



# MT CARBINE BANKABLE FEASIBILITY STUDY

## CHAPTER 17: FORWARD WORK

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## Document History

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## CONTENTS

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1.	Context.....	1
1.2.	Purpose.....	1
<b>2.</b>	<b>FORWARD WORK.....</b>	<b>2</b>
2.1.	Resource and Geology.....	2
2.2.	Hydrogeology and Environmental Approvals.....	2
2.3.	Phase 3 Scoping Study.....	3
2.4.	Project Readiness.....	4
<b>3.</b>	<b>REFERENCES.....</b>	<b>5</b>
<b>4.</b>	<b>LIST OF ABBREVIATIONS.....</b>	<b>6</b>

## LIST OF FIGURES

Figure 1: Underground Resource and Existing Decline.....	4
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# 1. Introduction

## 1.1. Context

This Chapter 17: Forward Work shall be read in conjunction with Chapter 1: Executive Summary and additional references as listed in Section 3.

## 1.2. Purpose

The purpose of Chapter 17: Forward Work is to summarise the work to be undertaken after the completion of the feasibility study that doesn't necessarily form part of the execution work scopes. The reason for forward work may be to:

- Progress the delivery of scope items independent to the commencement of the project;
- Further define aspects of the scope to support the execution phase activities; or
- Pursue opportunities identified within the feasibility study.

## 2. Forward Work

### 2.1. Resource and Geology

#### 2.1.1. Resource Model

The resource model that was developed for the feasibility study contains a cut-off grade of 0.2% WO<sub>3</sub> ore. There is significant opportunity to improve the quantity of ore identified in the open pit by remodeling the resource to include ore below the 0.2% WO<sub>3</sub> cut off. The processing facilities are being fed by the LGS with a grade of approximately 0.07%, so any waste identified in the current model between the LGS grade, and the current cut-off grade could be classified as ore and further improve the economics of the open pit operations.

Additionally, the exploration activities identified ore near to the face of the pit, but the drilling in this area was insufficient to allow it to be included in the calculated reserves. Additional drilling in this area has the potential to increase the total tungsten reserves around the face of the pit, which has the potential to increase the ore quantities that can be mined in the early stages of the open pit development. This is detailed further in Chapter 3: Resources and Geology.

After completion of the feasibility study, EQR plans to perform infill drilling of the pit shell and adjacent areas to firm up the resource modelling in this area and develop an updated geological model, with the additional drilling data combined with reduced cut off grades, prior to the detailed mine plan development.

#### 2.1.2. Geotechnical Modelling

A greater understanding of the following geotechnical parameters is required prior to detailed pit design:

- Metasediments:
  - Structural dataset – defects within the rock mass both proximal and distal from the South Wall Fault and Iron Duke Fault;
  - Material strength parameters to allow for geotechnical analysis – again with spatial reference to the South Wall Fault and Iron Duke Fault; and
  - Groundwater – specifically porosity and permeability.
- Hornfels:
  - Further structural and material strength data to complement the existing historical dataset; and
  - Groundwater – porosity and permeability.
- Delineation of the South Wall and Iron Duke Faults – spatial location and material strength parameters.

This is detailed in Chapter 4: Mining.

### 2.2. Hydrogeology and Environmental Approvals

Hydrogeological and groundwater investigations are ongoing at Mt Carbine to support the approvals process as described in Chapter 10: Environment and Approvals.

In early 2022 additional investigation bores are proposed to be installed on-site to provide the following:

- Extra spatial distribution around the open pit, waste rock dump and tailings dam;
- Additional groundwater level and quality data in key areas;
- Assessment of regional structural features; and
- Hydraulic testing of additional bores to complement hydraulic conductivity data.

- Confirm or re-conceptualise the site's hydrogeological understanding including:
  - Groundwater levels and flow;
  - Influence of the pit and mine infrastructure on the groundwater regime;
  - Groundwater receptors;
  - Likely interactions and pathways; and
  - Impacts on groundwater regime.
- Numerical modelling:
  - Calibration to existing groundwater levels; and
  - Impact predictions based on future mine development.

The hydrogeology assessment will be conducted with additional input from water modelling consultants and geochemists to provide input into the development of the environmental approvals, that has already commenced, for Phase 1 and Phase 2.

### 2.3. Phase 3 Scoping Study

A scoping study for Phase 3 of the Mt Carbine complex development is planned to commence in early 2022. While this work will not directly impact the decisions or outcomes for the open cut operations, it will progress the future work planning for Mt Carbine and progress the process to supplement high grade ore for the operations and the completion of the open pit mining.

Of the currently identified resource, approximately 15% has been included in the mine plan for the feasibility study. Future studies such as the Phase 3 scoping study will seek to extract as much of the remaining resource as possible and future drilling programs are planned to further define the resource.

At an order of magnitude level, to inform a future pre-feasibility study and to capture the potential opportunities identified in **Error! Reference source not found.**, the scoping study activities are planned to include:

- Review of the existing resource model;
- An assessment of the appropriate cut-off grade;
- Cost and feasibility on a range of mining methods with a selection of preferred methods to be further investigated in the pre-feasibility stage;
- Assessment of minimum economical stope vein dimensions and level intervals;
- Stope design and sequencing;
- Identification of mineable stopes;
- Level design and ore development;
- Preliminary design and estimating of the mine access and key infrastructure;
- Equipment selection assessment;
- Estimate dilution and recovery factors;
- Development of a preliminary mine development, production and backfill schedule based on the different mining options assessed;
- Ventilation simulations to identify required fan sizes and rise diameters;
- Preliminary design and estimating of power supply, mine services and dewatering requirements;
- Economic evaluation;
- Review of owner operator vs contract operator benchmarks;

- Risk and opportunity assessment for the scoping study options; and
- Report with recommendations for further assessment in the pre-feasibility study.

The current resource model that will be used for the underground scoping study is shown in Figure 1. The extents of the existing historic decline is also visible in the model and can be seen below.

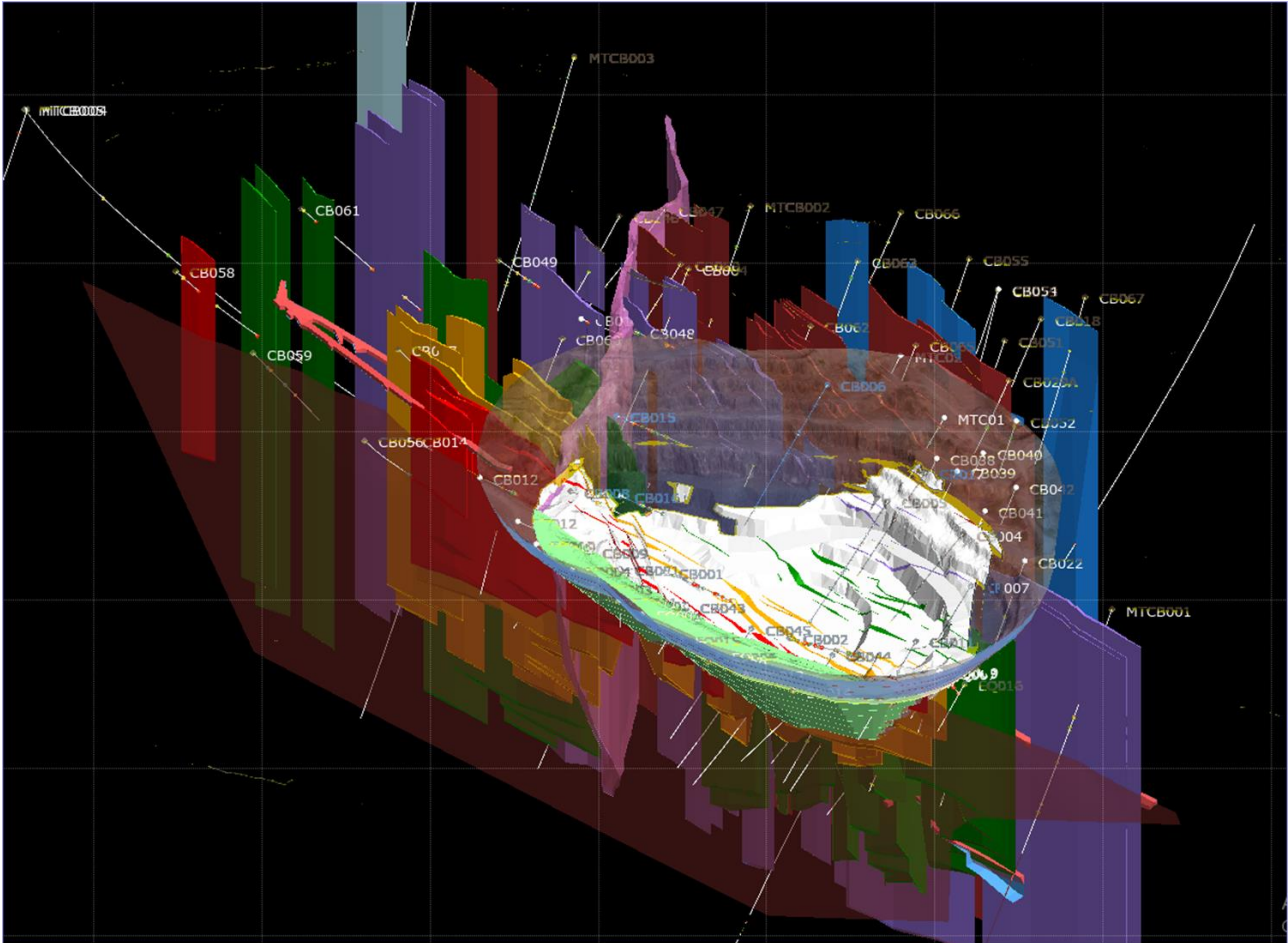


Figure 1: Underground Resource and Existing Decline

## 2.4. Project Readiness

EQR will continue to work with its project management partners to prepare for the commencement of the Project. Early works have commenced on the site prior to the completion of the feasibility study to ensure Phase 1 timelines are maintained. EQR will continue to progress the planning works required to commence the detailed design and construction activities as outlined in Chapter 7: Project Execution.

### 3. References

- Chapter 1: Executive Summary
- Chapter 3: Resources and Geology
- Chapter 4: Mining
- Chapter 7: Project Execution
- Chapter 10: Environment and Approvals



## 4. List of Abbreviations

Abbreviation	Description
EQR	EQ Resources Limited
LGS	Low grade ore stockpile
MTU	Metric tonne unit - one mtu equates to 10 kg. The term is used as the pricing basis for ammonium paratungstate .

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