application included impact on landscape from potential mining activity within the heritage listed area. The application was approved on 7th April, 2017 (CHDS06457117).

PYRITE CONCENTRATE ROAD HAULAGE

Heritage Minerals have no plans to produce pyrite from the tailings and no plan to haul concentrate to the Port of Gladstone.

6.0 CURRENT LAND USE

The State of Queensland owns the land underlying the mining leases in the location of Heritage Minerals planned mining activity. The land is heavily impacted from historic mining with un-rehabilitated mine waste dumps and contaminated water impoundments. It is considered by many to be one of Australia’s most contaminated legacy mine sites. The site is managed under DNRME’s Abandoned Mine Land Program with active environmental remediation activities including contaminated water seepage interception, contaminated water treatment, heritage building maintenance and land and infrastructure management. The adjacent Dee River that runs through areas of the mining leases is heavily contaminated for up to 20 kilometres downriver from the mine site. As a watercourse, the Dee River is State owned land. Rockhampton Regional Council (RRC) owns land that forms parts of road reserves and other reserve land. RRC land within the mining leases forms part of the legacy mine site that contains waste dumps that are a source of AMD contamination. There is a portion of a private land lease underlying mining leases ML5633 and ML5589 to the south west of the mine site. The portion that underlies the Shepherds Tailings Dam is fenced off to prevent cattle entry.

DNRME has a site management team in addition to environmental scientists, management and support staff dedicated to project management of the Mount Morgan Mine site as an Abandoned Mine. Part of the former mine site is heritage listed. Mine site tours no longer operate at the mine site. The Fire Clay Caverns that contain dinosaur footprints, the former General Managers Residence and the Old Gold Room are no longer within Heritage Minerals mining leases.

SURROUNDING LAND USES WITHIN THE PRIORITY LIVING AREA

Residential and rural residential land lies adjacent to the historic mining leases across the Dee River to the east. The town grew adjacent to the mine over 134 years as the mine developed (similar to many historic Australian mining towns that grew within sight of the mining operations). The Mount Morgan town contains a number of “sensitive places” as defined in the EP Act including schools, dwellings, residential allotments, motel/hotels, educational institutions, public parks or gardens, and places used as workplaces. The Burnett Highway runs through the town of Mount Morgan. Surrounding land use to the east of the mining leases across the Dee River is composed of residential, rural residential and the commercial centre. The service centre of Mount Morgan is within 1 kilometre of Heritage Minerals closest planned operating area. Nearest residential areas are as follows:

2 Mill Tailings Mine Area: 300 metres

Shepherds Tailings Mine Area: 500 metres

Red Oxide/Mundic Area: 400 metres

Open Cut Pit: 1,100 metres

Mineral Processing Plant: 0.9km from nearest residential area (this location has landform shielding between the town and the process plant site). This is a different location from that proposed by Carbine. It is adjacent to DNRME’s water treatment plant. It is the original general location proposed by Norton as included in the current Environmental Authority.

Mount Morgan prides itself on the long community history associated with the mine. The former smelter stack “Big Stack” is considered the icon for the town. Many of the former mine workers still live within the Mount Morgan community. According to the RRC Mount Morgan Population and Household Forecasts for 2016-2036 Report, Mount Morgan District’s population for 2020 is expected to be 3,064 and in 2036 is predicted to be 3,187. In 2016, the dominant age structure for persons in Mount Morgan District was ages 55 to 59, which accounted for 8.9% of the total

persons. The largest increase in persons between 2016 and 2026 is forecast to be in ages 75 to 79, which is expected to increase by 76 and account for 6.2% of the total persons. The largest 5-year age group in 2026 is 65 to 69 years, with a total of 255 persons.

The town's museum, Visitor Information Centre and other points of tourist attraction have close association with the former mine. Once feasibility has been completed, Heritage Minerals will contact key stakeholders to discuss the proposed project. They will also make project information available to the community prior to any requirement for public notification for either Regional Interests Development or Environmental Authority permitting. Heritage makes project information available to the community through regular updates published in the Mount Morgan Argus (as illustrated below). Heritage Minerals intend to further engage with Rockhampton's Morning Bulletin, presentations to Rockhampton business development associations, Mount Morgan Promotion and Development meetings, technical presentations press releases and local media interviews. Heritage Minerals has a Community and Stakeholder Engagement Plan and maintains a register of community and stakeholder consultation.

MOUNT MORGAN ARGUS

PROUDLY BROUGHT TO YOU BY MOUNT MORGAN PROMOTION & DEVELOPMENT INC. ABN 21 391 526 801 | 1 RAILWAY PDE, MOUNT MORGAN, Q.4714, AUSTRALIA.



Rocky Road...Page 2



Buckling Up...Page 4



VIC to Reopen...Page 13

RENEWED ACTIVITY AT HISTORIC MINE SITE



Photo courtesy Heritage Minerals Pty Ltd

Heritage Minerals Pty Ltd are currently evaluating the gold-rich tailings from the historic Mount Morgan Limited mining operation. They are finalising a feasibility study for the extraction of gold and copper using innovative, cost-efficient technology for the recovery of these minerals. After re-processing, the tailings would be returned to the open-cut pit that will eventually be de-watered and rehabilitated. There are no

plans to extract pyrite. This means there are no plans to truck mineral concentrate to Gladstone.

Over the past twelve months, Heritage Minerals have been looking at simplifying processing and mining options to keep capital costs to a minimum. They have undertaken drilling programs to confirm mineral resources and an extensive testwork programme to optimise the processing plant design. Heritage Minerals

believe that with their innovative technology, reduced project costs and focus on just gold and copper recovery, the project economics are more robust than those of previous project proponents.

The feasibility phase is expected to be completed by early July and any mining decision would be subject to updating existing environmental, heritage development and regional interest

Continued on Page 2

7.0 FUTURE LAND USE

Tourism

Heritage Minerals planned activity will affect approximately 15% of the total land disturbed from the historic mining activity. The Mount Morgan mine site will remain a source of AMD because of the un-rehabilitated areas outside Heritage Minerals planned activity. The obligations of Heritage Minerals (as the mining lease owner) are defined under agreement with the State. Heritage Minerals have a responsibility to comply with an Environmental Authority that includes rehabilitation obligations post mining. Historic environmental and heritage management legacies outside Heritage Minerals operating areas remain a responsibility for the State.

There is recognition in various Regional Development Plans - Central Queensland Tourism Opportunities Plan (2009-2019), “Dig the Tropics” initiative, the Capricorn Destination Tourism Plan 2014 and the Rockhampton Region Planning Scheme (2015), that tourism will have a significant role in Mount Morgan’s future with an expected increase in business growth as tourism develops. Heritage Minerals supports the regional tourism aspirations for Mount Morgan and will work with tourism stakeholders to support projects that align with Regional Development Planning Schemes.

Environmental Remediation

Heritage Minerals currently holds an Environmental Authority for the project that covers the drilling and evaluation phase of the project. Heritage Minerals is preparing a submission to amend the existing EA in line with current project plans.

Water quality for downstream landowners has been a concern for many decades and DNRME has worked with stakeholders to improve downstream water quality in partnership with organisations such as the Fitzroy Basin Association and the Wowan Dululu Landcare Group.

Removal of AMD contaminant sources and remediation of Heritage Mineral’s operational areas is expected to leave the Mount Morgan mine site in an improved environmental condition with reduced levels of contamination in runoff. It can be expected that in the order of 2 million tonnes of acid producing pyrite will be removed from site stream drainage systems and relocated to the TSF or the open cut pit where it will be encapsulated following final rehabilitation. This will have a significant positive impact on water quality in the Dee River with benefit for the downstream landowners and the community.

Future Land Use without Resource Development Activity

The legacy environmental and heritage management responsibility for the historic Mount Morgan Mine site was transferred to the State when MMMML ceased its operations in 1990. The mining leases were retained with a vision that future mining of remnant mineral resources could play a part in future mine rehabilitation and heritage management thereby reducing the State's management burden in addition to producing mining royalties.

Several companies have in the past evaluated mining options for the gold, copper and pyrite bearing tailings. Due to either financial, corporate, or technical reasons, none of these projects have eventuated. With current high gold price, and the development of innovative processing technology, Heritage Minerals are currently finalising a feasibility study that may lead to project development.

Without the presence of a mining company to contribute to mine site rehabilitation and heritage management, the State will continue to bear the full responsibility for the environmental and heritage management legacies of past mining. In addition, if large scale rehabilitation was to be undertaken by the State in the future, there is a possibility that remnant mineral resources will be sterilised depriving the State of future royalty payments and the loss of business and economic development opportunities for the community directly associated with mining activity.

8.0 COMMUNITY IMPACT AND MITIGATION

Mount Morgan town residents may be impacted by increased noise, vehicle movement and a changing vista of the mine site during construction and operation.

These impacts are regulated under the Environmental Protection Act 1994, the Mineral Resources Act 1998 and the Queensland Heritage Act 1992. Heritage Minerals will have to satisfy any regulatory conditions imposed under the permitting application process under these Acts in addition to satisfying the requirements under the Regional Planning Interests Act 2014.

In general, tailings mining is not expected to produce dust as the tailings are moist and soft. Dust suppression will be required if dust limits exceed EA criteria. Blasting may be required to facilitate the breakup of the slag dump overlying Red Oxide tailings if future mine plans includes extraction of these resources. This would be minimal and will not involve open face blasting. Further detailed technical analysis for the best option for breaking and mining the slag material is required if mining of these resources is included in future plans. Noise and dust suppression techniques

will be implemented as required. Vibration limits are set in the EA. The process plant does not incorporate smelting which was a source of odour irritant during the former mining operation. Slag is available for haul road surfacing as was used in the former mining operation. Treated water could be used for dust suppression if required. Mining will only be undertaken during daylight hours on a 5.5 day a week basis to reduce noise from heavy plant equipment. A Plan of Operations and a Progressive Rehabilitation and Closure Plan must be prepared for regulatory approval prior to site work commencing. This plan sets out what actions the operation will take to address environmental conditions set in the EA. Carbine's information sessions held within the community demonstrated that job opportunity and business development opportunity were a key concern for residents. Heritage Minerals will draw from a local workforce living within the surrounding community.

Tables 1 and 2 in Appendix 2 address the specific impact criteria required as part of this amendment report.

9.0 DEMONSTRATION OF STAKEHOLDER CONSULTATION

Once feasibility has been completed, Heritage Minerals will contact key stakeholders to discuss the proposed project. They will also make project information available to the community prior to any requirement for public notification for either Regional Interests Development permitting or Environmental Authority permitting.

Heritage Minerals planned mining areas and possible future impact areas are unchanged from those detailed by Carbine in the Regional Development Interest application as approved.

Most stakeholder concern regarding Carbine's project related to pyrite concentrate truck haulage from the mine to Gladstone. This is not planned for the Heritage Minerals project.

Heritage Minerals is guided by a Stakeholder and Community Engagement Plan that is updated periodically. A record of stakeholder contact and engagement is maintained. Company contact details are available on Heritage Minerals's website and have been distributed throughout the Mount Morgan community. The EA requires holder to maintain a Register of Complaint. There have been no complaints logged to date.

MOUNT MORGAN COMMUNITY

Carbine identified 25 organisations or community groups as key project stakeholders that they maintained contact with. At the request of the RCC Mayor, Heritage Minerals have kept a low profile to avoid community disappointment if the project does not proceed.

Following Feasibility, key announcements will be made. Approval of this RDI PLA amendment which has a smaller area of influence to Carbine's is considered a major milestone in the path to Feasibility.

Contact will be maintained in accordance with Heritage Minerals's Stakeholder and Community Engagement Plan.

ROCKHAMPTON REGIONAL COUNCIL

- 2019 July: Heritage Minerals CEO and Company Secretary gave a project presentation to RRC Councillors and Mayor; it was at this meeting that Heritage Minerals were requested by the Mayor to maintain a low key approach to community engagement until the project had certainty of proceeding;
- Project updates are provided by email or as requested.

LANDOWNERS

- *DNRME*
 - Heritage Minerals engages with DNRME's Abandoned Mine Land Unit on a daily, weekly, monthly basis;
 - Periodic meetings are held with DNRME in Brisbane, Rockhampton or at the Mount Morgan mine site to discuss issues as required;
 - Under the agreement with the State, Heritage Minerals site activities require prior approval by DNRME prior to activity commencing;
 - DNRME's State Land Asset Management group was advised of the original RDI application and a copy of the application was provided to them.
- *Rockhampton Regional Council*
 - As above

- *Landowners*
 - Direct contact with the only private landholder relevant for this application. Contact includes hosting a mine site visit to discuss project impacts;
 - Wowan Dululu Landcare Group is a group of off-site down river landowners impacted by Dee River water quality. Project updates are provided on an annual or as requested basis by direct informal meeting.

ROAD USE

Given there is no plan for extract pyrite from the tailings, there is no requirement of a Road Use Notification under the Mineral Resources Act relating to pyrite haulage to Gladstone.

TELSTRA COMMUNICATION TOWER EASEMENT

There is a Telstra communication tower easement located on RRC and DNRME land within mining leases ML5660, 5620 and 5635. There is a compensation agreement between Telstra, DNRME and RRC with respect to this easement. Direct contact was made by Carbine with Telstra's customer service land management company. However, given Heritage Minerals has no plans to access or utilise the easement, no consent is required.

APPENDIX 1

PRIORITY LIVING AREA RESOURCE

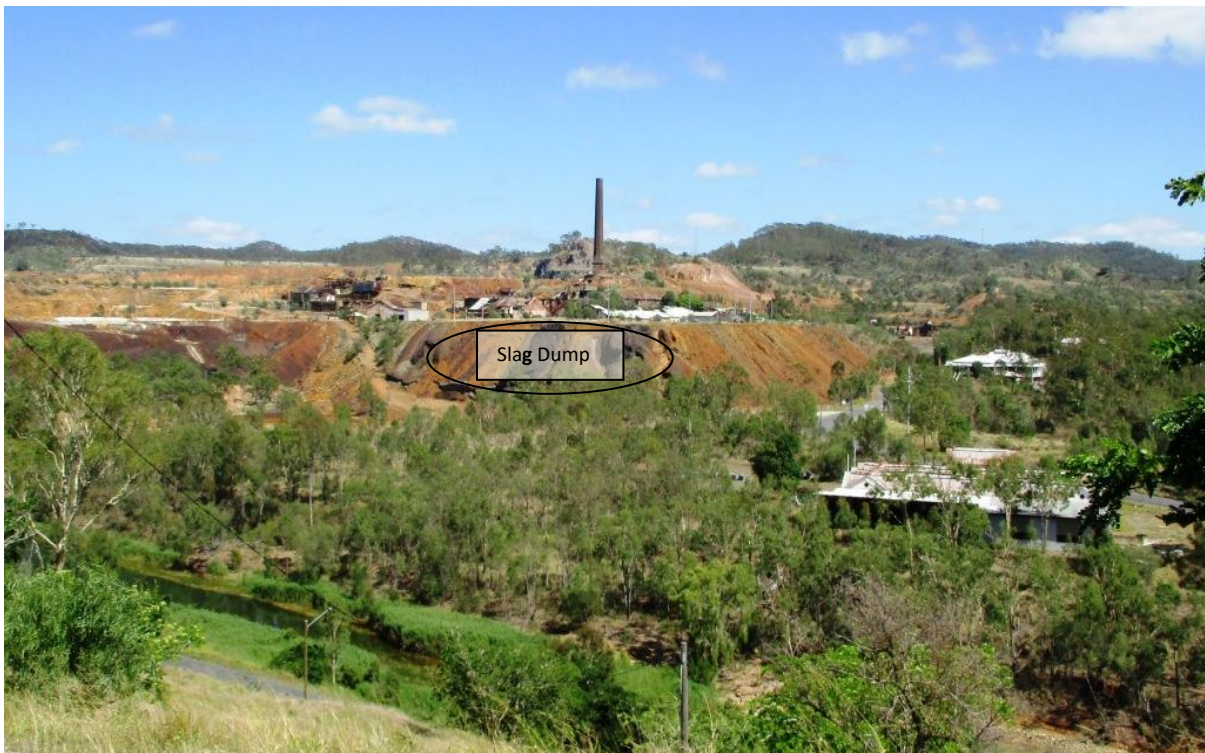
AMENDMENT

PHOTOS OF VISUAL IMPACT AREAS

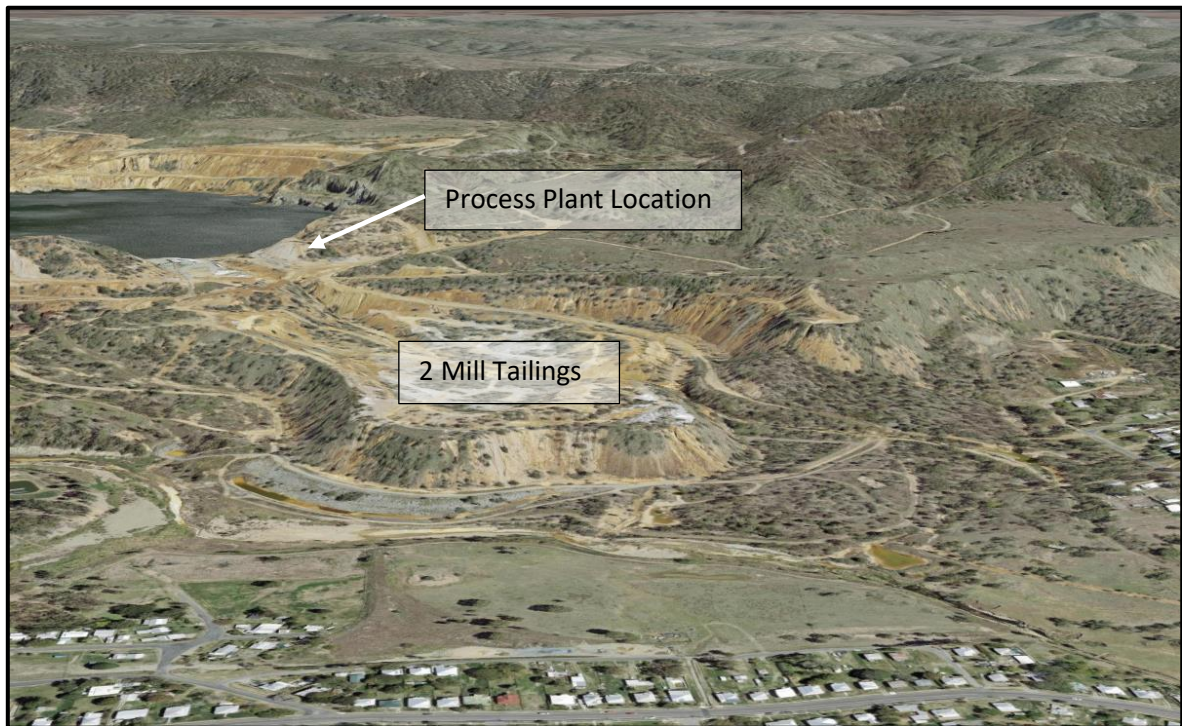
Photo of Mine Site from Mount Morgan Arthur Timms Lookout (photo by Heritage Minerals)



Photo of Mine Site showing areas of visual impact (photo by Heritage Minerals)



2 Mill Tailings with OCP in Background (photo by Heritage Minerals)



Shepherds, Sandstone Gully, Mundic, Slag/Red Oxide Tailings Locations



Photo of Planned Processing Plant Location (photo courtesy DNRME)

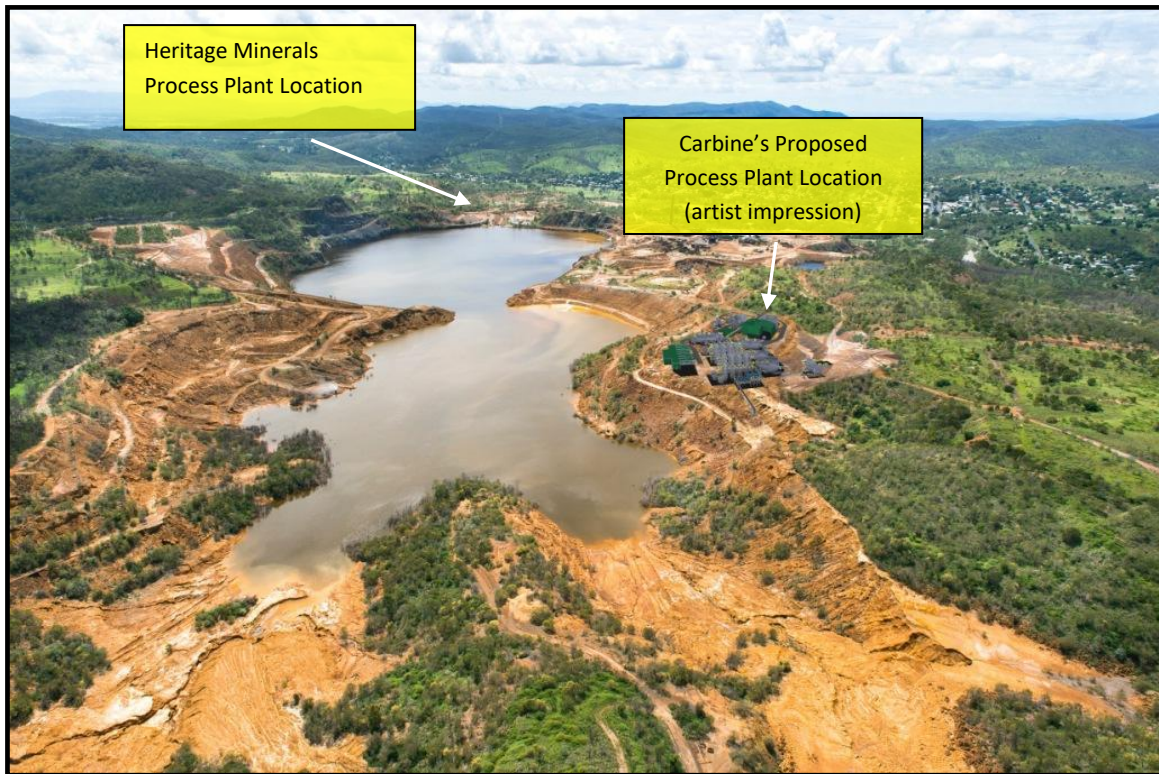
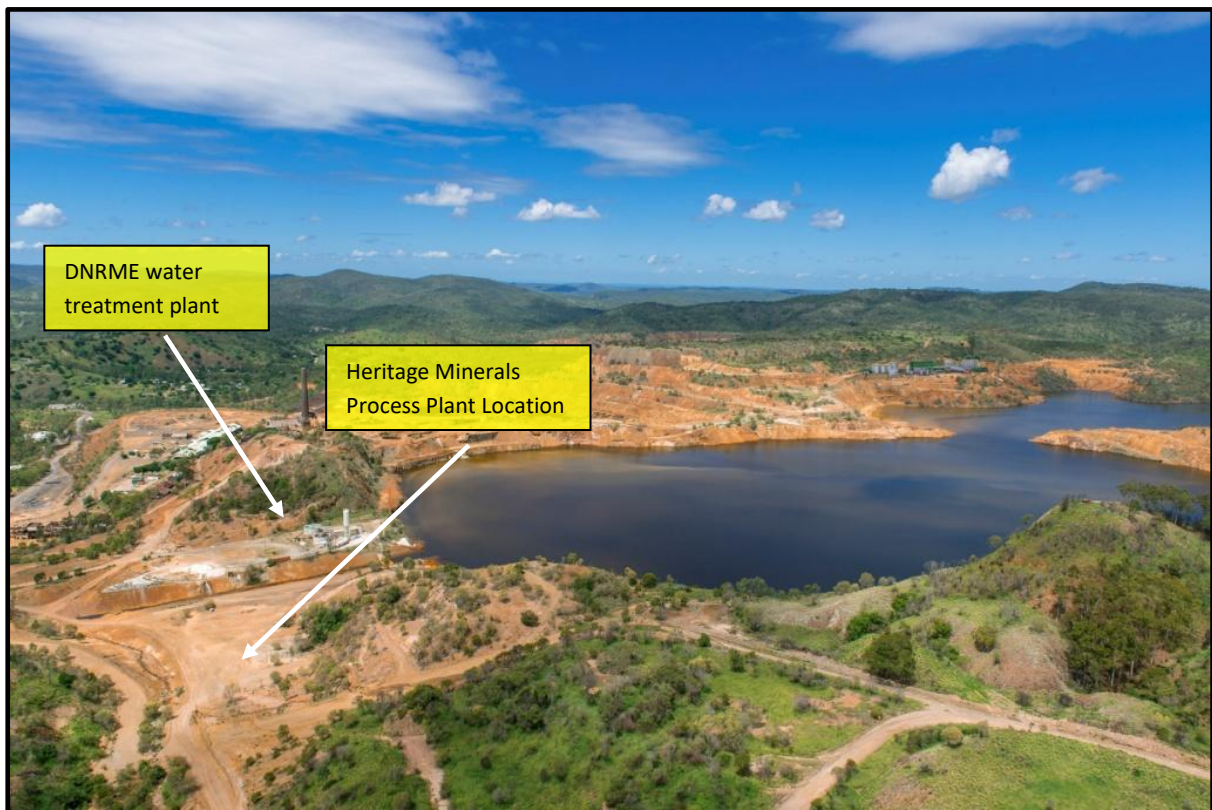


Photo of Planned Processing Plant Location (photo courtesy DNRME)



APPENDIX 2

PRIORITY LIVING AREA RESOURCE DEVELOPMENT APPLICATION

ASSESSMENT CRITERIA TABLES

TABLE 1

Priority Living Area	
Prescribed Solution Carrying out the activity in the priority living area, and in the location stated in the application, is likely to result in community benefits and opportunities, including, for example, financial and social benefits and opportunities. a) Is unlikely to adversely impact on development certainty – (I.) For land in the immediate vicinity of the activity; and (II.) In the PLA generally	
<i>Prescribed Solution</i>	<i>Response to Prescribed Solution</i>
<i>a. The economic and social benefits that will be associated with the additional workforce (during both the construction and operation phases)</i>	<p>Development will employ an estimated 120 people during construction with an ongoing workforce of 70-80 direct employees. Skilled and unskilled workers will be drawn from the local and regional population with no provision for fly-in fly-out or drive-in drive-out. Employees choosing to live in Mount Morgan, Gracemere, Rockhampton or other surrounding districts will add to the social fabric of the community. The Development will have a positive impact on the economy of the local region and the State through payment of rates, purchase of consumables, use of service industries and payment of royalties and taxes. It is estimated that Heritage Minerals direct operating expenditure will contribute approximately \$70 million/annum into the local economy for a period of 5 years under the current operating plan and over a 10 year period if the operating life can be extended to 10 years. Capital cost for construction is estimated to be \$75 million. This will largely be injected into the local economy where supply and service capability is available. Regional Planning schemes acknowledge Mount Morgan mine associated tourism as a driver for economic growth. Development is expected to support and enhance tourism through increased visitor numbers. Royalties paid to the State from mineral production are estimated to be between \$5 million annually for the duration of the mine life. Heritage Minerals will make other in-kind contributions to community activities during the period of operations.</p>

<i>Prescribed Solution</i>	<i>Response to Prescribed Solution</i>
<i>b. Direct contributions (monetary or in kind) towards:</i>	
<i>I. The improvement of trunk infrastructure (whether it be the capacity or the quality of the infrastructure)</i>	Upgrades will be made to the mine site power distribution infrastructure. These upgrades will provide a safer power distribution network that will assist DNRME future mine site activities.
<i>II. Public infrastructure (including public transport, health and education services, and cultural and social infrastructure such as parks, sport and recreation facilities, bikeways and walkways)</i>	End of mine life may provide an opportunity for the public use of rehabilitated State land for recreational/heritage activity that will support the long-term aspiration of Rockhampton Regional Council and the Mount Morgan community for tourism initiatives. The re-opening of the Mount Morgan mine site presents an opportunity to establish suitable long-term infrastructure at Mount Morgan to support the expansion of public services and facilities.
<i>III. A community initiative or facility (for example public artwork, community notice board, community centre).</i>	Heritage Minerals engages the Mount Morgan Promotion and Development group and the Rockhampton Regional Council and will investigate ways to support Mount Morgan's social, sports and community programs. Heritage Minerals has committed to producing a high-class documentary on the history of the mine.

TABLE 2

PRESCRIBED SOLUTION The activity a) Is unlikely to adversely impact on development certainty – (I) For land in the immediate vicinity of the activity; and (II) In the PLA generally	
Impact Criteria	Response to Prescribed Solution
<i>a. Result in the loss of land available for urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument</i>	The mine activity will be contained within existing granted mining leases on land owned by the State at the former Mount Morgan mine site managed by DNRME as an Abandoned Mine Land site. The 2015 Rockhampton Regional Council Planning Scheme (RRPC) defines the area that contains the activity as "Mine Precinct - Constrained Land". There are no future urban development plans identified in the RRPC and verbal advice from RRC is that there are no plans for future urban development within the area of the current Mount Morgan mining leases. Areas outside the mining lease and within the PLA generally will remain unaffected other than an expected improvement in Dee River water quality for landowners adjacent to the Dee River.
<i>b. Prevent or delay the orderly expansion of planned urban development as identified in a local government planning scheme, development scheme or other applicable statutory planning instrument (for example, the life of the proposed resource activity may delay access to land and preventing timely development)</i>	There are no planned urban developments in the RRPC that will be restricted by the activity and none identified in discussion with RRC. Post Heritage Minerals activity, the mine site will remain under the management of DNRME's Abandoned Mine Land Program.
<i>c. Result in the discontinuation of an activity that is lawfully in existence under a local government planning scheme, development scheme or other applicable statutory planning instrument</i>	Post Heritage Minerals mining activity including completion of rehabilitation obligations, the Mount Morgan mine site will continue to be managed by the State. Heritage minerals mining activity does not result in the discontinuation of other activities lawfully in existence under a local government planning scheme, development scheme or other applicable statutory planning instrument.
<i>d. Increase the cost of planned development (for example, changes to the existing landform could make the land more difficult or costly to develop)</i>	The former Mount Morgan Mine site will continue to be managed under DNRME's Abandoned Mine Land Program after Heritage Minerals mining activity ceases. Although Heritage Minerals has a regulatory obligation to rehabilitate its operational areas after mining activity, the historical environmental and heritage management legacies from former mining will continue to be managed by the State through DNRME's Abandoned Mine Land Program. Heritage Minerals post mine activity will make a substantial contribution to reducing the State's environmental and heritage management liabilities. Expected improvements in water quality in the Dee River downstream from the mine site may lead to enhanced utilisation of public areas adjacent to the river.

<i>Impact Criteria</i>	<i>Response to Prescribed Solution</i>
<i>e. Damage or otherwise affect existing infrastructure (for example, structural damage cause by subsidence)</i>	Heritage Minerals tailings re-treatment operation will not affect existing infrastructure. The proposed mining activity is essentially an environmental clean-up of historic tailings that are the source of AMD into the adjacent Dee River. Any changes to DNRME's site infrastructure will only be made in consultation with DNRME as set out in the existing agreement with the State. Heritage Minerals activity will considerably improve and upgrade existing mine site infrastructure.
<i>f. Result in additional demand on existing infrastructure or services (for example, town water)</i>	Town water won't be used for mining or mineral processing related purposes. There are adequate sources of water available within the mine site for Heritage Minerals industrial needs. Town water is already supplied to the mine site for drinking and emergency personal wash down purposes. Any augmentation will be within the existing allocation for the mine site. There is adequate existing electrical power available at the mine site. There is existing road infrastructure to the mine site. Any required road upgrades will be subject to negotiation with the relevant road authority.
<i>g. Negatively impact on the amenity of the PLA in general and on land in the immediate vicinity of the activity.</i>	It can be expected that increased activity at the former Mount Morgan Mine site will have some impact on residents and businesses within the PLA generally. Negative impacts could include noise, vibration, possible dust creation, vehicle movements and changes to the existing mine views. Noise, dust and vibration limits are regulated and are set in the Environmental Authority. Heritage Minerals is required to mitigate these potential impacts to conform to EA conditions. Mitigation Heritage Minerals proposes includes dust suppression water on light vehicle and haul roads, dust suppression at the process plant if required. Tailings are semi moist and are not expected to create dust. Heritage Minerals has located their process plant to a location that will not be visible to the town. Previous proponent, Carbine, commissioned a noise and vibration study to assess the construction and operational noise and vibration impacts on the amenity of the nearby identified sensitive receptors. Noise and vibration mitigation measures are planned to achieve predicted compliance with the relevant noise and vibration criteria. Tailings excavation will have restricted hours of operation (12 hr days 5.5 days per week). Any changes to heritage listed buildings and landscape are subject to the State Development Heritage Approval conditions and compliance with other heritage development approvals issued by the State. Although views of the mine site will change, the view will still be that of an historical mine site with heritage buildings including the iconic smelter stack still part of the visual

<i>Impact Criteria</i>	<i>Prescribed Solution</i>
	<p>landscape. Given Heritage Minerals tailings re-treatment at this stage only affects 4 tailings dumps; there will be little if any change to the historic mine waste dumps although that could change into the future if project economics make additional locations viable for re-working. Heritage Minerals post mine rehabilitation including revegetation of former tailings areas will enhance the green space views for parts of the site. Much of the current landscape falls within the heritage listed area and as such, is subject to State development heritage approval conditions. The Mount Morgan Mine site operated as a large-scale mining and processing activity from 1882 until 1990. The site has been the location of continuous exploration, project evaluation and mine rehabilitation activity since that time. This includes extraction of 500,000 cubic metres of tailings from the Dee River in 2006 by DNRME; operation of a water treatment facility since 2006; operating heavy vehicle and earthmoving equipment to support DNRME's rehabilitation projects; operation of seepage interception systems and large mine water evaporators and the movement of people and support activity for DNRME's abandoned mine land program on a daily basis. Previous proponent Carbine canvassed community concerns about impacts for their tailings re-treatment project at information sessions during community events (Mount Morgan Show Day and Wattle Day) and at a community information session held in December 2006. Heritage Minerals have kept the Mount Morgan community updated on the project status via an article in the Mount Morgan Argus newspaper. Under the existing permit conditions, there is a requirement to maintain a Complaint Register with the responses from the permit holder (Heritage Minerals).</p>

To determine the impact on amenity, the proposed activity should be evaluated against the following factors:	
Impact Criteria	Prescribed solution
<i>i. The compatibility of the activity with the surrounding activities</i>	<p>Mount Morgan mine operated between 1882 and 1990. The town owes its existence to the historic mining operation and the town identifies very strongly with its mining past through its tourist attractions and town festivals. Many thousands of people worked at or had connections with Mount Morgan's mining past. Although the town grew up in close proximity to the mine, feedback the previous proponent Carbine received from business and community organisations and from community information sessions showed strong support for a tailings re-treatment project.</p> <p>Heritage Minerals activity will make substantial improvements to the degraded environmental state of the former mine site and improving water quality in the Dee River by removing AMD forming sulphide minerals from the active drainages. Improving Dee River water quality is expected to enhance the amenity of residential and rural residential properties within the PLA adjacent to the Dee River. The RRPC has designated the location of the development activity as "Mine Precinct" and includes the proposed development activity of "mining and mineral processing".</p>
<i>ii. The nature and scale of the proposed activity and the extent of its intrusion on the predominant character of the surrounding area</i>	<p>Development takes place within existing granted mining leases at the site of former historic mining that has significant degraded environmental values. Post mine rehabilitation is expected to improve current contaminated site conditions and vegetation cover. DNRME have faced many challenges managing the former Mount Morgan Mine site as an abandoned mine. DNRME strategic plans for the mine site includes mining activity that supports environmental rehabilitation of the mine site. Heritage Minerals Project is compatible with and supported by DNRME as a way of implementing aspects of mine site rehabilitation without public purse expense. Rehabilitation activities including water management, tailings extraction and water treatment have been undertaken by the State since mine closure in 1990. Heritage Minerals tailings re-treatment project will not change the character of the surrounding area or the nature of current and historical activities that have taken place at the mine site. The RRC has recognised this and incorporated into their planning scheme provision for mining and mineral processing at the mine site providing impacts on the surrounding community, scenic amenity and the environment are appropriately managed.</p>

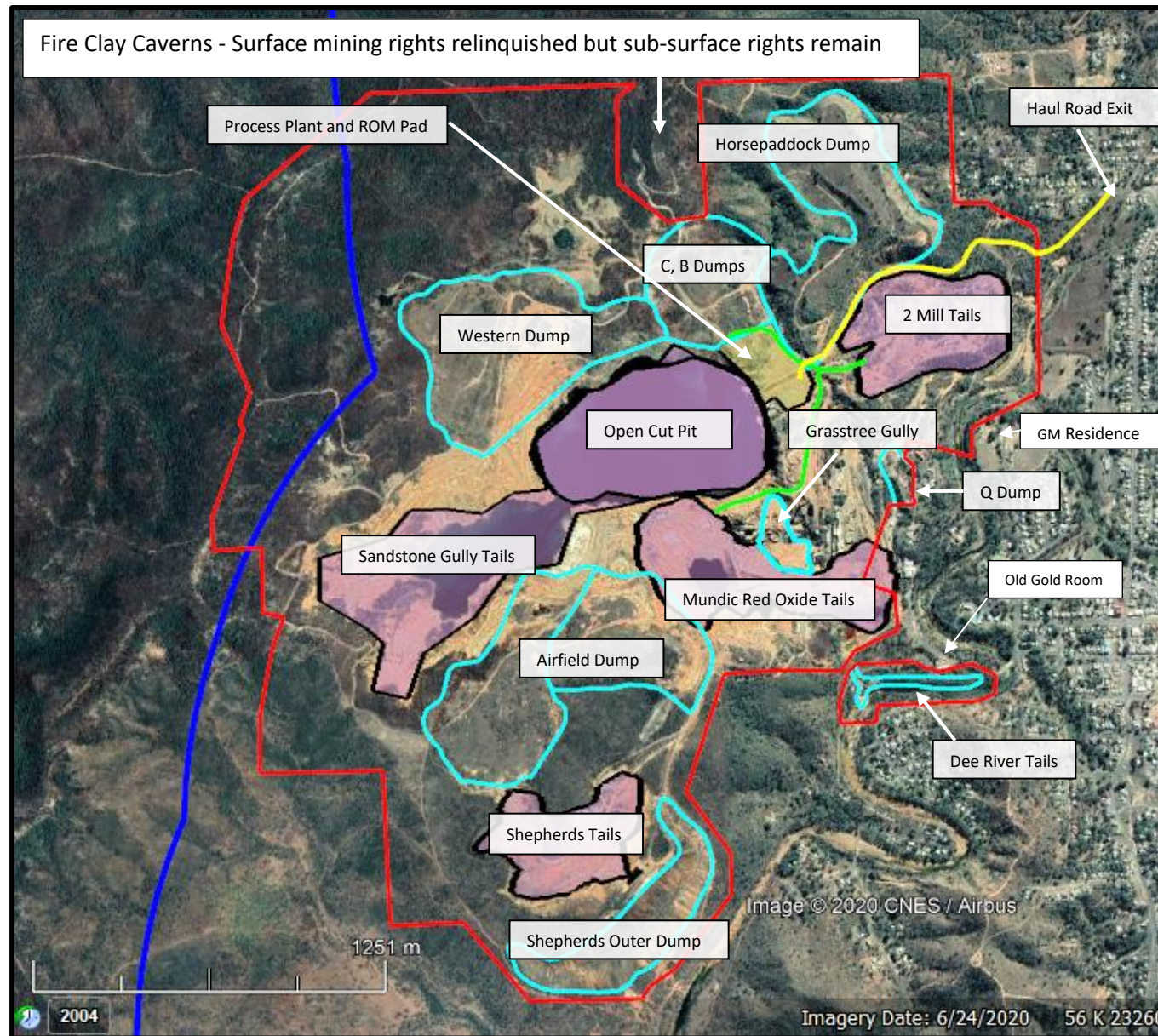
Impact Criteria	Prescribed Solution
	These aspects will be subject to conditions under a Heritage Management Agreement and an amended Environmental Authority. Carbine's Road Use Notification is no longer applicable for the project given there are no plans to truck pyrite concentrate to the Port of Gladstone.
<i>iii. The extent of change to the volume or nature of traffic on the roads in the PLA</i>	There will be higher levels of impact with increased traffic through Mount Morgan town during a 9-month construction period. Existing road traffic to the mine site currently includes contractor access and heavy truck movements. Periodic construction activity has taken place at the mine site in recent years without conflict. Any required road upgrades will be subject to negotiation with the relevant road authority.
<i>iv. The effect on the existing linkages between various parts of the PLA (for example, between residential areas and employment areas)</i>	Mount Morgan town developed because of the historic mine development. Town and mine are separated by the Dee River and Dairy Creek to the east of the mine site. Other surrounding areas are mostly designated rural. The RRPS has clearly identified the "Mine Precinct" from current and future residential areas. Currently, there is only one main access to the mine site (Meyenberg Crossing). Heritage Minerals will construct a separate project access by upgrading a route from Gordon Lane at Walter Hall to the process plant and mine administration location adjacent to DNRME's Water Treatment Plant. Heritage Minerals will provide suitable car parking and lay down areas for construction and workforce at the processing plant location. Work hours will be between 6:00am and 6:00pm so additional vehicle movement at the start and end of each day will be outside school hours and main business hours. Heavy equipment used during construction (cranes etc) will remain on site during construction and won't be part of daily traffic movement. On any given workday, DNRME already utilise the services of contract plant and equipment including lime tanker haulage for the water treatment plant on a daily basis when the plant is operating.
Impact Criteria	Prescribed Solution
<i>v. Changes to the outlook from key vistas, nearby sensitive uses (for example, residential areas) or public facilities (for example, parks) and tourist attractions</i>	Development will visually impact the view of the current historic mine site from residential and public access lookout locations. Tailings re-processing changes will not include significant alteration to major waste dumps. The character of the view will not change as it will continue to be that of a mine site with historic buildings and waste dumps. Changes to the historic landscape within the heritage listed area are subject to heritage development approval. Post mining rehabilitation will increase vegetation cover blending into a current

	bushland, rural background. The processing plant location is shielded from and will not be visible from the town.
<i>vi. The effect on the sense of place, local cultural heritage values and perceptions of safety</i>	Mount Morgan town identifies with the historic iconic smelter stack visible from the residential community and surrounding areas. This will not be impacted. The aesthetic character of the development area will not change from that of a mining and mineral processing location. Elements of historic structures will remain in addition to new mining and mineral processing structures. Any modifications to heritage listed structures and landscape is subject to conditions stipulated in the State Heritage Development approval. Public and community feedback from Carbine's community information booths during Mount Morgan Show Day and Mount Morgan Wattle Day reinforced Carbine's view that re-initiation of mining activity at the former mine site will strengthen community view of the importance of both historical and new mining activity to the pride the town has in its mining related identity. Heritage Minerals will enter into a Heritage Management Agreement with the State that will detail Heritage Minerals responsibilities for managing parts of the mine site that will be impacted by tailings re-processing. This agreement will include an Archaeological Management Plan that defines a process for managing significant archaeological finds that may be unearthed during tailings removal.
<i>vii. Visual prominence of the site</i>	Development will impact current visual aspects of some mine waste dumps and tailings dams. These are currently partially revegetated but remain a source of contamination. Post mine rehabilitation will improve vegetation cover and visual amenity. Post mine rehabilitation impact to historic landscape is subject to DES heritage and environmental approval conditions. Re-treating tailings and some of the waste dump material will not increase the visual prominence of the site as no new rock or ore material will be mined. Existing waste dumps and tailings impoundments will be modified with revegetation of post mined areas.
Impact criteria	Prescribed Solution
<i>viii. Proposed landscaping and enhancements</i>	Post mine revegetation and landscape rehabilitation including site drainage is subject to DES regulation under an Environmental Authority. Historical mine rehabilitation was not undertaken in accordance with current rehabilitation practices. Insufficient funding has led to significant deterioration of historic buildings. Heritage Minerals has regulatory obligations to rehabilitate operational areas according to current practice.

APPENDIX 3

MAP OF HERITAGE MINERALS OPERATING AREAS AND FUTURE EXPLORATION AND REHABILITATION AREAS

HERITAGE MINERALS OPERATING AREAS, FUTURE EXPLORATION TARGETS AND POSSIBLE REHABILITATION AREAS



LEGEND

- Heritage Minerals Operating Areas
- Future Exploration and Rehabilitation
- Mining Lease
- Priority Living Area
- Mine Access Road
- Internal Haul Road

APPENDIX 4

**LIST OF COMMUNITY COMMENT FROM CARBINE
COMMUNITY INFORMATION**

**MEETING HELD AT MOUNT MORGAN 14th
DECEMBER 2016**

**(HERITAGE MINERALS COMMENT REPLACING
CARBINE WHERE MODIFIED)**

Carbine Resources Ltd – Mount Morgan Community Information Meeting

14th December 2016 Mount Morgan School of Arts Building

NOTES ON QUESTIONS TAKEN FROM THE FLOOR

(HERITAGE MINERALS COMMENT ADDED WHERE REPLACING CARBINE)

Question From	Aspect of Interest	Question	Carbine Response (Heritage Minerals added)
Resident	Noise	Commended Carbine on the quality of the presentation. How much noise will be produced and if locals find it excessive, can we compromise?	<p>All components of the plant have been modelled for noise production to ensure compliance with regulatory requirements. Plant is located in an area that provides noise and visual shielding. If there are issues once the plant is operating Carbine will look to see how that can be addressed. Restricted hours for the mining operation.</p> <p>HERITAGE MINERALS: The process plant location has changed to an area that is was originally approved by DES for Norton's proposed project. It is about 900m from the nearest residence. Direct line of sight is shielded by landform. The site is adjacent to DNRME's Water Treatment Plant.</p>
Resident	Employment for locals	What will be your process for hiring particularly when you engage contractors	<p>Recognition that there are experienced locals. Construction company to build plant and that will require specific expertise. Use of local people where skills available including labour. No provision for fly in fly out. Carbine won't be building a construction camp. Provision for training/apprenticeships once in operation. Carbine currently collecting resumes from locals. Contracts for mining will incorporate requirement for using local workforce where available. At the appropriate time a suitable</p>

			recruitment process will be put in place. HERITAGE MINERALS: no change
Resident	Timeframe	What is the timeframe for raising project finance	HERITAGE MINERALS: Best case 3 months
Resident	Share price	Will there be future dividends	It will be a future management (Company Board) decision whether profits will be used to fund dividends or used to grow the company HERITAGE MINERALS is not a public listed company
Resident	Investment	Will multinationals be interested in Carbine as an investment	Unlikely to attract multinationals because the pyrite product is potentially a complication for large
			companies. May change in future though once production starts. HERITAGE MINERALS: not relevant for a company that is not public listed
Resident	Cyanide use in gold recovery	Has Carbine looked at other gold recovery techniques other than using cyanide	The use of cyanide to recover gold is a well-known widely used and successful technique in Australia. Cyanide is expensive so Carbine will have a “detox” unit to recover and reuse cyanide. Cyanide use is subject to DEHP regulations. If there are other techniques available in future that are cost effective, Carbine would consider the alternatives. HERITAGE MINERALS: no change
Resident	Pyrite	Is it likely that the pyrite producer in Finland would be interested to take on Mount Morgan pyrite production	Carbine has held some talks with the Finnish producer but they haven’t expressed interest in Mount Morgan pyrite production. This is because the pyrite is typically produced as a genuine by-product and isn’t the primary focus of the company. HERITAGE MINERALS: won’t be producing pyrite
Resident	Pyrite	What are the risks associated with securing pyrite contracts for China	Carbine has an “off-take agreement” with a mineral trader subject to market pricing (Talana). Carbine will seek to establish long term contracts with pyrite buyers once the mine starts.

			HERITAGE MINERALS: won't be producing pyrite
Resident	Project funding	Will Carbine use a combination of debt and equity to finance the project	Yes HERITAGE MINERALS: not relevant for a private company.
Resident	Mining tailings	How will Carbine recover the tailing especially those that are under water	Dry mining where tailings are exposed and can be dewatered and dredging where tailings are under water (as did the former mine) HERITAGE MINERALS: no change
Resident	Revegetation	Will trees grow on mined out areas	It is a highly disturbed site. Trees do currently grow on disturbed areas. Carbine will be able to improve the current disturbed state of the site. DNRME investigations done on revegetation are available to Carbine. HERITAGE MINERALS: no change
Resident	Sulphuric acid production	Can Carbine make sulphuric acid on-site rather than sending pyrite to China	To build a sulphuric acid plant at the mine site would cost in the order of \$150 million. Carbine has no current plans to do so. That could change if chemical producers become interested in that option.
			Agree that one logical option is to produce Sulphuric Acid on site. HERITAGE MINERALS: won't be producing pyrite
Resident	Share price and financing	How does Carbine's share price affect project funding	Carbine's view is the company shares are currently undervalued. Capital costs are high for a 9.5-year mine life but project economics improve significantly with the 20 year base case. HERITAGE MINERALS: not relevant for a private company