Works Approval Application: Expansion of Hill 60 Power Station

Supporting Information Document – Attachment 8

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1. Premises Details

Mt Magnet Gold Pty Ltd is a wholly owned subsidiary of Ramelius Resources Ltd and operates the Mt Magnet Gold Mine (MMG). MMG is located proximal to the town of Mount Magnet in the Murchison Region of Western Australia (WA). The township of Mount Magnet is located 570 kilometres (km) northeast of Perth and 320 km east of Geraldton.

The Mount Magnet area has been mined since gold discovery in the late 1800s. The Hill 50 Gold Mine operated from the 1930s to 1970s. In 1980, Western Mining Corporation re-developed underground mining and consolidated surrounding tenements into single company. In 1997 Wattle Gully Gold Mines acquired the site which was renamed to Mt Magnet Gold. Harmony Gold (Australia) Pty Ltd acquired the site in 2002 and operated several underground and open pits with operations placed into care and maintenance in early 2008. MMG purchased the site in 2010 and recommenced open pit mining in 2011 with open pit, underground and ore processing activities ongoing to date.

The Hill 60 power station site is located off the Geraldton - Mount Magnet road, approximately 2 kilometers southwest of the southern boundary of the town of Mount Magnet. It is located adjacent to the town's power station site (Figure 1).

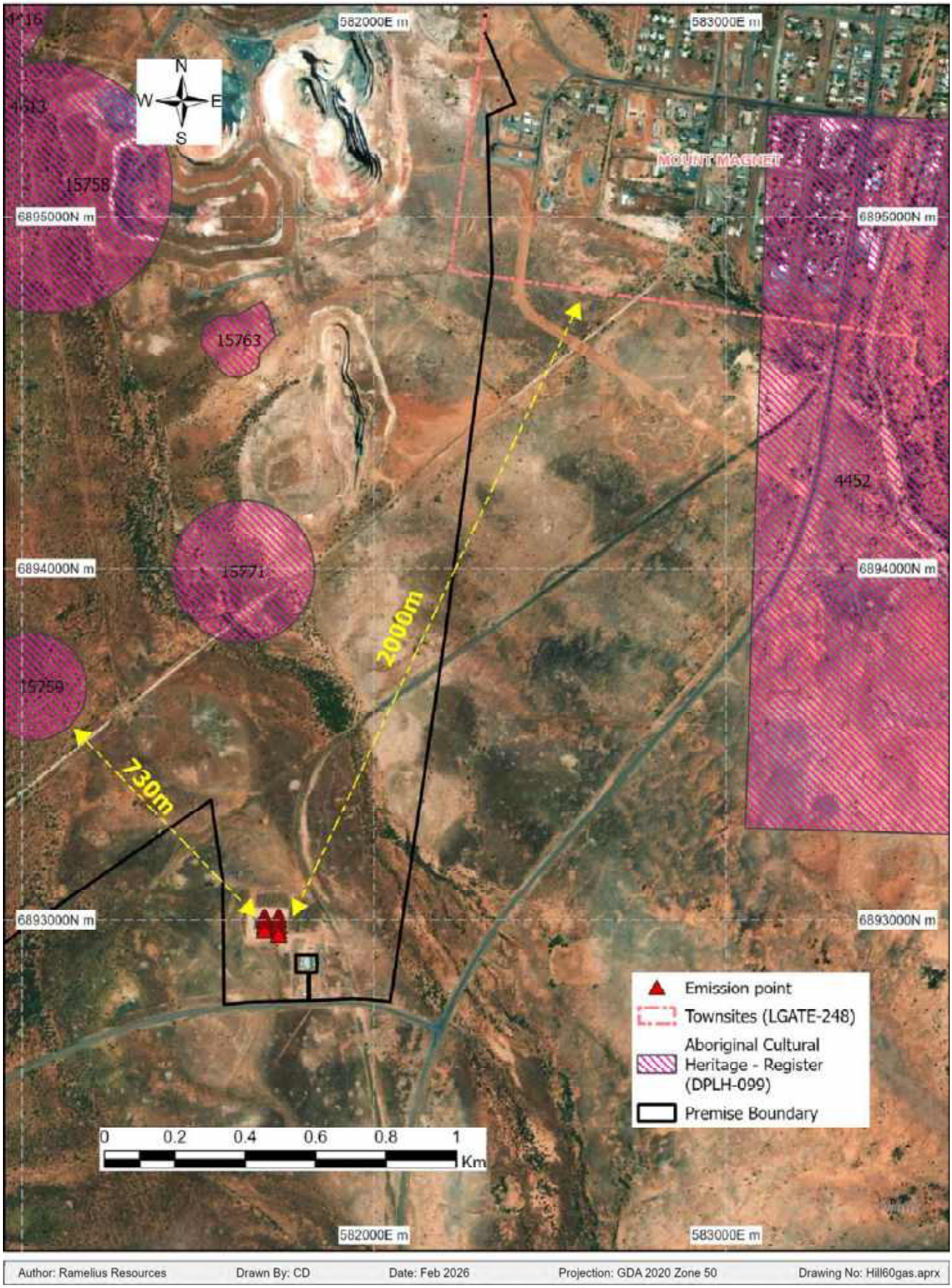


Figure 1: Power station location

2. Proposed Activities

Planned production increase at the Mount Magnet mine also requires an increase in power generation capacity. The scope of this works approval application is to increase the capacity of the existing Hill 60 natural gas power station from 14 MW to 34 MW. The current plant capacity is under the Prescribed Permises Category 52 threshold of *20 megawatts or more in aggregate (using natural gas)* so has not been included as part of the site's DWER Licence and Prescribed Premises boundary. The current site layout is shown in Figure 2.

Gas supply to the site is from the Dongara gas pipeline located adjacent to the facility.

Existing Infrastructure. The existing plant was constructed in 2024. The plant configuration is 3 x Jenbacher JGC 616 V16-cylinder engines with power output up to 2.5 MW and 2 x Jenbacher JGC 620 V20-cylinder engines with power output up to 3.3 MW, for a total installed capacity of approximately **14MW**. As this is below the Category 52 threshold of 20MW using natural gas no Works Apporval and Licence was required.

Expansion Project. The proposed scope of work is to add up to an additional **20MW** of generating capacity. A final decision on make and model of engine will be made based on lead time/delivery, but it is likely to be either more Jenbacher JGC 620 or Caterpillar engines. This will comprise the following components:

- Installatoin of 6 additional engines with power output of approximately 3.3 MW each.
- HV and LV switchroom.
- Transformers.
- Ancillary infrastructure.

The total Hill 60 power station installed capacity will therefore become **34MW** using natural gas.

Construction of the power station expansion will comprise installation of modular / pre-constructed components. The expansion project site is located inside the existing power station compound. No new vegetation clearing or topsoil stripping is required. Construction works will comprise the following activities:

- Civil works to install services. Buried services include power cables, gas supply, earth cabling, water supply and communications cables.
- Pad construction. Compaction of pad areas for engine rooms and other surface infrastructure. Installing concrete footings and pads.
- Perimeter fencing.
- Component installation. The engine/generator sets are transported to site as modules and installed. Install ancillary infrastructure comprising switchrooms, transformers, buildings and other components.

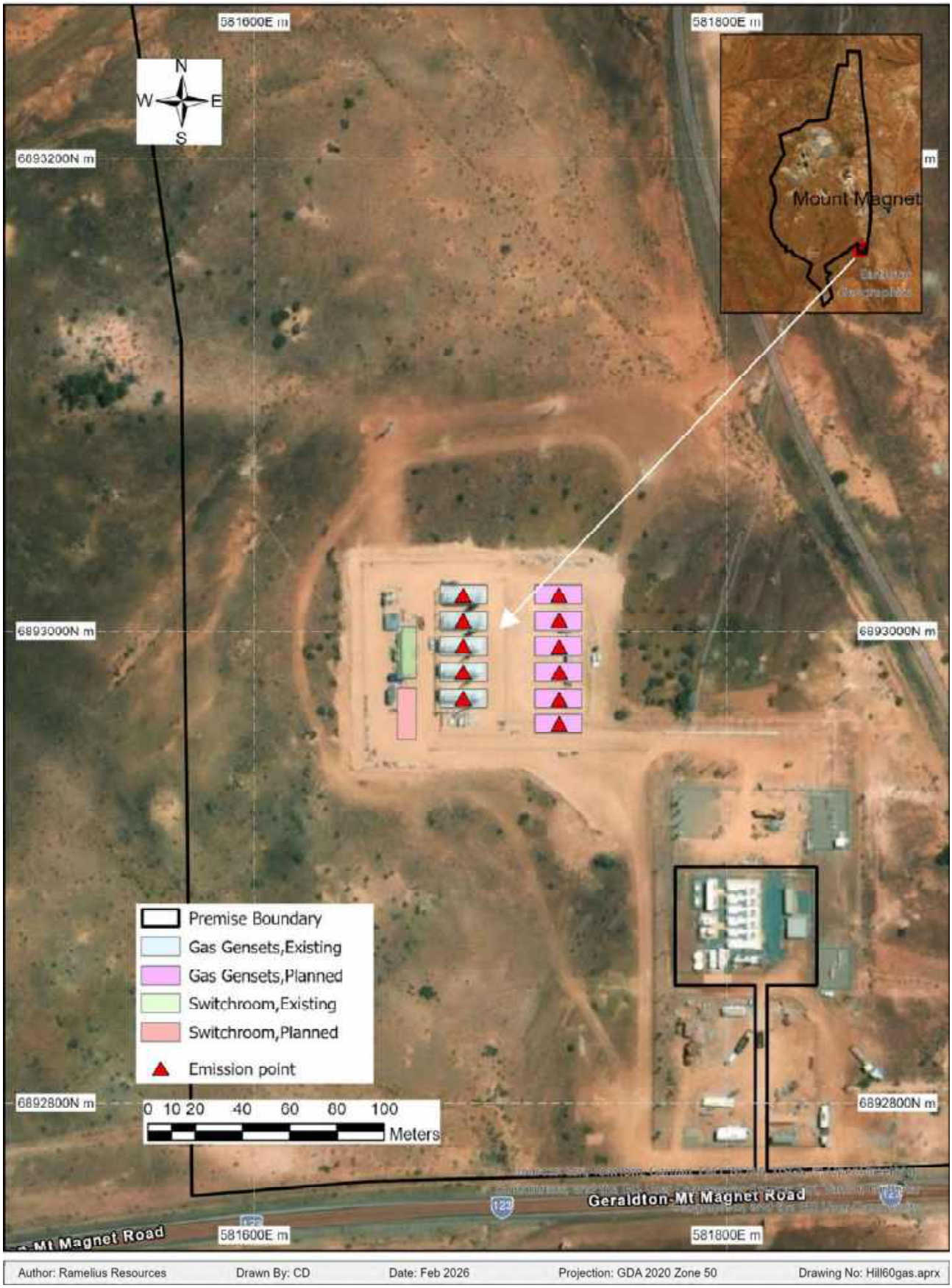


Figure 2: Hill 60 plant layout

2.1. Prescribed Premises Category

At the conclusion of the Hill 60 power station upgrade an amendment to DWER Licence L5529/1988/12 will be submitted to include:

- Category 52 - premises (other than premises within category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel - 20 megawatts or more in aggregate (using natural gas)
- Amendment of the Prescribed Premises boundary to include the Hill 60 power station site as shown in Figure 3.

2.2. Vegetation Clearing

No additional vegetation clearing is required.The power station expansion project can be accommodated within the existing cleared plant site boundary.

2.3. Commissioning

During environmental commissioning, emissions may be permitted, subject to works approval conditions. It is recognised that in commissioning operations, emissions higher than normal operation may occur in the short term until the plant is running at steady state. It is understood that DWERs assessment will consider these emissions and ensure that during the proposed commissioning phase they do not present an unacceptable risk to the environment, public health, or public amenity.

A commissioning period of 30 days is requested, to allow for the following activities.

- Validation of construction work packages to confirm all scopes have been completed to specifications;
- Testing of electrical safety systems such as circuit breakers and alarms; and
- Shutdown and startup procedures are in place and have been tested.

The power station operator (PWR) will prepare a detailed commissioning and testing plan prior to construction. This will be provided to DWER when received by Ramelius.

2.4. Time Limited Operation

A time limited operation (TLO) period of 180 days is requested to be included in the Works Approval.

Conditions will be included in the works approval to regulate emissions and discharges that arise during the time limited operations phase. These conditions will be based on the design performance of the generators as provided in the works approval application.

This TLO period is to allow for the assessment of the licence application by DWER. The time limited operations phase conditions in the works approval may be transferred, as appropriate, into the operating licence.

3. Emissions

Appendix 1 provides technical and emission datasheets for the Jenbacher JGC 620 V20 engines.

The specifications show gas volume consumed is 758 Nm^3/hr at 100% engine capacity. Emission data is shown as NOx – 43 tons/yr and CO – 91 tons/yr.

4. Other Approvals

No other approvals are required in order to commence the project.

A second powerline will be constructed from the expanded Hill 60 powerstation to connect into the existing power facilities at Hill 50. This line will be parallel to the existing line. This activity already has MDCP approval from DMPE.

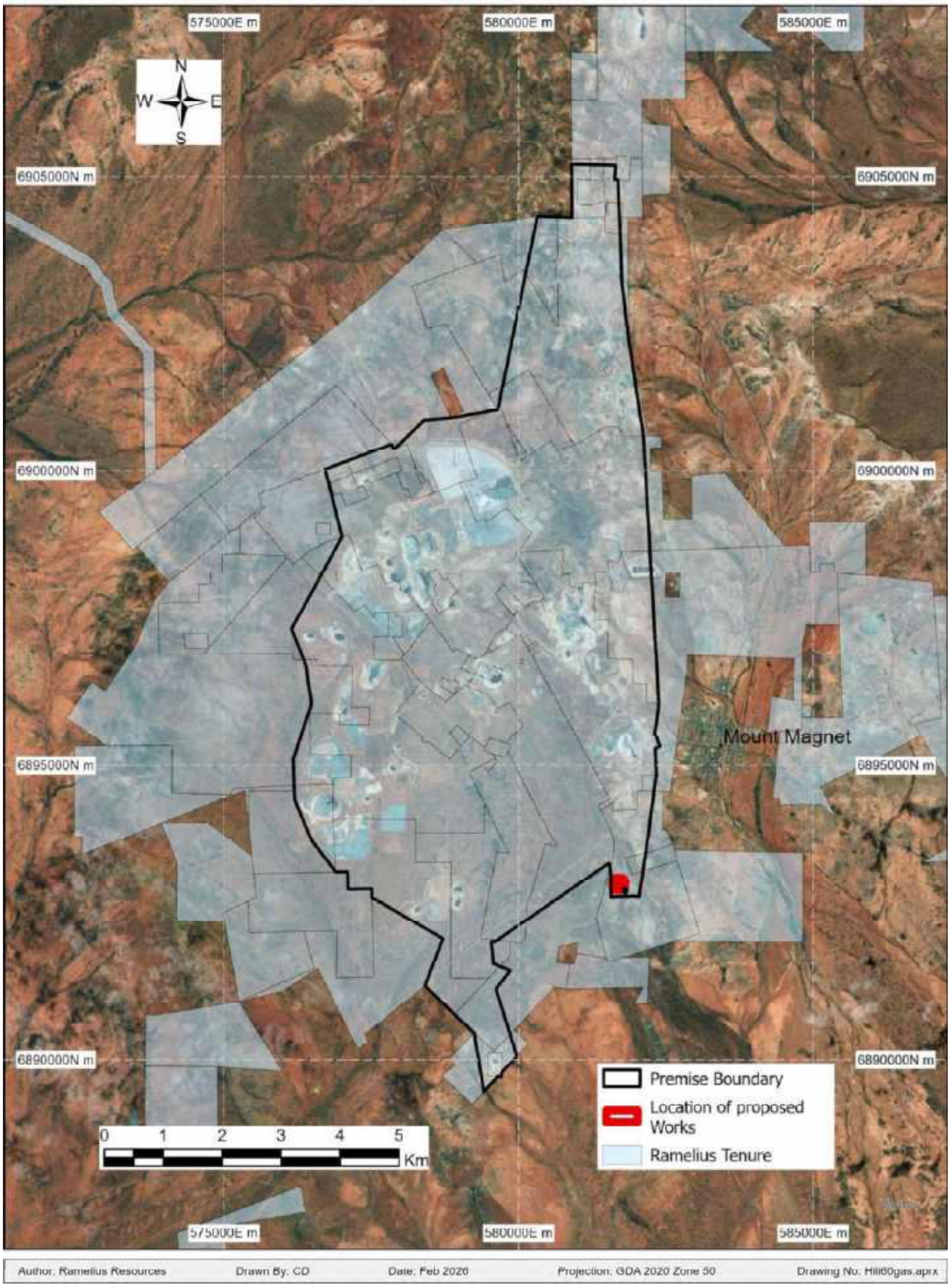


Figure 3: Proposed Prescribed Premises boundary

5. Baseline Environment

Botanica Consulting (2024) undertook a flora and vegetation survey over the Mount Magnet mine area. No Threatened or Priority Flora taxa have previously been recorded in the area for the proposed thermal power plant. No Threatened or Priority Flora were recorded in the area during the 2024 survey. The full memo report is provided in Appendix 2.

6. Attachments

Attachment 1: 1A Proof of Ownership

Department of Mines, Petroleum and Exploration

GOVERNMENT OF WESTERN AUSTRALIA

Home Tenement Register Online Transactions Enquiry Admin Help

Tenement Register

Register for Tenement M 58/120

Identifier: M 58/120

Status: Live
Area: 299.25000 HA
Markout: 25/03/1988 14:42:00
Received: 25/03/1988 16:25:00
Term Granted: 21 Years (Renewed)
Commence: 16/12/1988
Expiry: 15/12/2030
Death:

[redacted]

Holders | Description | Relationships | Survey | General | Shire | Grant | Conditions | Dealings
Payments | Expenditure | Combined Reporting | Bond | Map | Native Title | Warden's Court | Documents

Current Holders | Holder Changes | Applicants On Receival

Organisation	MT MAGNET GOLD PTY LTD		100/100
ACN	008 669 556	**ABN**	

[redacted]

Perth Head Office Time: 18/02/2026 13:22

Logged in as Paul Rokich

Attachment 2: 1B ASIC company extract

ASIC
Australian Securities & Investments Commission

Current Company Extract

Name: MT MAGNET GOLD PTY LTD
ACN: 008 669 556

Date/Time: 18 February 2026 AEST 01:07:57 PM

This extract contains information derived from the Australian Securities and Investments Commission's (ASIC) database under section 1274A of the Corporations Act 2001.

Please advise ASIC of any error or omission which you may identify.

EXTRACT

Organisation Details		Document Number
Current Organisation Details		
Name:	MT MAGNET GOLD PTY LTD	027837720
ACN:	008 669 556	
ABN:	66008669556	
Registered in:	Western Australia	
Registration date:	16/05/1934	
Next review date:	16/05/2026	
Name start date:	17/02/2012	
Previous state number:	C0340042V	
Status:	Registered	
Company type:	Australian Proprietary Company	
Class:	Limited By Shares	
Subclass:	Proprietary Company	

Address Details		Document Number
Current		
Registered address:	Level 13, 58 Mounts Bay Road, PERTH WA 6000	7EDO06823
Start date:	29/07/2025	
Principal Place Of Business address:	Level 13, 58 Mounts Bay Road, PERTH WA 6000	7EDO06823
Start date:	30/06/2025	

[redacted]

[redacted] Information

Share Structure

Class	Description	Number issued	Total amount paid	Total amount unpaid	Document number
ORD	ORDINARY SHARES	137500000	137500000.00	0.00	027837722

Members

Note: For each class of shares issued by a proprietary company, ASIC records the details of the top twenty members of the class (based on shareholdings). The details of any other members holding the same number of shares as the twentieth ranked member will also be recorded by ASIC on the database. Where available, historical records show that a member has ceased to be ranked amongst the top twenty members. This may, but [redacted]

[redacted]

Class	Number held	Beneficially held	Paid	Document number
ORD	137500000	yes	FULLY	030177045

Financial Reports

Balance date	Report due date	AGM due date	Extended AGM due	AGM held date	Outstanding	Document number
30/06/1999	31/10/1999			19/11/1999	no	016283728
30/06/2000	31/10/2000			24/11/2000	no	016841446
30/06/2001	31/10/2001				no	011685172
30/06/2002	31/10/2002				no	018911518

Documents

Note: Where no Date Processed is shown, the document in question has not been processed. In these instances care should be taken in using information that may be updated by the document when it is processed. Where the Date Processed is shown but there is a zero under No Pages, the document has been processed but a copy is not yet available.

Date received	Form type	Date processed	Number of pages	Effective date	Document number
01/09/2023	668 Approval Of Foreign Holder Nominee	05/09/2023	2	01/09/2023	501564022
22/07/2025	484 Change To Company Details 484B Change Of Registered Address	22/07/2025	2	22/07/2025	7EDO06823

	484C Change Of Principal Place Of Business (Address)				

End of Extract of 3 Pages

Attachment 3: 1C Letter of Authortity

18 February 2026

Department of Water & Environmental Regulation
Locked Bag 10
Joondalup WA 6919
By email only

Works Approval application for the Hill 60 power station expansion

The purpose of this letter is to provide authority for the following personnel to act on behalf of Ramelius Resources Ltd and subsidiary companies:

- [redacted]

Authorisation includes submitting applications for permits and licences and responding to enquiries, providing information, meeting, corresponding and liaising with Department of Water & Environmental Regulation for the purpose of securing relevant permits and licences.

Yours faithfully

[redacted]

Level 13, 58 Mounts Bay Road, Perth, WA 6000
PO Box 2714, Cloisters Square PO, WA 6850

T +61 8 9202 1127
rameliusresources.com.au

Attachment 4: 3A Commissioning Plan

To be provided to DWER – prior to site works commencing

Attachment 5: 10: Fee Calculator

Amendment application fee calculator (effective as of 1 July 2022)

Instrument No.	
Unit value ($)	
Categories	**Units**
52 - Electric power generation: More than 20 but not more than 100 megawatts	

Note: Amendment fee is determined by the category with the largest fee units

Fee Payable

[redacted]

Appendix 1: Emission data sheets

JENBACHER

Technical Description

Genset

JGS 620 GS-N.L

Grid Parallel with Island Operation

static Grid Code

Mount Magnet

Electrical output 3239 kW el.

Emission values

NOx < 500 mg/Nm³ (5% O2) | < 190 mg/Nm³ (15% O2)

JENBACHER

0.01 Technical Data (at genset)

			100%	75%	min.
Power input	[2]	kW	7 205	5 525	3 983
Gas volume	*)	Nm³/h	758	582	419
Mechanical output	[1]	kW	3 306	2 479	1 715
Electrical output	[4]	kW el.	3 239	2 424	1 668
Heat to be dissipated (calculated with Glycol 3%)	[5]				
~ Intercooler 1st stage (Engine jacket water cooling circuit)	[9]	kW	1 054	623	291
~ Intercooler 2nd stage (Low temperature circuit)		kW	145	90	54
~ Lube oil (Engine jacket water cooling circuit)		kW	327	294	253
~ Jacket water		kW	506	447	382
~ Surface heat	ca. [7]	kW	218	~	~
Spec. fuel consumption of engine electric	[2]	kWh/kWel.h	2,23	2,28	2,39
Spec. fuel consumption of engine	[2]	kWh/kWh	2,18	2,23	2,32
Lube oil consumption	ca. [3]	kg/h	0,66	~	~
Electrical efficiency			45,0%	43,9%	41,9%
Fuel gas LHV		kWh/Nm³	9,5		

*) approximate value for pipework dimensioning
[ ] Explanations: see 0.10 - Technical parameters

All heat data is based on standard conditions according to attachment 0.10. Deviations from the standard conditions can result in a change of values within the heat balance and must be taken into consideration in the layout of the cooling circuit/equipment (intercooler; emergency cooling; ...).

Main dimensions and weights (at genset)

Length	mm	~ 9 900
Width	mm	~ 2 200
Height	mm	~ 2 800
Weight empty	kg	~ 40 700
Weight filled	kg	~ 41 800

Connections

Jacket water inlet and outlet	DN/PN	100/10
Exhaust gas outlet [C]	DN/PN	600/10
Fuel Gas (at genset) [D]	DN/PN	100/10
Water drain ISO 228	G	½"
Condensate drain	mm	~
Safety valve - jacket water ISO 228 [G]	DN/PN	2x1½"/2,5
Lube oil replenishing (pipe) [I]	mm	28
Lube oil drain (pipe) [J]	mm	28
Jacket water - filling (flex pipe) [L]	mm	13
Intercooler water-Inlet/Outlet 1st stage	DN/PN	100/10
Intercooler water-Inlet/Outlet 2nd stage [M/N]	DN/PN	65/10

Output / fuel consumption

ISO standard fuel stop power ICFN	kW	3 306
Mean effe. press. at stand. power and nom. speed	bar	21,20
Fuel gas type		#NAME?
Based on methane number | Min. methane number	MZ	108 | 100 d)
Compression ratio	Epsilon	11,5
Min. fuel gas pressure for the pre chamber	bar	4,05
Min./Max. fuel gas pressure at inlet to gas train	mbar	120 - 200 c)
Max. rate of gas pressure fluctuation	mbar/sec	10
Maximum Intercooler 2nd stage inlet water temperature	°C	50
Spec. fuel consumption of engine	kWh/kWh	2,18
Specific lube oil consumption	g/kWh	0,20
Max. Oil temperature	°C	~ 80
Jacket-water temperature max.	°C	~ 95
Filling capacity lube oil (refill)	lit	~ 765

c) Lower gas pressures upon inquiry
d) based on methane number calculation software AVL 3.2

0.02 Technical data of engine

Manufacturer		JENBACHER
Engine type		J 620 GS-J01
Working principle		4-Stroke
Configuration		V 60°
No. of cylinders		20
Bore	mm	190
Stroke	mm	220
Piston displacement	lit	124,75
Nominal speed	rpm	1 500
Mean piston speed	m/s	11,00
Length	mm	5 542
Width	mm	1 900
Height	mm	2 540
Weight dry	kg	15 000
Weight filled	kg	16 000
Moment of inertia	kgm²	69,21
Direction of rotation (from flywheel view)		left
Radio interference level to VDE 0875		N
Starter motor output	kW	20
Starter motor voltage	V	24

Thermal energy balance

Power input	kW	7 205
Intercooler	kW	1 199
Lube oil	kW	327
Jacket water	kW	506
exhaust when cooling down 180 °C	kW	966
exhaust when cooling down 100 °C	kW	1 392
Surface heat	kW	127

Exhaust gas data

Exhaust gas temperature at full load	[8]	°C	359
Exhaust gas temperature at bmep= 15,9 [bar]	[8]	°C	~ 406
Exhaust gas temperature at bmep= 11 [bar]	[8]	°C	~ 457
Exhaust gas mass flow rate, wet		kg/h	17 831
Exhaust gas mass flow rate, dry		kg/h	16 722
Exhaust gas volume, wet		Nm³/h	14 106
Exhaust gas volume, dry		Nm³/h	12 725
Max.admissible exhaust back pressure after y-pipe		mbar	50

Combustion air data

Combustion air mass flow rate	kg/h	17 330
Combustion air volume	Nm³/h	13 410
Max. admissible pressure drop at air-intake filter	mbar	10

basis for exhaust gas data: natural gas: 100% CH4; biogas 65% CH4, 35% CO2

Sound pressure level

Aggregate a)			dB(A) re 20µPa		101
31,5	Hz		dB		88
63	Hz		dB		95
125	Hz		dB		101
250	Hz		dB		99
500	Hz		dB		94
1000	Hz		dB		93
2000	Hz		dB		92
4000	Hz		dB		94
8000	Hz		dB		95
Exhaust gas b)			dB(A) re 20µPa		123
31,5	Hz		dB		112
63	Hz		dB		121
125	Hz		dB		131
250	Hz		dB		119
500	Hz		dB		117
1000	Hz		dB		118
2000	Hz		dB		117
4000	Hz		dB		112
8000	Hz		dB		98

Sound power level

Aggregate	dB(A) re 1pW	122
Measurement surface	m²	125
Exhaust gas	dB(A) re 1pW	131
Measurement surface	m²	6,28

a) average sound pressure level on measurement surface in a distance of 1m (converted to free field) according to DIN 45635 and ISO 3744, precision class 3.

b) average sound pressure level on measurement surface in a distance of 1m according to DIN 45635 and ISO 3744, precision class 2.

The spectra are valid for aggregates up to bmep=20 bar. (for higher bmep add safety margin of 1dB to all values per increase of 1 bar pressure).

Engine tolerance ± 3 dB

0.03 Technical data of generator

Manufacturer		TDPS e)
Type		TD125 F2K7 e)
Type rating	kVA	4 500
Driving power	kW	3 306
Ratings at p.f. = 1,0	kW	3 239
Ratings at p.f. = 0,8	kW	3 215
Rated output at p.f. = 0,8	kVA	4 019
Rated reactive power at p.f. = 0,8	kVar	2 411
Rated current at p.f. = 0,8	A	211
Frequency	Hz	50
Voltage	kV	11
Speed	rpm	1 500
Permissible overspeed	rpm	1 800
Power factor (lagging - leading) (UN)		0,8 - 0,95
Efficiency at p.f. = 1,0		98,0%
Efficiency at p.f. = 0,8		97,3%
Moment of inertia	kgm²	419,00
Mass	kg	17 400
Radio interference level to EN 55011 Class A (EN 61000-6-4)		N
Cable outlet		left
Ik" Initial symmetrical short-circuit current	kA	1,11
Is Peak current	kA	2,82
Insulation class		F
Temperature (rise at driving power)		F
Maximum ambient temperature	°C	40

Reactance and time constants at rated output (saturated)		
xd direct axis synchronous reactance	p.u.	1,654
xd' direct axis transient reactance	p.u.	0,279
xd" direct axis sub transient reactance	p.u.	0,207
x2 negative sequence reactance	p.u.	0,305
Td" sub transient reactance time constant	ms	35
Ta Time constant direct-current	ms	185
Tdo' open circuit field time constant	s	2,34

e) JENBACHER reserves the right to change the generator supplier and the generator type. The contractual data of the generator may thereby change slightly. The contractual produced electrical power will not change.

JENBACHER

connection variant 1K

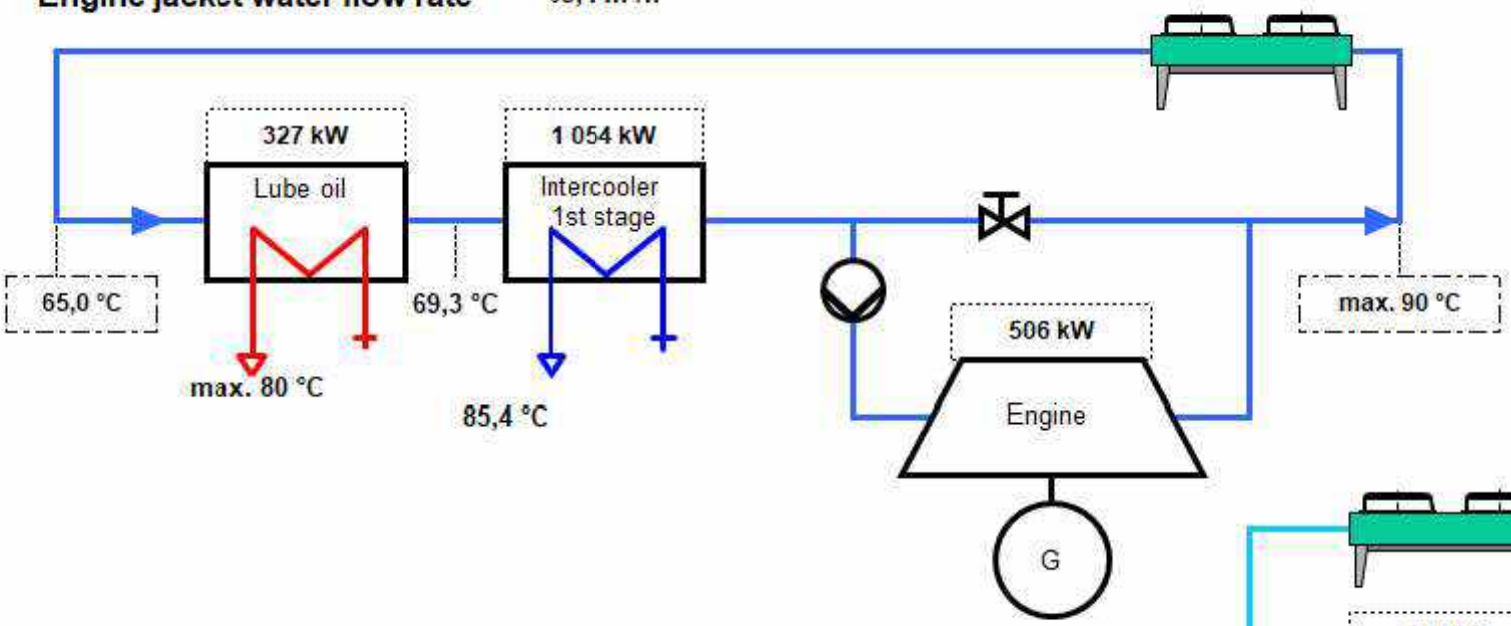
J 620 GS-J01

Engine jacket water cooling circuit (calculated with Glycol 3%)

Heat to be dissipated = 1 886 kW

(+12/-8 % tolerance)

Engine jacket water flow rate = 65,4 m³/h

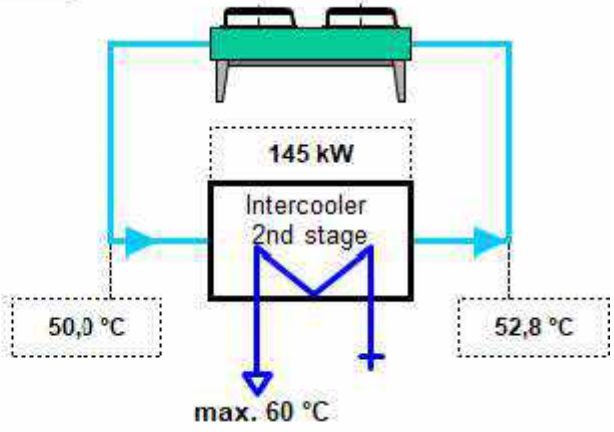


Low temperature circuit (calculated with Glycol 3%)

Heat to be dissipated = 145 kW

(+12/-8 % tolerance)

Cooling water flow rate = 45,0 m³/h



0.05 Cooling water circuit

Oil - heat (Engine jacket water cooling circuit)		
Nominal output	kW	327
Max. Oil temperature	°C	80
Loss of nominal pressure of engine jacket water	bar	0,40
Safety valve - max press. set point	bar	3,50

Engine jacket water - heat (Engine jacket water cooling circuit)		
Nominal output	kW	506
Max. engine jacket water temperature (outlet engine)	°C	90
Engine jacket water flow rate	m³/h	65,4
Safety valve - max press. set point	bar	3,50

Mixture Intercooler (1st stage) (Engine jacket water cooling circuit)		
Nominal output	kW	1 054
Max. inlet cooling water temp. (intercooler)	°C	69,3
Nominal pressure of cooling water / (max. operating pressure)	PN	10
Loss of nominal pressure of engine jacket water	bar	0,50
Safety valve - max press. set point	bar	3,50

Mixture Intercooler (2nd stage) (Low temperature circuit)		
Nominal output	kW	145
Max. inlet cooling water temp. (intercooler)	°C	50
Aftercooler water flow rate	m³/h	45,0
Nominal pressure of cooling water / (max. operating pressure)	PN	10
Intercooler water pressure drop	bar	0,60
Safety valve - max press. set point	bar	3,50

The final pressure drop will be given after final order clarification and must be taken from the P&ID order documentation.

0.10 Technical parameters

All data in the technical specification are based on engine full load (unless stated otherwise) at specified temperatures and the methane number and subject to technical development and modifications.

All pressure indications are to be measured and read with pressure gauges (psi.g.).

[1] At nominal speed and standard reference conditions ICFN according to ISO 3046-1, respectively
[2] According to ISO 3046-1, respectively, with a tolerance of +**5** %.
Efficiency performance is based on a new unit (immediately upon commissioning).Effects of degradation during normal operation can be mitigated through regular service and maintenance work.
reference value --> 60%CH4
[3] Average value between oil change intervals according to maintenance schedule, without oil change amount
[4] At p. f. = 1.0 according to IEC 60034-1:2017 with relative tolerances, all direct driven pumps are included
[5] Total output with a tolerance of +12/-8 %
[6] According to above parameters [1] through [5]
[7] As a guiding value at p.f. 0.8 and only valid for (engine, generator, TCM). Other peripheral equipment is not considered.
[8] Exhaust temperature with a tolerance of ±8 %
Note: an optimised operating mode to minimise methane slip can result in changed exhaust gas data (exhaust gas temperature, NOx emissions, etc.) and must be taken into account in the design of the exhaust gas aftertreatment
[9] Mixture temperature at:
If the engine is designed for intake air temperatures of > 30°C, then the stated mixture heat of the 1st stage is to be increased from 25°C in 2%/°C increments. The additional temperature must be added to the resulting full load point.

Radio interference level
The ignition system of the gas engines complies the radio interference levels of CISPR 12 and EN 55011 class B, (30-75 MHz, 75-400 MHz, 400-1000 MHz) and (30-230 MHz, 230-1000 MHz), respectively.

Definition of output
- ISO-ICFN continuous rated power:
Net break power that the engine manufacturer declares an engine is capable of delivering continuously, at stated speed, between the normal maintenance intervals and overhauls as required by the manufacturer. Power determined under the operating conditions of the manufacturer's test bench and adjusted to the standard reference conditions.
  - Standard reference conditions:

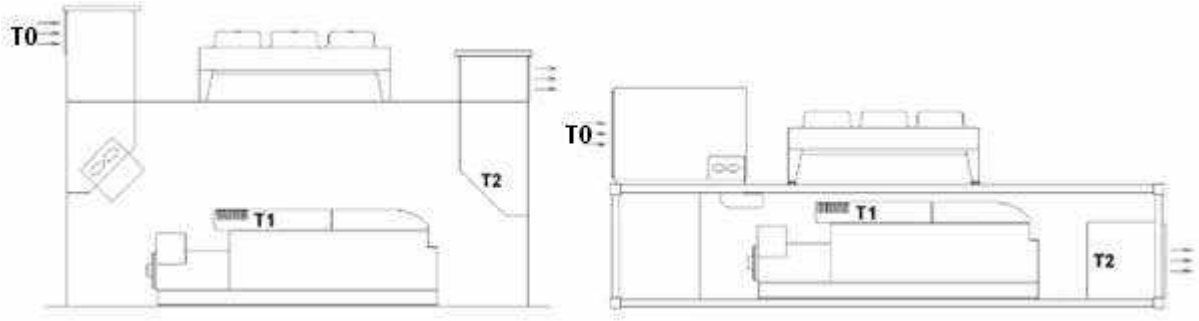
Barometric pressure:	1000 mbar (14.5 psi) or 100 m (328 ft) above sea level
Air temperature:	25°C (77°F) or 298 K
Relative humidity:	30 %

- Volume values at standard conditions (fuel gas, combustion air, exhaust gas)
  Pressure: 1013 mbar (14.7 psi)
  Temperature: 0°C (32°F) or 273 K

Loss of engine performance
a) Performance reduction due to gas quality
If the reference methane number is not reached and the knock control responds, the ignition timing at full performance is adjusted in conjunction with the engine management system; only then is performance reduced.

b) Performance reduction due to voltage and frequency limits
If the voltage and frequency limits for generators specified in IEC 60034-1 Zone A are exceeded, performance is reduced.

c) Performance reduction due to environmental conditions
Standard rating of the engines is for an installation at an altitude ≤ **450m** and combustion air temperature ≤ **40°C** (T1)



The minimum recommended air change ratio (C) must be observed to maintain according to TA 2300-0030.

Parameters for the operation of JENBACHER gas engines
The genset fulfils the limits for mechanical vibrations according to ISO 8528-9.
The following forms an integral part of a contract and must be strictly observed: **TA 1000-0004, TA 1100 0110, TA 1100-0111, TA 1100-0112**, and **TA 2300-0030.**
Transport by rail should be avoided. See **TA 1000-0046** for further details

Failure to adhere to the requirements of the above-mentioned TA documents can lead to engine damage and may result in loss of warranty coverage.

The engine is tested on the test stand with a specific natural gas. The natural gas as used by the Seller on the test stand may differ from the gas as ultimately used by the Customer. For this reason, performance and efficiency levels, exhaust-gas temperatures, gas consumption, etc. may deviate from the parameters specified in the contract.

Ready for H2 means a possible adaptation up to 100vol% H2 operation. Performance data, timeline and costs can be determined on a project-specific basis.

Parameters for the operation of control unit and the electrical equipment
Relative humidity 50% by maximum temperature of 40°C.
Altitude up to 2000m above the sea level.

Parameters for using a gas compressor

The gas quantity indicated under the technical data refers to standard conditions with the given calorific value. The actual volume flow (under operating conditions) has to be considered for dimensioning the gas compressor and each gas feeding component – it will be affected by:

- Actual gas temperature (limiting temperature according to **TA 1000-0300**)
- Gas humidity (limiting value according to **TA 1000-0300**)
- Gas Pressure
- Calorific value variations (can be equated with methane (CH4) variations in the case of biogas)
- The gas compressor is designed for a max. relative under pressure of 15 mbar(g) (0.22 psi) and a inlet temperature of 40°C (104°F) , if within scope of supply JENBACHER.

0.20 Mode of Operation

Grid Parallel and Island Operation - Multi Units (Auto Re-sync)
While Grid connected, the unit/units load can be adjusted via its power control set point or designated option. In the event of a loss of utility, the unit/units will be able to continue operating locally without utility power. When the mains monitor relay (protective relay ANSI No. 27, 59, 81, 78- provided either by JENBACHER or the customer) is activated due to a mains failure, the engine is isolated from the mains by opening the mains circuit breaker.

The load adding and shedding capabilities of the genset documented in

- TA 2108-0031 - general island operation
- TA 2108-0027 for type 2 engines
- TA 2108-0025 for type 3 engines
- TA 2108-0029 for type 4 engines
- TA 2108-0026 for type 6 engines
- TA 2108-0032 for type 9 engines

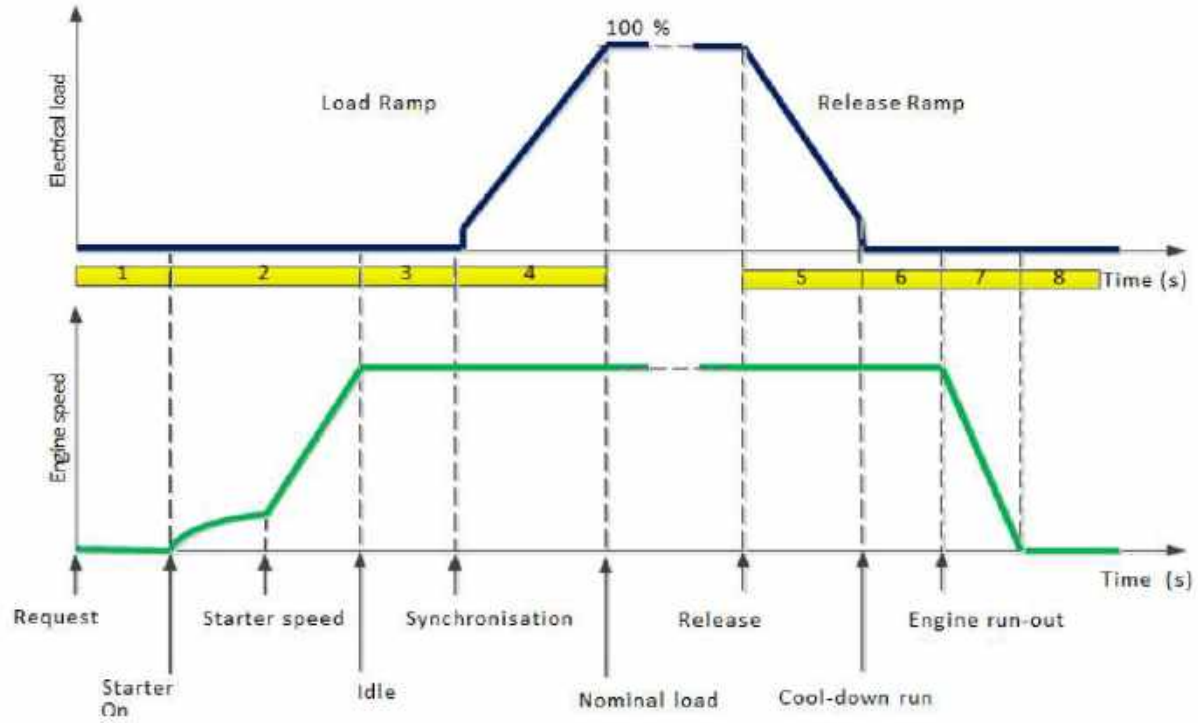
needs to be considered by the customer in order to ensure proper operation of the equipment.

When grid is restored, the unit is provided with an automatic re-synchronization feature which will synchronize the units back to the utility through a JENBACHER Master Synchronizing Control (optional, see appropriate Spec Section) or a higher-level control system provided by the customer. The unit(s) can perform "Black-out" start without external auxiliary power supply to the "dead busbar".

0.20.01 Guide values for genset - start/stop times and el. load ramps

Basic boundary conditions for engine start:

Engine conditions	Oil temperature (°C / °F)	Cooling-water temperature (°C / °F)
Fast start release	> 27 / 80.6	> 55 / 131
Start enable automatic start		> 37 / 98.6
synchronization release		> 55 / 131



The following time data of the individual start sections up to the nominal load are **guideline values** for a fully automatic start under preheated conditions for mains parallel operation. Only the total start time is observed under the various engine conditions. The individual time periods specified in the table therefore do not necessarily add up to the specification of the total start time in mains parallel operation.

Deviations are possible for special designs.

	J208	Type 3	Type 4	Type 612 – 620	J624
(1) Start preparation [1] *)	0	0	20	70	90
(2) Engage starter until reaching nominal speed [s] *)	20	20	25	40	40
(3) Synchronisation [s] *) **)	1-50	1 – 50	1 – 50	1 – 50	1 – 50
(4) Load application up to nominal load [s] *) **)	180	180	180	160	160
Total start-up time from request to nominal load [s]	<300	<300	<300	<300	<330

*) The times for start-up preparation and synchronisation can vary greatly and depend on project specifications.
) **Fast start function and faster load ramps are available on request.

The following **times for unloading the engine** are guide values for engine/generator combination inertia constant H<1 kWs/kVA (with LS, CGT, TDPS generators) and the hot operating condition.

	J208	Type 3	Type 4	Type 612 – 620	J624
(5) Load reduction ramp [s]	160	160	160	160	120
(6) Cool-down run [s]	60	60	60	10	10
(7) Run-down [s]	60	60	60	60	60
Total time from nominal load to run-down time [s]	280	280	280	220	180
(8A) gas tightness control [s]	<100	<100	<100	<100	<100
(8B) Flushing time exhaust tract after shutdown [s]***)				100	100
(8C) Flushing time exhaust tract after shutdown with SD and WT [s]***)				180	300
(8D) Flushing time exhaust tract after shutdown with SD, WT, SCR and greenhouse [s]***)				225	400
(8E) Blocking time for restart [s]	30	30	30	30	30

***) The exhaust gas purging times apply when the exhaust gas purging fan is installed

The table shows the waiting time between stopping the engine and starting it again, with the gas tightness check (8A), exhaust gas scavenging (8B-D) and blocking time (8E) being carried out in parallel. The flushing times can be extended project-specifically depending on the exhaust system.
It should also be noted that the exhaust gas purge must be performed after each unsuccessful start attempt once the gas valve has been opened. (SD = silencer, WT = heat exchanger)

0.30 General information for connection to the public mains

Technical Instruction TA 1530-0188 describes the - possibly optional - functions and parameters for complying with the boundary conditions defined in the country-specific "Grid Codes".

Network operator-dependent requirements must always be coordinated with JENBACHER.

0.30.10 Generator operating range in mains parallel operation

Frequency:
Normal operation fn +/-2% - without power output reduction
Extended operation: fn +4/-6%- with power output reduction between 2 – 10%/Hz
Frequency-measurement resolution: <= 10mHz (resolution)
Generator - voltage range: +/-10% of generator Un
Generator power factor cos phi at the generator terminals: as specified in "0.03 Generator technical data"

FRT (Fault Ride Through) – capability: at mains connection point
Profile 1: 150ms/30%Un (applies to natural gas and biogas)
Profile 2 (150ms/5%Un) and Profile 3 (250ms/5%Un) upon request.

Requirement:
- mains short-circuit power must be at least 5 x SrE or 50MVA
- FRT capability of the onsite auxiliaries

Extended project requirements and country-specific design are optionally possible after consultation and approval with JENBACHER.

0.30.20 Possible mains operator requests

To protect the generating unit in mains parallel operation, appropriate mains protection monitoring functions are necessary to disconnect the generator from the mains in case of a mains fault.

The mains operator-dependent specifications such as e.g.: voltage and frequency range, active power limitation, load ramps, reactive power limitation and control, protection concept, necessary certification or declarations, process data and interfaces are to be specified in project enquiries and must be agreed with JENBACHER before conclusion of the contract.

- Selectivity assessment, protection tests and recurring tests: on-site by the system operator
- Control power provision via pool operator: on request e.g., primary, secondary, tertiary
- Black start capability and countering in own use: on request
- Power generation system (EZA) controller or central control: on-site or possible on request
- Process data scope / remote control:
  - System data must be provided by the connectee for the mains operator.
  - Remote control interface to the mains operator: on-site
  - Interface specification!

Billing measurements - installation, operation, maintenance and remote data transmission: on-site.

Models of genset and generator: simplified models executed as effective value models for mains parallel operation optionally available.
Model formats: Powerfactory, or PSS/E (as of PP23)
Validated genset models in Powerfactory according to FGW TR3, TR4 and TR8 by a body accredited for this purpose according to DIN EN ISO/IEC 17065

Functional scope of the models in mains parallel operation:
- static voltage stability
- dynamic mains support
- Provision of reactive power
- Behaviour at active power setpoint
- Active power adjustment in the event of overfrequency and underfrequency (LFSM-O, LFSM-U)
- Protective devices and settings

0.30.20.01 Active power adjustment in the event of overfrequency and underfrequency

The following functions are available:

- LFSM-U: Limited Frequency Sensitive Mode - Underfrequency
- LFSM-O: Limited Frequency Sensitive Mode - Overfrequency
- FSM

Reduced power output at overfrequency: (LFSM-O function)
The frequency threshold is freely adjustable from fn + (200 - 500mHz) and the static from 2% to 12%. Unless the relevant mains operator specifies otherwise for the LFSM-O mode, a threshold of fn + 200mHz and a static of 5% is set.

Power increase in the event of underfrequency (LFSM-U function) – (OPTIONAL as of XT4.5)
activated according to the mains operator's specifications
The frequency-sensitive active power feed-in has the effect that the generating plant
also moves permanently up and down on the frequency characteristic curve ("driving on the characteristic curve") in the frequency range between fn - 200mHz (unless otherwise specified by the mains) and fn - 2.5Hz with regard to its maximum possible active power feed-in.
The prerequisite for this is a corresponding power setpoint.

Reduced power output at underfrequency:
below 98% of fn, reduction by standard 10% of maximum capacity per Hz. Reduction up to maximum fn - 6%.
Lower reduction ramps of 2 - 10%/Hz on request
The FSM function is available as an option

The power generation system is capable of continuing to operate at this minimum power when the minimum power for controllable operation is reached.

JENBACHER
INNIO

Emission Data Sheet

[redacted] [redacted]

Product Program: PP2024

Printed on : 9/9/2024 12:49:41 PM
Valid until : 31.12.2024 00:00:00

Engine Type: J620 GS
Engine Version: J620 GS-J-101

BMEP [bar] : 22
RPM [1/min] : 1500
Fuel Gas : Natural Gas (MN 75)

	ppm-Dry	mg/Nm³ @5%O2-Dry	g/bhp-hr	g/kWh(mech)	g/GJ(th)	kg/hr	lbs/hr	tons/yr (short)
NOx	157	500	0.98	1.3	161	4.5	9.9	43
CO	541	1050	2	2.8	338	9.4	21	91

CO - Without After treatment system by INNIO Jenbacher, only as guiding value for information

Theoretical wet exhaust composition under assumption of 100 % fuel conversion

	vol.%		g/bhp-hr	g/kWh(mech)	g/GJ(th)	kg/hr	lbs/hr
CO2	5.3		352	473	58291	1625	3587
O2	9.6						
N2	74.2						
Ar	0.9						
H2O	9.9						

Appendix 2: Botanica memo botanical report

Memo

Mount Magnet Gold Project – Power plant disturbance footprint

Prepared For: Ramelius Resources Limited
Project Name: Detailed Flora and Vegetation Survey
Tenements: M58/120
Job Number: 2023/102
Date: 08 July 2024

BOTANICA CONSULTING
33 Brewer St PERTH WA 6000 | [redacted]

Attachment A: Quadrat description data sheet
Attachment B: Vegetation condition ratings

1. Introduction

Botanica Consulting Pty Ltd (Botanica) was commissioned by Ramelius Resources Limited (Ramelius) to undertake a detailed flora and vegetation survey and basic fauna assessment of the Mt Magnet Gold Project area. The size of this survey area is approximately 7,783 ha and it is located immediately north and west of Mount Magnet, Western Australia. (Figure 1).

The detailed survey was conducted during the 25 to 28 May 2024 by Botanica staff members [redacted] The survey area was traversed using a four-wheel drive vehicle and on foot using a handheld GPS to record the locations of tracks traversed and locations of any conservation significant species (recorded in GDA 2020 format).

A full report is currently being prepared that will present the findings of the detailed survey, however, this memo is to discuss a small area of the survey area that Ramelius propose to build infrastructure for a thermal power plant (the 'survey area'). The area is less than 5 ha and is located immediately northwest of the gas power plant that provides power to Mt Magnet townsite and the Mt Magnet mine.

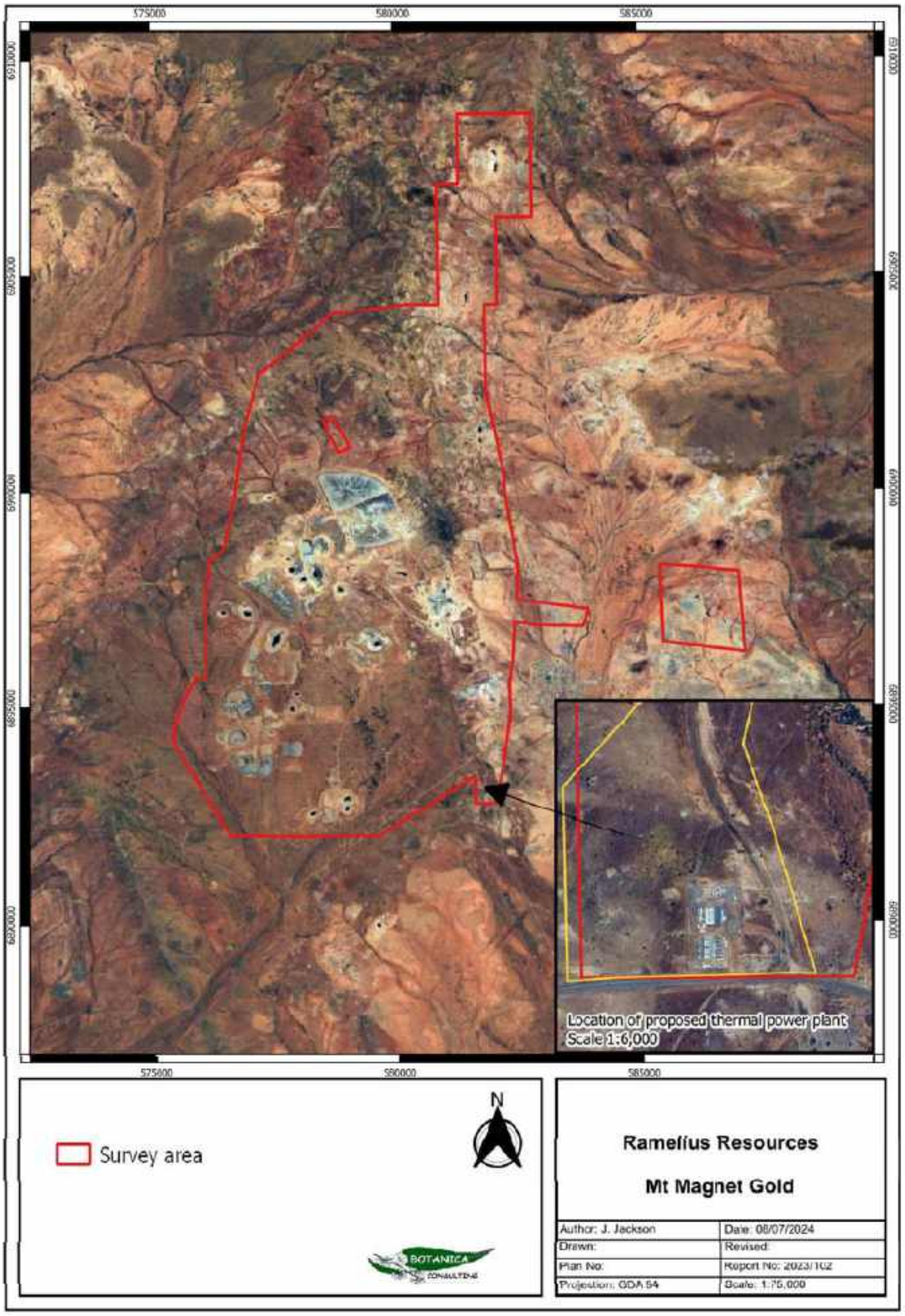


Figure 1: Mt Magnet Gold larger survey area of approximately 7783 ha and inset showing the location for the proposed thermal power plant

2. Desktop Review

Ramelius acquired the Mt Magnet Gold Project in 2010 from Harmony Gold. There have been numerous flora and vegetation surveys over the general area, dating back to 1993. Ramelius provided these documents to Botanica for review prior to the survey.

Documents reviewed included:

- Botanica Consulting (2016). *Level 1 Flora and Vegetation Survey and Targeted Search for Flora and Fauna of Conservation Significance for the Checkers Plant Road*. Prepared for Mt Magnet Gold Pty Ltd. August 2016.
- Niche Environmental Services (2009). *Level 1 Flora and Vegetation Survey over the Galaxy Project Area*. Prepared for Harmony Gold Mt Magnet, September 2009.
- Niche Environmental Services (2010a). *Level 1 Flora and Vegetation Survey over the Brown Hill Project Area*. Prepared for Harmony Gold Mt Magnet, March 2010.
- Niche Environmental Services (2010b). *Level 1 Flora and Vegetation Survey over the Morning Star Project Area*. Prepared for Harmony Gold Mt Magnet, March 2010.
- Niche Environmental Services (2010c). *Level 1 Flora and Vegetation Survey over the Perseverance Project Area*. Prepared for Harmony Gold Mt Magnet, March 2010.
- Niche Environmental Services (2010d). *Level 1 Flora and Vegetation Survey over the Saturn Project Area*. Prepared for Harmony Gold Mt Magnet, March 2010.
- Outback Ecology Services (2007a). *Blackman's Banded Ironstone Formations: Vegetation and Flora Survey*. Prepared for Mt Magnet Gold Pty Ltd. October 2007.
- Outback Ecology Services (2007b). *Sirdar and Vicqueries Banded Ironstone Formations: Vegetation and Flora Survey*. Prepared for Harmony Gold Mt Magnet. August 2007.
- Outback Ecology Services (2008). *Cavanaghs Banded Ironstone Formations: Vegetation and Flora Survey*. Prepared for Mt Magnet Gold Pty Ltd. March 2008.
- Outback Ecology Services (2012). *Level 1 Flora and Vegetation Assessment and Terrestrial Fauna Desktop Study: Galaxy Mining Project*. Prepared for Mt Magnet Gold Pty Ltd. September 2012.
- Western Botanical (2006a). *Conservation Values of remnant flora and vegetation within current mining areas at Harmony Gold, Mt Magnet*. Prepared for Harmony Gold Mt Magnet, October 2006.
- Western Botanical (2006b). *Preliminary Assessment of Conservation Values of Flora and Vegetation on Banded Ironstone Formations surrounding Harmony Gold operations, Mt Magnet*. Prepared for Harmony Gold Mt Magnet, October 2006.

Searches of the following databases were undertaken to aid in the compilation of a list of flora, vegetation and fauna taxa within the survey area:

- Priority/ Threatened Flora Database Search (DBCA, 2023b);
- Priority/ Threatened Ecological Communities Database Search (DBCA, 2023c);
- Priority/ Threatened Fauna Database Search (DBCA, 2023d);
- Dandjoo Database (DBCA, 2024);
- Protected Matters search tool (DCCEEW, 2024).

3. Results

3.1. Flora and Vegetation

No Threatened or Priority Flora taxa have previously been recorded in the area for the proposed thermal power plant (Figure 2). No Threatened or Priority Flora were recorded in this area during the survey in May 2024.

Table 3-1: Priority Ecological Community known to occur north of the survey area

Community	Conservation Status	Description (DBCA, 2023)
Austin Land System	Priority 3	Saline stony plains with low rises and drainage foci supporting low halophytic shrublands with scattered mulga; occurs mainly adjacent to lakes Austin and Annean below greenstone hill systems.

During the May 2024 survey, a quadrat (50 m x 50 m) was installed near the survey area. The area was described as an Acacia open woodland on clay loam plain. The vegetation condition was described as 'Good', The quadrat description is provided in Attachment A. Vegetation condition ratings are provided in Attachment B.

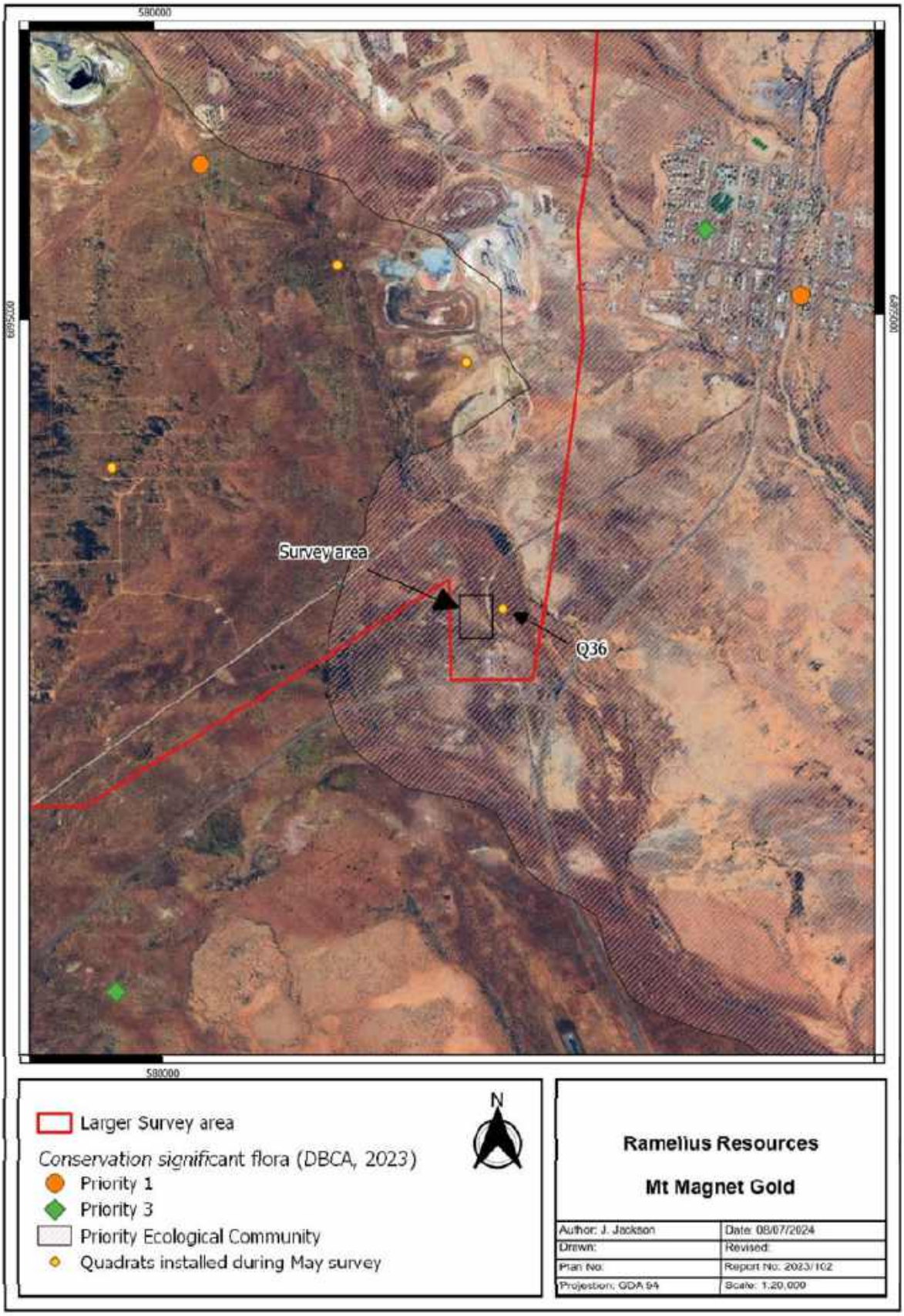


Figure 2: Significant flora and vegetation previously recorded within the survey area

3.2. Fauna

No conservation significant fauna have previously been recorded in the survey area. No conservation significant fauna were identified during the May 2024 survey including no evidence of fauna habitat that would support conservation significant fauna.

The area is heavily grazed by feral herbivores, with goat (*Capra hircus*) grazing being common in the Mt Magnet area for many years (APB, 1981).

4. Discussion

In summary, the survey area is in an area that has a high level of previous disturbance, including from historical mining and exploration, and goat grazing.

Although the area is located within a buffer of a PEC, this PEC occurs mainly adjacent to lakes Austin and Annean, these lakes are 35 km north and 135 km north of the survey area, and Botanica does not consider this survey area to be part of this PEC.

There are no other conservation values known to be present in the survey area and therefore clearing of native vegetation can be undertaken in compliance with *Schedule 1 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

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Outback Ecology Services (2008). *Cavanaghs Banded Ironstone Formations: Vegetation and Flora Survey*. Prepared for Mt Magnet Gold Pty Ltd. March 2008.

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Quality Assurance

An internal quality review process has been implemented to each project task undertaken by BC. Each document and its contents is carefully reviewed by core members of the Consultancy team and signed off at Director Level prior to issue to the client. Draft documents are submitted to the client for comment and acceptance prior to final production.

Attachment A: Quadrat description data sheet

Project Name: MMG		
Date: 27/05/2024	**Botanist:** JJ + AJ	**Photo number (NW corner):**575-577
Quadrat No: Q36	**Quadrat size/shape:** 50m x 50m/ Square	**Elevation (m):** 475m
Coordinates (GDA2020): 581884E; 6893196N		**Waypoint (NW Corner):** 302
Aspect: East	**Fire (yrs):** Long unburnt	**Condition rating:** Good
Landform: Flat/ Plain		
Coarse fragments on the surface: Very; abundant (50-90%)/ Medium gravelly; medium pebbles (6-20mm)/ Subangular		
Rock outcrop (abundance/runoff): Very Slow		
Soil (profile/field texture/soil surface): Brown/ Clay loam/ Firm		
Cover leaf litter: 10%		
Cover bare ground: 85%		
Upper stratum	**Mid-stratum**	**Lower stratum**
Growth form: Tree	**Growth form:** Shrub	**Growth form:** Chenopod Shrub
Height: 3-6m	**Height:** 1-3m	**Height:** 0.25-0.5m
Crown cover: <1%	**Crown cover:** <1%	**Crown cover:** 10-30%
Dominant taxa:	**Dominant taxa:**	**Dominant taxa:**
Acacia incurvaneura	*Acacia ramulosa*	*Maireana pyramidata*
ALL TAXA		
Acacia grasbyi		
Acacia incurvaneura		
Acacia ramulosa		
Eremophila galeata		
Eriachne pulchella		
Erodium cygnorum (A)		
Maireana oppositifolia		
Maireana pyramidata		
Maireana triptera		
Ptilotus obovatus		
Scaevola spinescens		
Solanum lasiophyllum		
Tecticornia disarticulata		

Attachment B: Vegetation Condition Ratings

Vegetation Condition Rating	Southwest and Interzone Botanical Provinces	Eremaean and Northern Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor		Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e., areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.