



RESOURCES

*resourcing the new economy  
for a better tomorrow*



# EQ RESOURCES LIMITED

## Sensor based sorting to enhance beneficial reuse of barren waste products

31<sup>st</sup> March 2022

ASX : EQR



# Disclaimer



## Competent Person's Statement

- The information in this presentation partly relates to the outcomes of the Mt Carbine Bankable Feasibility Study, made available through the Company's website [www.eqresources.com.au/](http://www.eqresources.com.au/).
- The Company confirms that it is not aware of any new information that materially affects the information included in the corresponding market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

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# Mt Carbine Open-cut & Modernisation Project (BFS)

100%-owned by EQ Resources

# Mt Carbine Open-cut & Modernisation Project Overview



Located 130 km north of the city of Cairns in Far North Queensland, Australia

Situated within the Far North Queensland critical mineral province

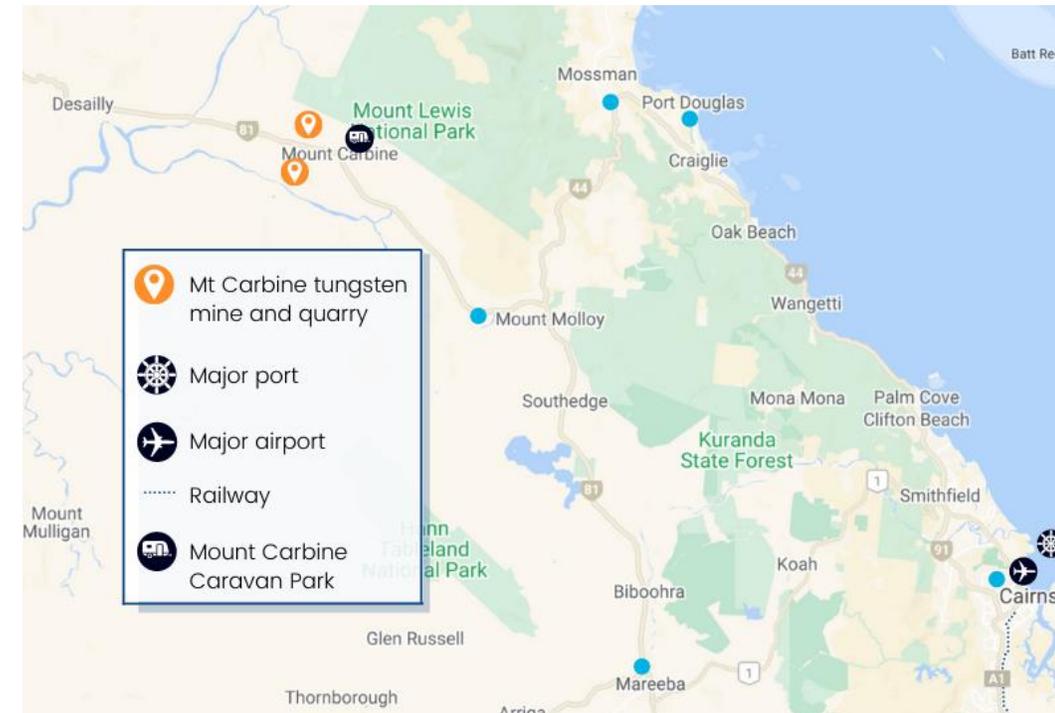
Operating tungsten mine and rock quarry resulting in no mine waste

Established mine-to-ship logistics chain to ensure the project remains scalable and reliable over its multi-decade life

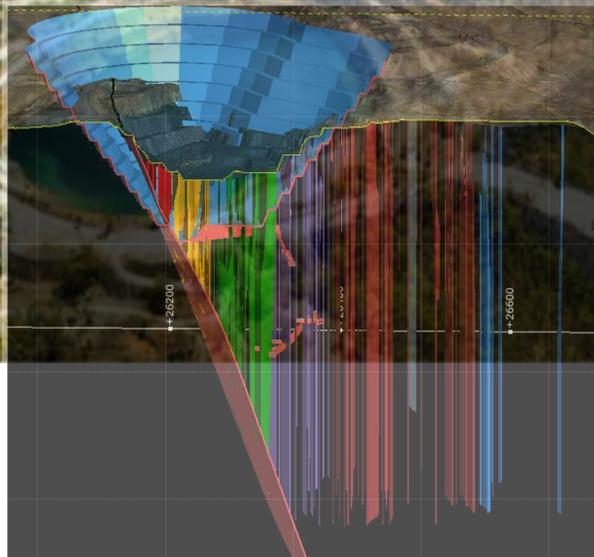
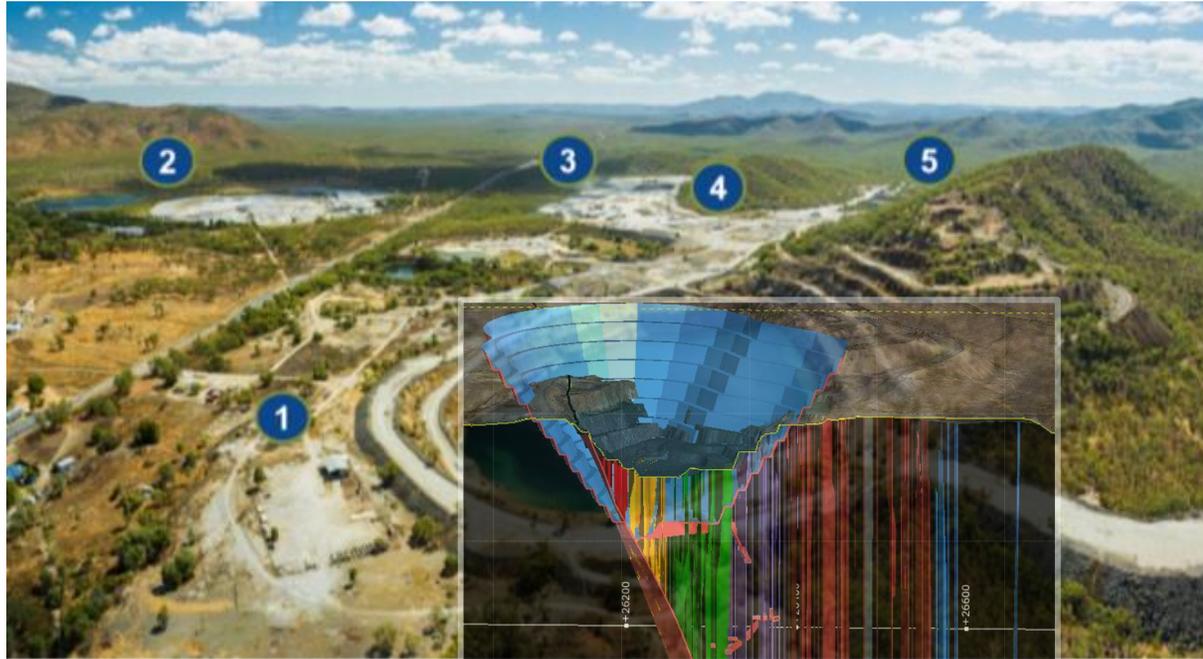
Binding off-take agreement in place for tungsten product

Industry-leading BFS completed and currently advancing through final stages of permitting & project funding

Project Location Map



# Site Overview



- 1 Office, Lab & Core Shed
- 2 Tailings Pond / Retreatment Plant
- 3 Quarry & OOSR Stockpile
- 4 XRT Sorter
- 5 LG Ore Stockpile



# Mt Carbine Overview



Quarry Screening & Extractive operations ongoing producing feed for XRT Sorter and Gravity processing plant



Beneficial reuse of barren mine wastes for quarry products



Full scale-up of SBS technology implementation on tailings and waste dump towards 500Kt/a



Installation of a second XRT Sorter to increase production throughput capacities



Underground drilling and feasibility assessment within the coming +/-12 months; renewed underground development +/-24 months

# Sorting Overview

## Sorter Feed

- Ideal **particle** fractions (liberation)
  - +6 to -20mm
  - +20 to -40mm
  - Works fine on +6 to -40mm
  - Mineral identification down to 100micron in particle
- Feed types
  - Discrete mineralisation is best
  - Alternatively distinct characteristic or property (colour/magnetic/mineralisation)
  - Disseminated ore bodies challenging (e.g. porphyry copper)
  - Hard rock is better
  - Sensor Selection is critical (XRT/EM/HSI/Laser/Colour)

## Feed preparation

- Critical for Sorters:
  - minimal fines carry over
  - minimal moisture (surface moisture fine if clean rocks)
  - Even feed distribution across belt

# General CAPEX & OPEX



## CAPEX

- XRT Sorters are +/- AU\$2-Million for a 50tph prep screen and sorting plant
  - Sorter/framework/feeders/screen/conveyors/feed bin/large compressor/dryer/chiller/MCC

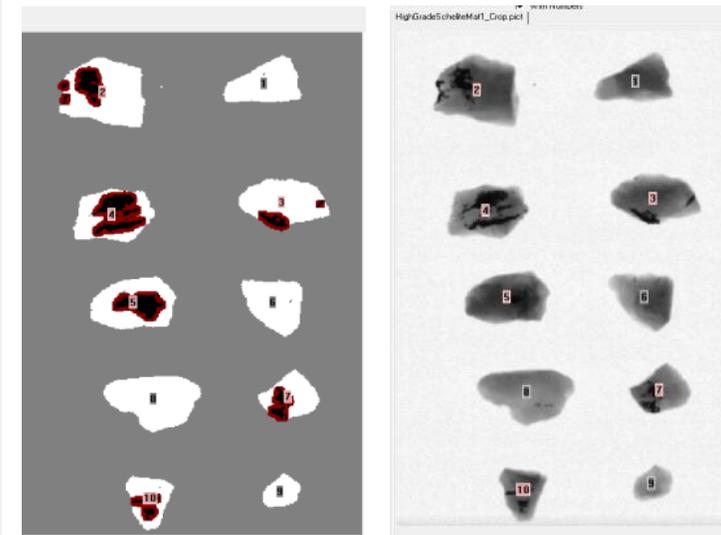
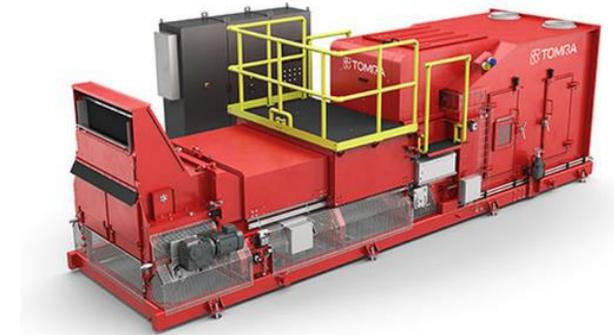
## OPEX

- Overview
  - \$3-\$4 for initial crushing & screening cost
  - \$1/t for sorting of material (including power)
  - +/-100kW power requirement

# Sensor Based Sorting

## Tomra X-ray Ore Sorter

- The **waste rock stockpiles** at the Mt Carbine site contain **tungsten mineralisation**. These stockpiles were previously crushed and screened directly for quarry material with tungsten in the quarry aggregates **“being lost”**.
- The Mt Carbine operation has demonstrated a reliable method of recovering tungsten from the existing material ahead of its use as quarry material and then the beneficial reuse of the barren waste.
- The successful implementation of the sorter and refinements to the operations of the processing plant have resulted in **>78% tungsten recovery** from the low-grade stockpile with barren waste being used for aggregate



*Typical X-Ray scan showing  
Tungsten Mineralization*

# Low-Grade Stockpile

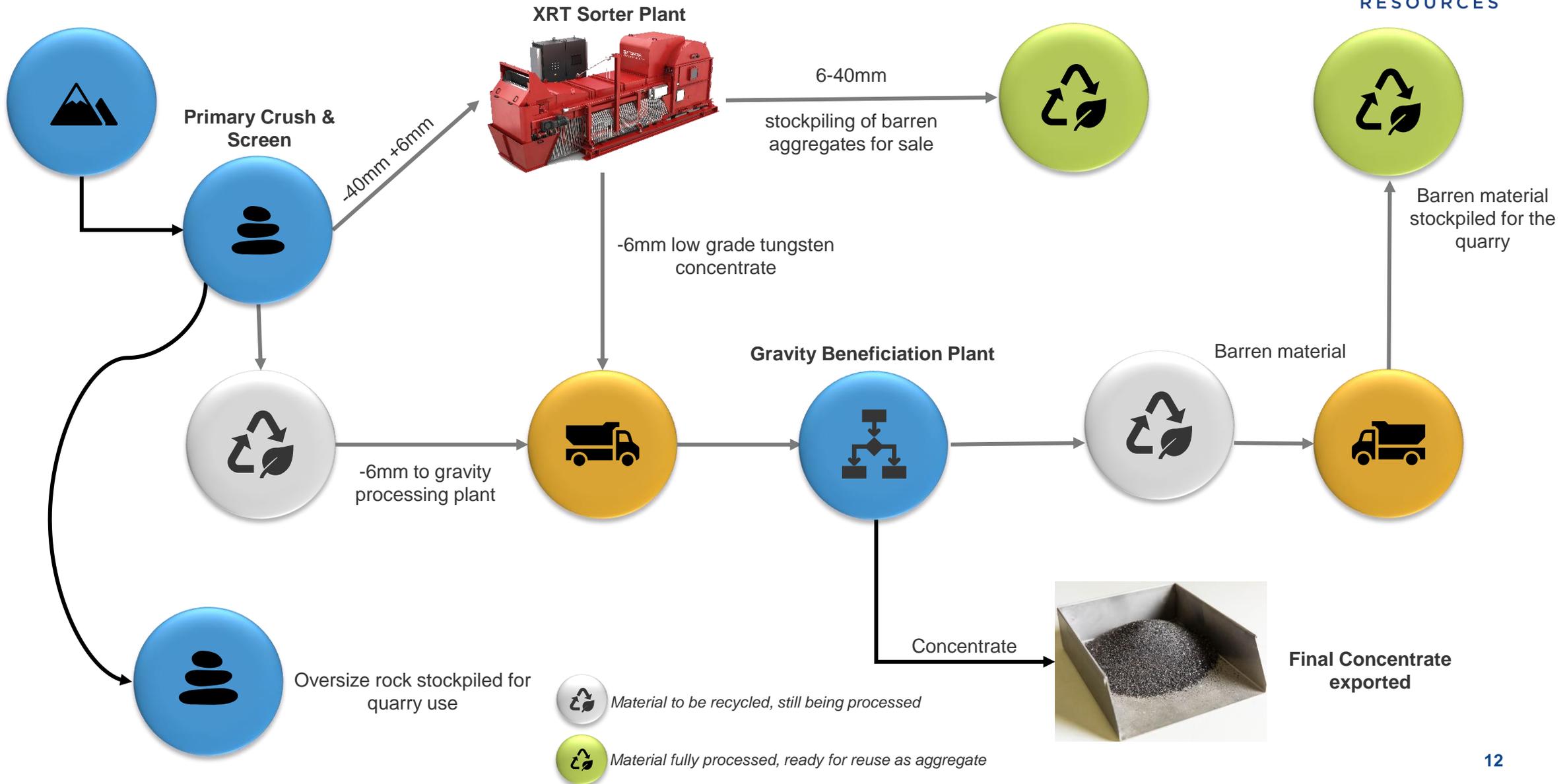
LGS Mining area



# Low-Grade Stockpile



# Mt Carbine Material Flow

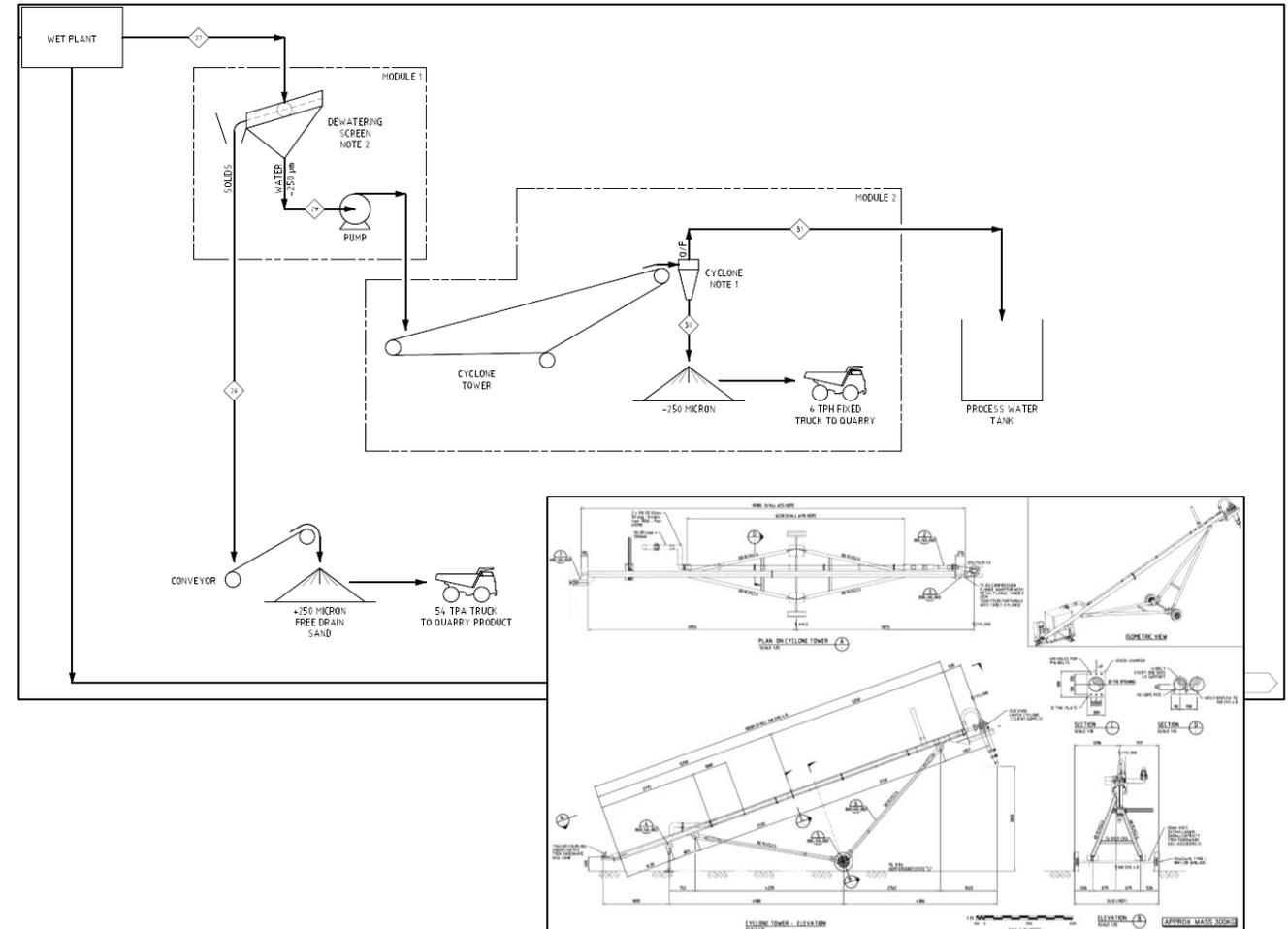


# Project Overview



## Development Activities – Dewatering System

- All processing plant reject sent to dewatering system
- +250 micron free draining sand screened off and trucked to quarry (sand used for road construction)
- -250 micron ultrafines dewatered and trucked to quarry (ultrafines used as cement ingredient)
- Water recycled back into process water tank for re-use



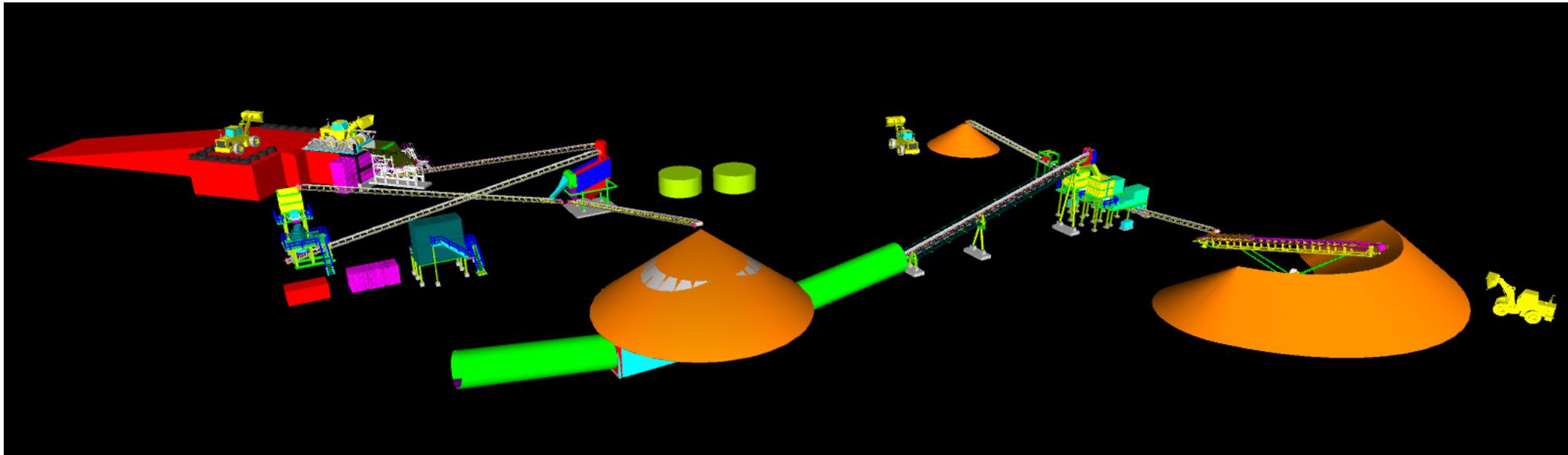
# XRT Sorter Setup



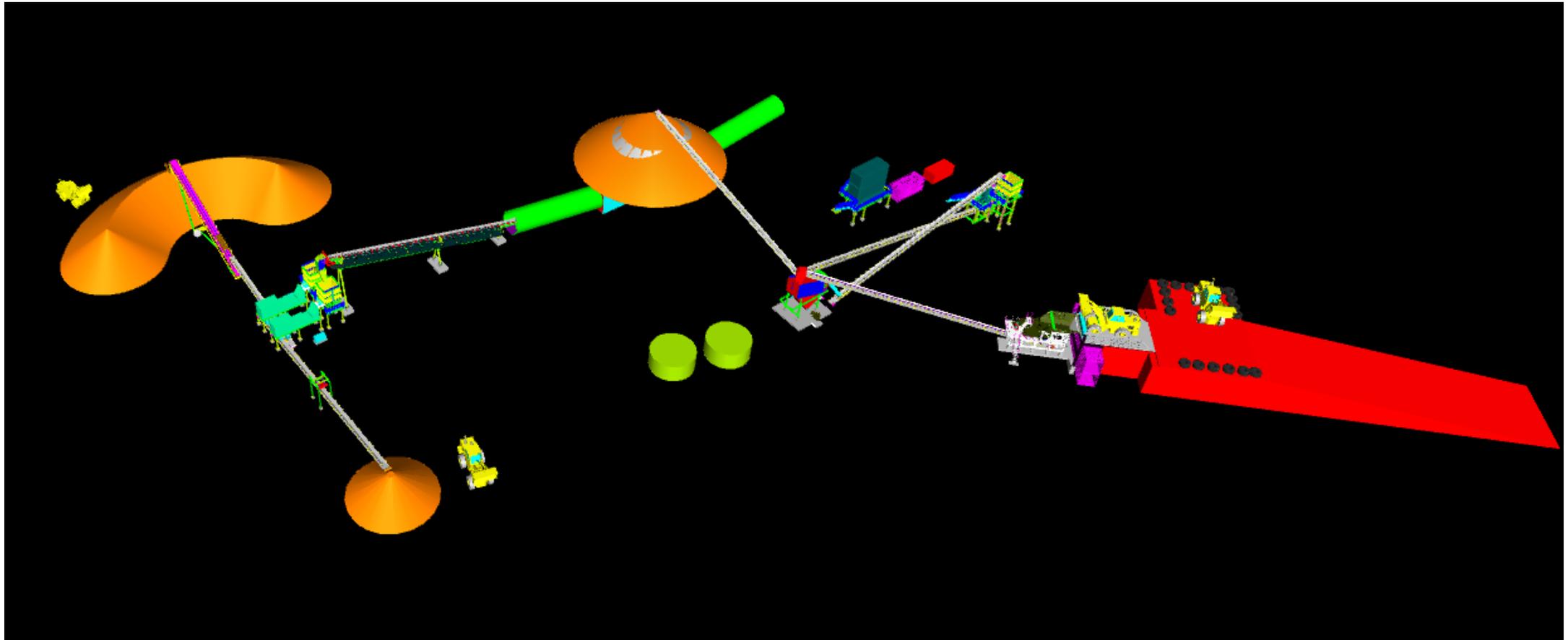
# Addition of 2<sup>nd</sup> XRT Sorter



# Crushing, Screening & Sorting Phase 2

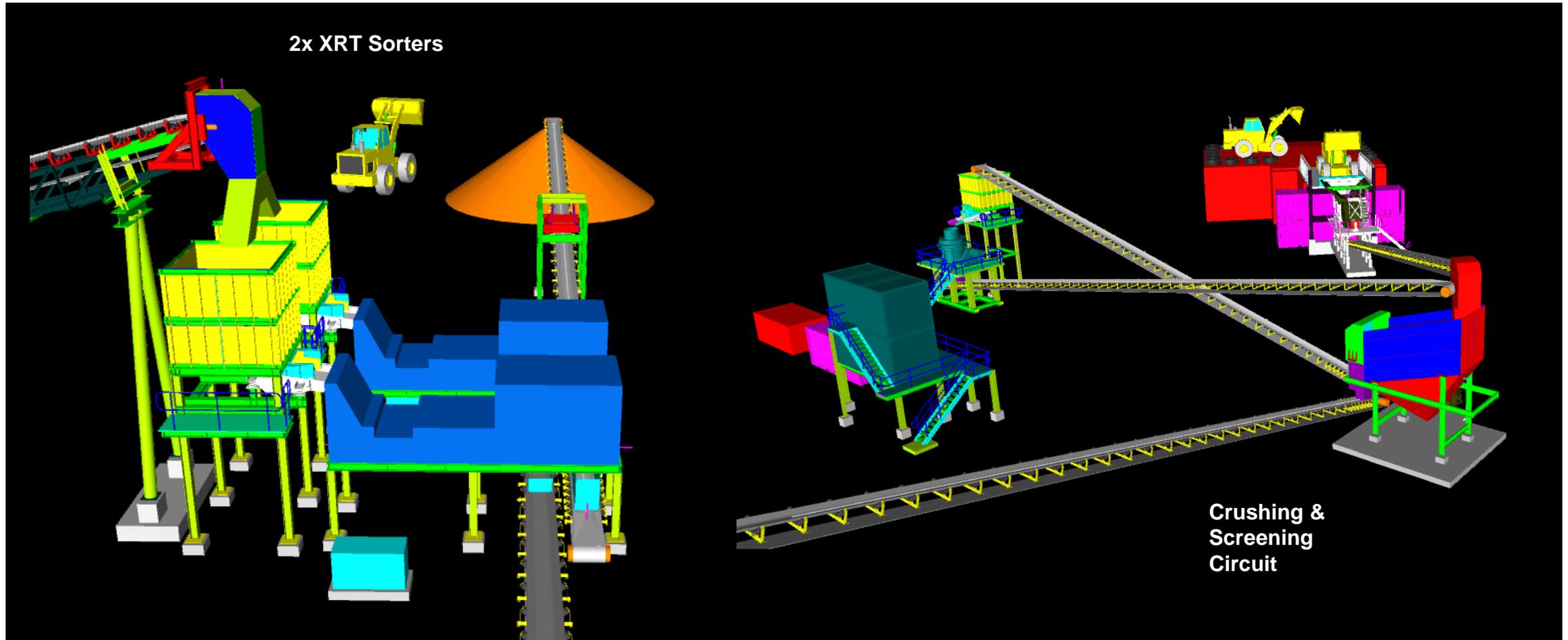


# Crushing, Screening & Sorting Phase 2

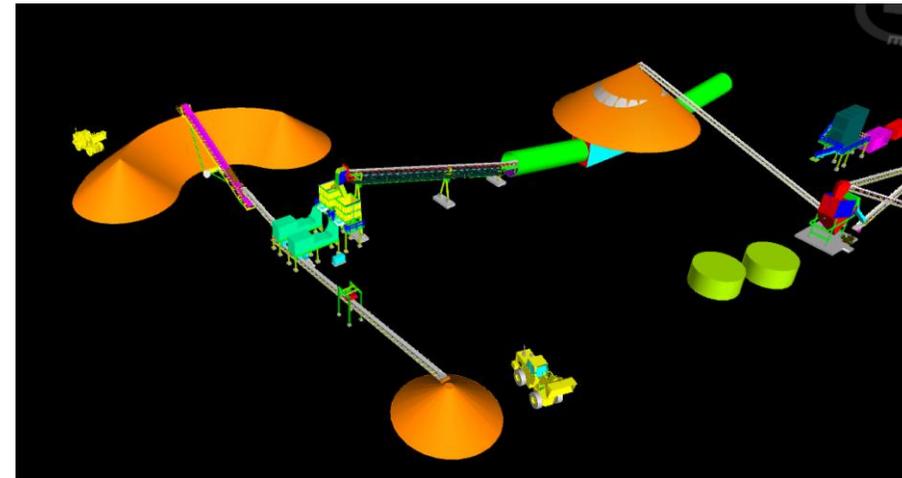
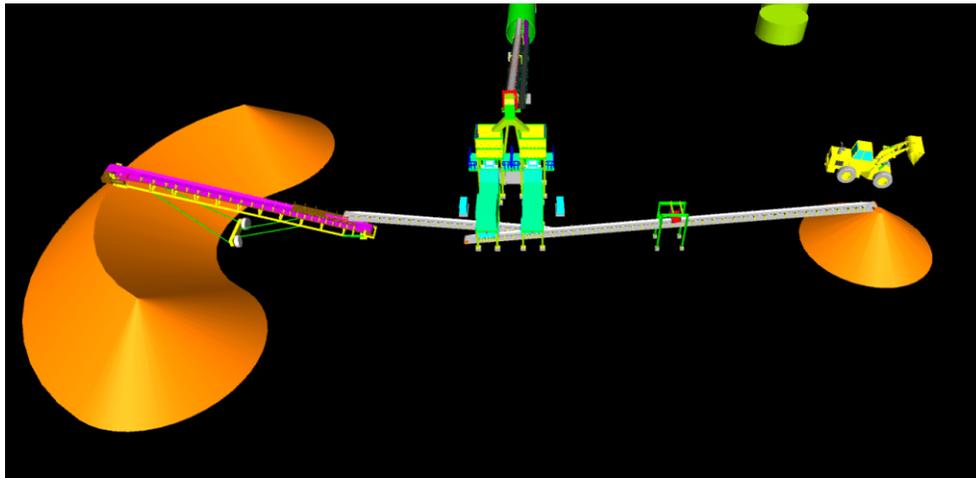
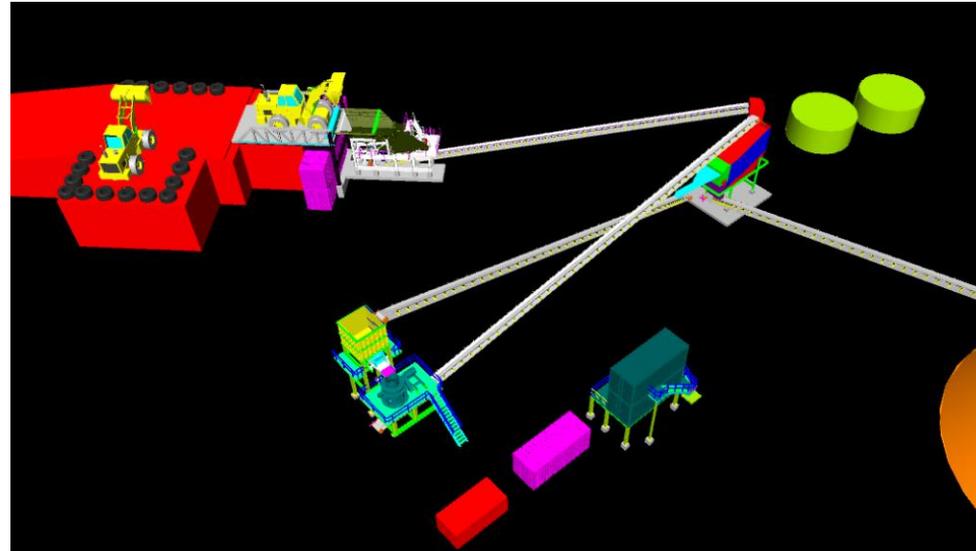


# Phase 2 – Expanded Crushing & XRT Sorting Circuit

- In line with 1MTPA extraction permit
- Allowing for combined feed material from stockpile and open pit



# Crushing Plant Phase 2 – 3,000 – 5,000tpa



# Quarry Products through beneficial re-use



Gabian  
(100-170mm)



XRT Sorter rejects  
(6-40mm)



Aggregate for Sale  
(10mm)

## Main Quarry Products

- Road Base (2.1/2.2/2.3/2.5)
- 20/10 Concrete Stone
- 150 cross over stone
- Aggregates
  - 7mm; 10mm; 14mm; 16mm; 25mm)
- Manufactured sand

# Thank You



Questions?

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