EA APPLICATION SUPPORTING REPORT

SAVANNAH GOLDFIELDS LTD

Appendix 2 Waste Rock Dump Concept Design and Management Plan (ATC Williams, 2025)

REPORT

SAVANNAH GOLDFIELDS LTD
ABN: 79 644 301 655

Agate Creek Gold Mine

Waste Rock Dump Concept Design and Management Plan

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CONTENTS

1 INTRODUCTION 1

1.1 Background 1
1.2 Project Understanding 1
1.2.1 Current Operations 1
1.2.2 General Arrangement of the Proposed Expansion 1
1.3 Scope of Works 2
1.4 Report Summary and Structure 2

2 SITE DESCRIPTION 3

2.1 Climate Conditions 4
2.2 Geology 5
2.3 Hydrogeology 6
2.4 Hydrological Characteristics and Topography 6
2.4.1 Regional Context 6
2.4.2 Site Context 8

3 WASTE ROCK CHARACTERISATION 9

3.1 Static and Kinetic Leach Column Tests 9
3.2 Geochemical Results 10
3.2.1 Acid Base Account 10
3.2.1.1 pH Value 10
3.2.1.2 Electrical Conductivity 10
3.2.1.3 Total Sulphur 10
3.2.1.4 Maximum Potential Acidity (MPA) 10
3.2.1.5 Acid Neutralising Capacity (ANC) 10
3.2.1.6 ANC:MPA Ratio 10
3.2.1.7 Net Acid Production Potential (NAPP) 10
3.2.2 Net Acid Generation (NAG) Test 11
3.2.3 Metal/Metalloid Analyses 11
3.2.4 Static Water Quality Analyses 11
3.2.5 Kinetic Leach Column Water Quality Analyses 11
3.3 Geotechnical and Geological Ground Profile 12
3.3.1 Rock Fill 12
3.3.2 Residual Soils 12
3.3.3 Weathered Rock 12
3.3.4 Rhyolite Zone 13
3.4 Waste Rock Geochemical Strategy 13

4 WASTE ROCK MANAGEMENT 14

4.1 Waste Rock Mining and Segregation 14
4.2 Water Management Strategy 14
4.3 Waste Rock Monitoring and Reporting 15
4.3.1 Laboratory-Based Testing 15
4.3.2 Visual Inspections 15
4.3.3 Reporting 15

5 WASTE ROCK DUMPS CONCEPTUAL DESIGN REVIEW 16

5.1 Pit and Waste Rock Quantities 16
5.2 Geometrical Design Review 18
5.3 Stability Analysis 18
5.3.1 Stability Section 18
5.3.2 Material Properties 21
5.3.3 Seismicity 22
5.3.4 Stability Analysis and Outcomes 22
5.4 Stability Analysis Conclusion 25

TAILINGS.WATER.WASTE.

5.5 Waste Rock Placement 26
5.6 Construction Considerations 26

6 DECOMMISSIONING AND CLOSURE 27

6.1 General 27
6.2 Cover System 27

REFERENCES 28

TABLES

TABLE 1: NAPP CLASSIFICATION CATEGORIES 10
TABLE 2: WATER MANAGEMENT STRATEGY 14
TABLE 3: PITS EXCAVATED MATERIALS 16
TABLE 4: ESTIMATED WASTE ROCK VOLUMES 16
TABLE 5 GEOMETRICAL DESIGN 18
TABLE 6: HOEK-BROWN MODEL PARAMETERS FOR FOUNDATION MATERIALS 22
TABLE 7: TARGET FACTOR OF SAFETY 23
TABLE 8: ADOPTED GEOTECHNICAL PARAMETERS 23
TABLE 9: STABILITY ANALYSIS – FACTOR OF SAFETY 23
TABLE 10: CALCULATED FACTOR OF SAFETY 25

DIAGRAMS

DIAGRAM 1: SITE LOCALITY MAP 3
DIAGRAM 2: REGIONAL DRAINAGE 7
DIAGRAM 3: LOCAL DRAINAGE 8
DIAGRAM 4: SITE FEATURES AND DRAINAGE 17
DIAGRAM 5: WRD SECTION GEOMETRY 19
DIAGRAM 6: PIT 1, LOW GRADE WRD, PIT 6 WRD SECTION LOCATIONS 20
DIAGRAM 7: NW PIT WRD SECTION LOCATION 20
DIAGRAM 8: SW PIT WRD SECTION LOCATION 21
DIAGRAM 9: LONG-TERM DRAINED – WITH BOX CUT AND ADDITIONAL BUTTRESSING 25

CHARTS

CHART 1 RAINFALL AND EVAPORATION HISTORICAL MONTHLY AVERAGES 5

TAILINGS.WATER.WASTE.

APPENDICES

APPENDIX A SITE PLANS
APPENDIX B STABILITY MODEL OUTPUTS

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1 INTRODUCTION

1.1 Background

Savannah Goldfields Limited (SVG) engaged ATC Williams Pty Ltd (ATCW) to review and update existing engineering assessments prepared by ATCW and to suit the revised Agate Creek Gold Mine (ACGM) plan. The ACGM plans to expand the current mining operations to 250,000 tpa.

The engineering assessments ATCW prepared will form part of an EA Amendment and Progressive Rehabilitation Closure Plan (PRCP) application with the Department of Environment, Tourism, Science, and Innovation (DETSI). This report presents the Waste Rock Dump Concept Design and Management Plan for the updated proposed mining plan. The purpose of this report is to provide a framework for the management of waste rock for Agate Creek Gold Mine (ACGM).

1.2 Project Understanding

ACGM, owned and operated by SVG is located approximately 40 kilometres (km) south-west of Forsayth in North Queensland. Proposed key site infrastructure to support mining operations includes multiple pits, Run of Mine (ROM) Pad, Waste Rock Dumps (WRDs), mine infrastructure areas, and surface water management controls (diversion drains and sediment dams).

During 2022, ATCW completed a Waste Rock Dump Management Plan (WRDMP) report for the previously proposed mine plan, which is reported under 121208.01-WRD-R01-Rev0 dated August 2022 **[4]**. Since this time, SVG have revised the mine plan and the proposed site features have changed. This WRDMP report has been prepared to update ATCW's existing report to reflect changes to the proposed mine plan.

1.2.1 Current Operations

ACGM activities currently encompass the extraction of gold ore and waste rock from the Sherwood open Cut Pit situated at approximately the midpoint of ML100030. Ore is transported to the ROM pad where it is temporarily stockpiled. Waste rock is transported to the Sherwood Waste Rock Dump WRD on-site. SGL currently extract up to 45,000 tpa.

1.2.2 General Arrangement of the Proposed Expansion

SVG are proposing to expand current operations across the Sherwood and Sherwood West resource areas under ML100030, extracting up to 250,000 tpa across 4 individual open cut pits. The expansion of operations will include the following mine domains:

- Four open cut pits;
- Five waste rock dumps (WRDs);
- Topsoil stockpile areas;
- Expanded administrative buildings and other mining infrastructure (roads, camp etc.);
- Expanded Run of Mine (ROM) pad;
- Magazine;
- Water storages; and
- Sediment ponds.

Ore is to be transported off site to the nearby Georgetown processing plant for gold extraction. Access to the site is to remain as per past operations, via Agate Creek Road and to Georgetown via Forsayth Road.

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1.3 Scope of Works

ATC Williams (ATCW) Pty Ltd have been engaged by SVG (via Ardent Pty Ltd) to assist with updating the documentation required for the EA amendment and in support of the PRCP for the Project. This report presents the Waste Rock Dump Concept Design and Management Plan (WRDMP). The purposed of this report is to provide a framework for the management of waste rock for ACGM. This report specifies how environmental issues related to identifying, handling and containment of waste rock will be managed during the mine life cycle. This report also outlines the performance objectives and how these will be measured, monitored and reported.

The scope of this report is to detail a practical basis to achieve its purpose whereby management measures can be part of the mine planning that includes:

- Waste rock characterisation;
- Waste rock management (separation and placement);
- Waste rock dump conceptual design;
- Monitoring and reporting; and
- Decommissioning and closure of the WRDs.

1.4 Report Summary and Structure

This report outlines the conceptual design parameters for three Waste Rock Dumps (WRDs) proposed as part of the Agate Creek Gold Mine expansion. The WRDs are required for the placement of waste rock from the four pits that are proposed within the mine lease. Limited data exists regarding the rock strength and foundation materials, as such, several assumptions have been made to enable the concept design to be undertaken. Further details must be provided prior to the detailed design of the WRD structures to confirm the design parameters. The WRDs have a large footprint and a detailed staging/sequencing plan should be considered as part of the progressive rehabilitation plan for the site to optimise water management and capping requirements wherever possible.

The structure of this report, to address the above purpose and scope, is as follows:

Section 2: Provides the project site description in the context of the proposed waste rock management strategy and site setting, covering climatic, geological, hydrological and hydrogeological conditions.

Section 3: Presents an overview of the existing waste rock characterisation regarding the potential for acid and metalliferous drainage (AMD), including its geochemistry and predicted seepage volumes.

Section 4: Outlines the waste rock management system and key performance criteria and details the monitoring requirements.

Section 5: Presents the waste rock dumps (WRDs) conceptual design, including placement and construction considerations.

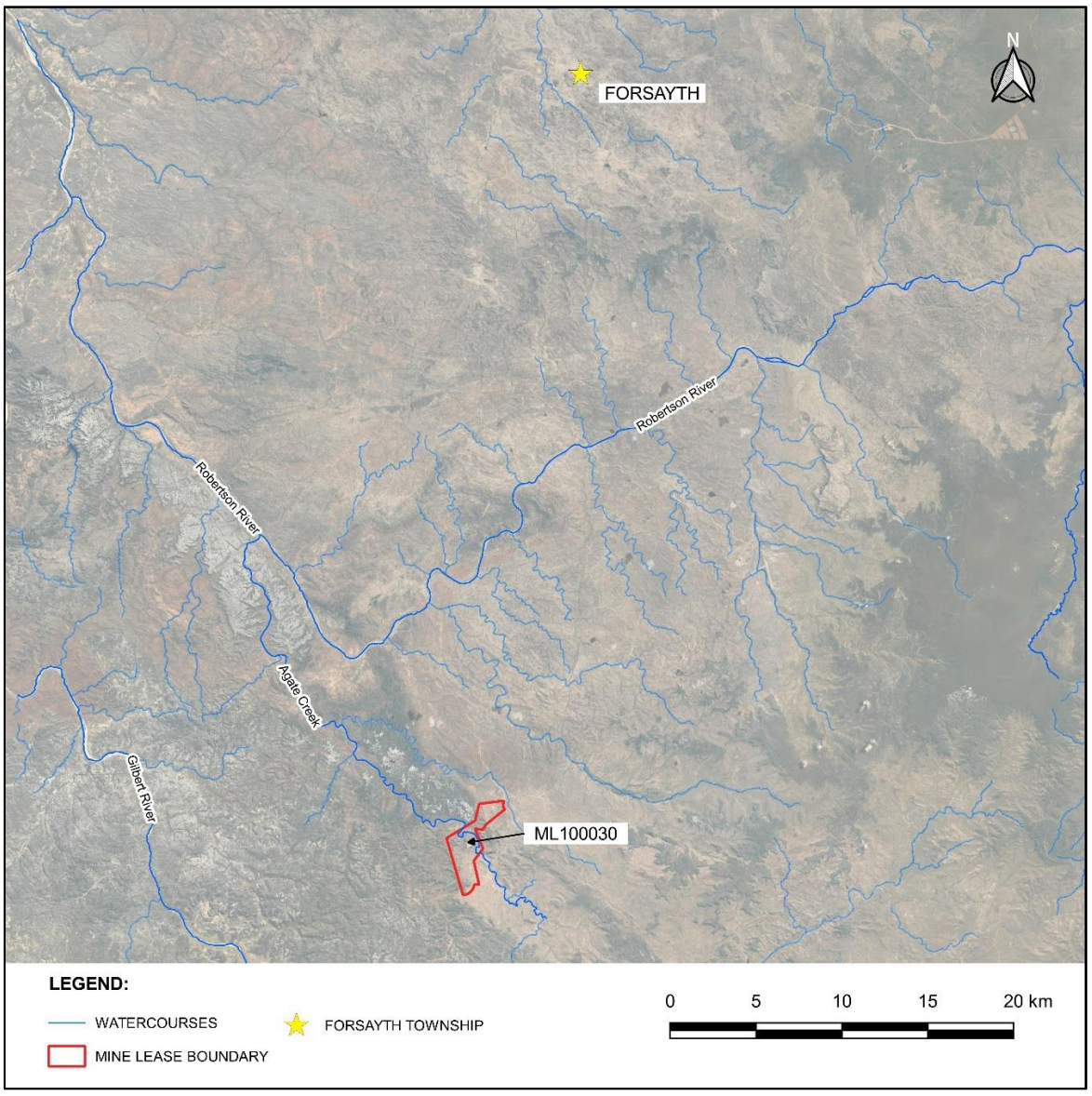
Section 6: Outlines a preliminary decommissioning and closure plan for the WRDs.

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2 SITE DESCRIPTION

Agate Creek Gold Mine site is located approximately 40 km south-west (Rungulla Road) of Forsayth, Far North Queensland. The mine is part of the larger Agate Creek Gold Project, which also includes a mineral development licence MDL402, and exploration permits for areas north of the mine (EPM17788 and EPM26460). However, this project focuses only on the mine area within ML100030, as shown on **Diagram 1**. Typical site conditions are shown in **Photo 1.**

DIAGRAM 1: SITE LOCALITY MAP



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PHOTO 1 – TYPICAL NATURAL SITE CONDITIONS

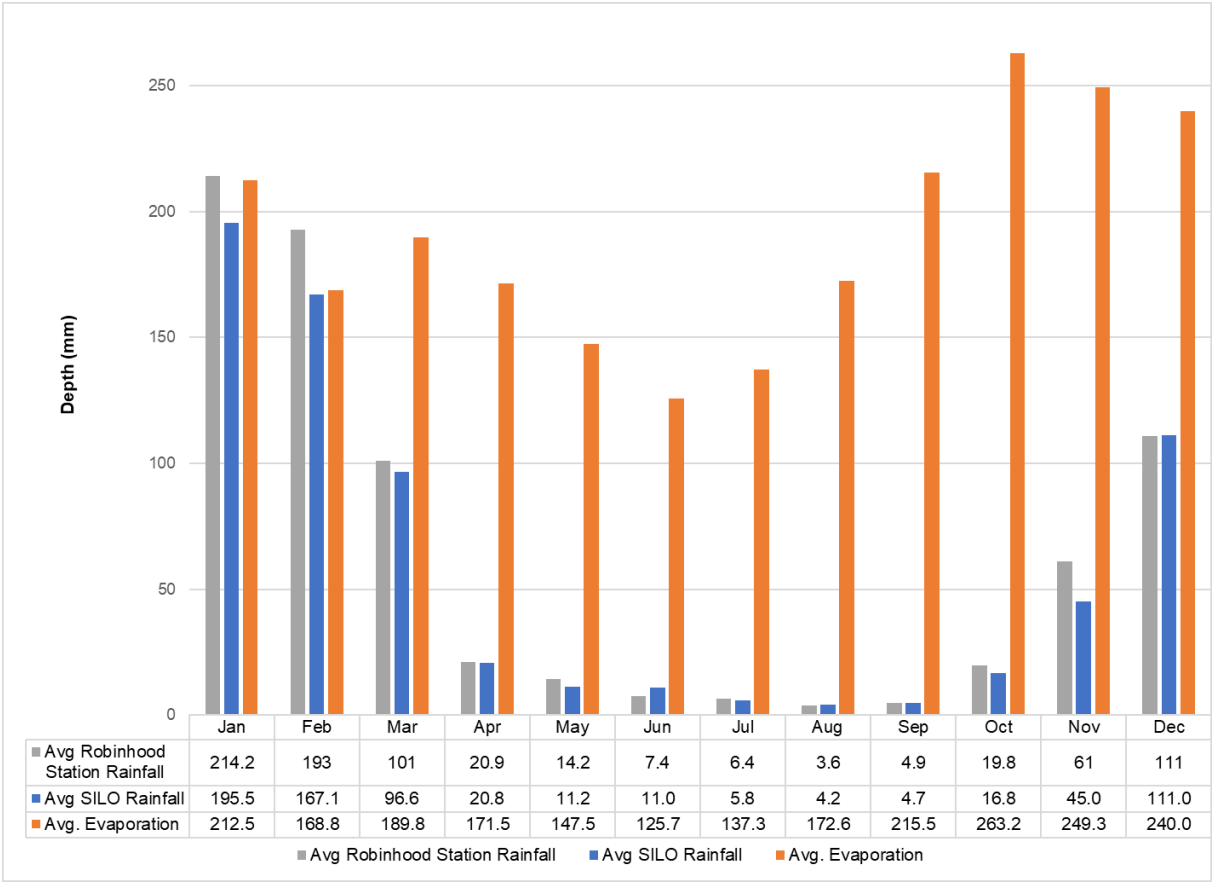


2.1 Climate Conditions

The ACGM site is located in Far North Queensland region which has a tropical climate characterised by a distinct wet season (December – March) and dry season (April – November) as shown in the chart below. Average annual rainfall is approximately 1085 mm, with most falling during the wet season. The nearest meteorological weather station to the site is the Bureau of Meteorology's (BoM) Robinhood Station (Station 030104, est. Oct 1966) located some 24.4 km to the northeast of the site.

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CHART 1 RAINFALL AND EVAPORATION HISTORICAL MONTHLY AVERAGES



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Robinhood Station Rainfall	214.2	193	101	20.9	14.2	7.4	6.4	3.6	4.9	19.8	61	111
Avg SILO Rainfall	195.5	167.1	96.6	20.8	11.2	11.0	5.8	4.2	4.7	16.8	45.0	111.0
Avg. Evaporation	212.5	168.8	189.8	171.5	147.5	125.7	137.3	172.6	215.5	263.2	249.3	240.0

Rainfall data can significantly vary when affected by broader weather patterns, such as 'El Niño Southern Oscillation', and additional tropical cyclones that occur among November and April **[5]**. For instance, Agate Creek has experienced as much as 202 mm in a single day during the wet season and as much as 1,281 mm in a single month (January) as per SILO data **[5]**.

2.2 Geology

As per the Waste Rock Characterisation report by C&R Consulting (CRC) (2022) **[7],** the following information was provided:

> The Agate Creek deposit is located in the central portion of the Proterozoic Etheridge Province. These Proterozoic Etheridge metamorphic rocks were extensively intruded by Silurian to Early Devonian granitoid batholiths, and dominantly felsic Carboniferous to Early Permian magmatic complexes. The mineralisation at Agate Creek is related to the emplacement of Permo-Carboniferous porphyritic rhyolite and andesite extrusives and intrusives, commonly referred to as the Agate Creek Volcanic Group.
>
> Gold mineralisation at Agate Creek is hosted by a low sulphidation, epithermal system consisting of quartz-chalcedony veining, stockwork and breccia. Host rock lithology is predominantly porphyritic rhyolite or andesite that occupy shallow, south-east dipping thrust faults in Silurian granodiorite. This host rock is principally volcanic in origin. Therefore, for the purpose of this report, the waste rock is inferred to be entirely composed of felsic volcanics with silicified veins and/or breccia.
>
> A series of complex hydrothermal alteration assemblages surround the Agate Creek ore body. These assemblages range from a distal, ubiquitous propylitic zone (chlorite +/- carbonate-epidote-pyrite-haematite) grading inwards to a more proximal, variably argillic to sericitic zone (clay +/- quartz-sericite-pyrite) and locally phyllic zone (silica +/- pyrite or iron oxide). Most of

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the hydrothermal alteration in the Agate Creek expansion area is predominantly clay +/- silica, sericite and/or pyrite (now weathered to iron oxide).

2.3 Hydrogeology

The groundwater monitoring network set up by C&R Consulting (CRC) consists of ten monitoring bores within an area of approximately 1.5 km^2 that incorporates all four proposed voids. CRC have indicated that the hydraulic conductivities of the lithologies at Agate Creek are in the very low to low range **[8]**.

The results from CRC's reporting **[8]** suggests that the groundwater flow direction generally follows the surface topography whereby water moves from high elevation on the western boundary to the low elevations of Agate Creek. CRC **[8]** have also stated that due to the elevation difference between the bed of Agate Creek and the eastern monitoring bore, the groundwater systems present within the mining lease do not impact or interact with flow in Agate Creek.

The groundwater assessment completed by CRC **[8]** for the Agate Creek mine expansion found that the risk to groundwater systems was low, with poor hydraulic conductivities restricting the zone of influence to within the mining lease boundary for several decades.

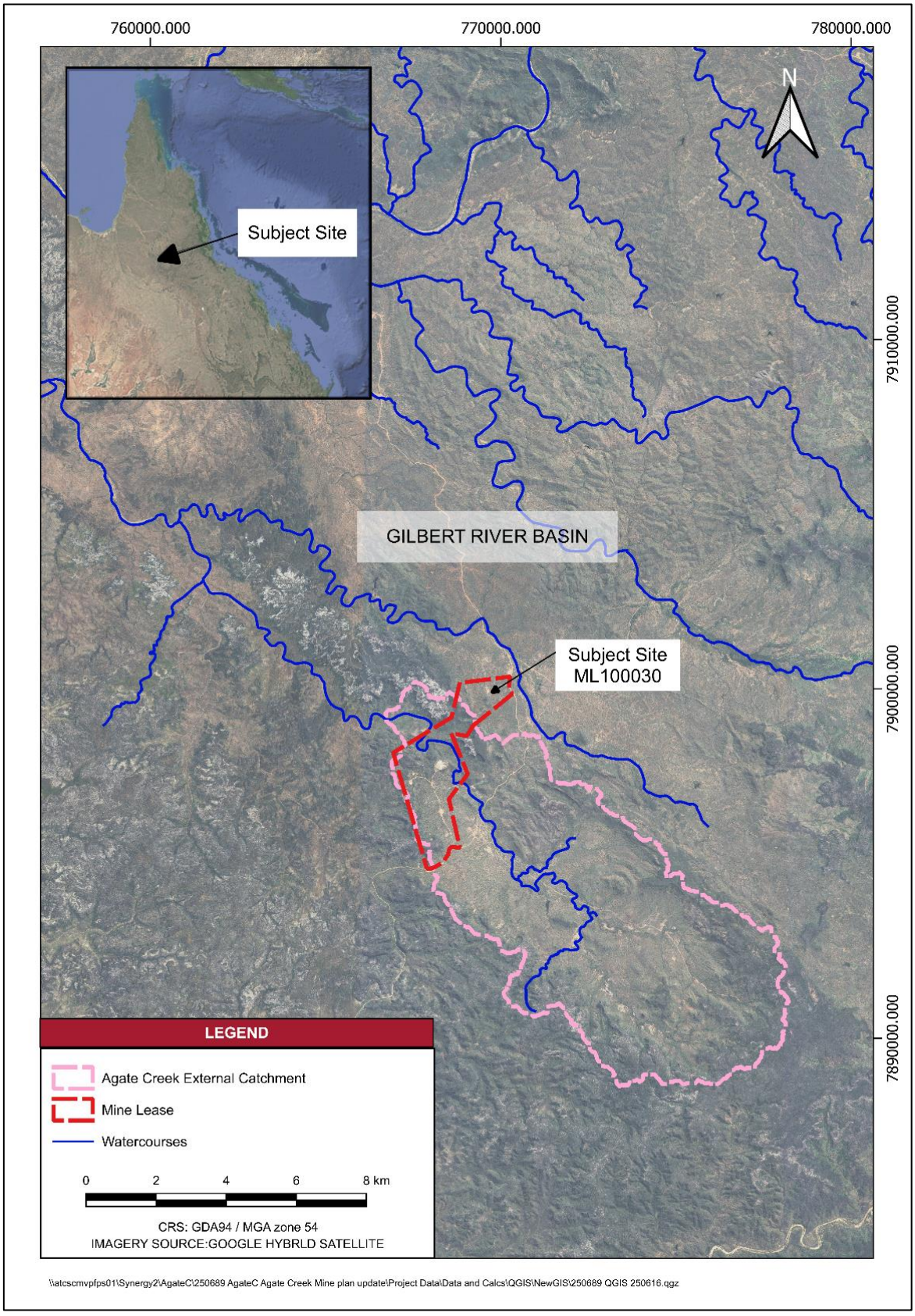
2.4 Hydrological Characteristics and Topography

2.4.1 Regional Context

The ACGM site forms part of the Gilbert River catchment located within the wider regional Gilbert Basin in Far North Queensland. The site has ephemeral waterways directly discharging to Agate Creek which is the immediate receiving watercourse for the site, located centrally within the mine lease running from east to northwest. Agate Creek subsequently discharges northwest until it intersects Robertsons River, approximately 23 km northwest of the site. The Robertsons River then joins the Gilbert River, located approximately 26 km downstream from the point of confluence of Agate Creek and Robertsons River. The Gilbert River travels further downstream by approximately 361 km until it reaches the Gulf of Carpentaria on the northwest, which is the final discharge point for the entire Gilbert Basin. The regional watercourses are depicted on **Diagram 2** noting that the mine lease has a large upstream catchment of approximately (64.8 km^2) that discharges through the site as Agate Creek.

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DIAGRAM 2: REGIONAL DRAINAGE

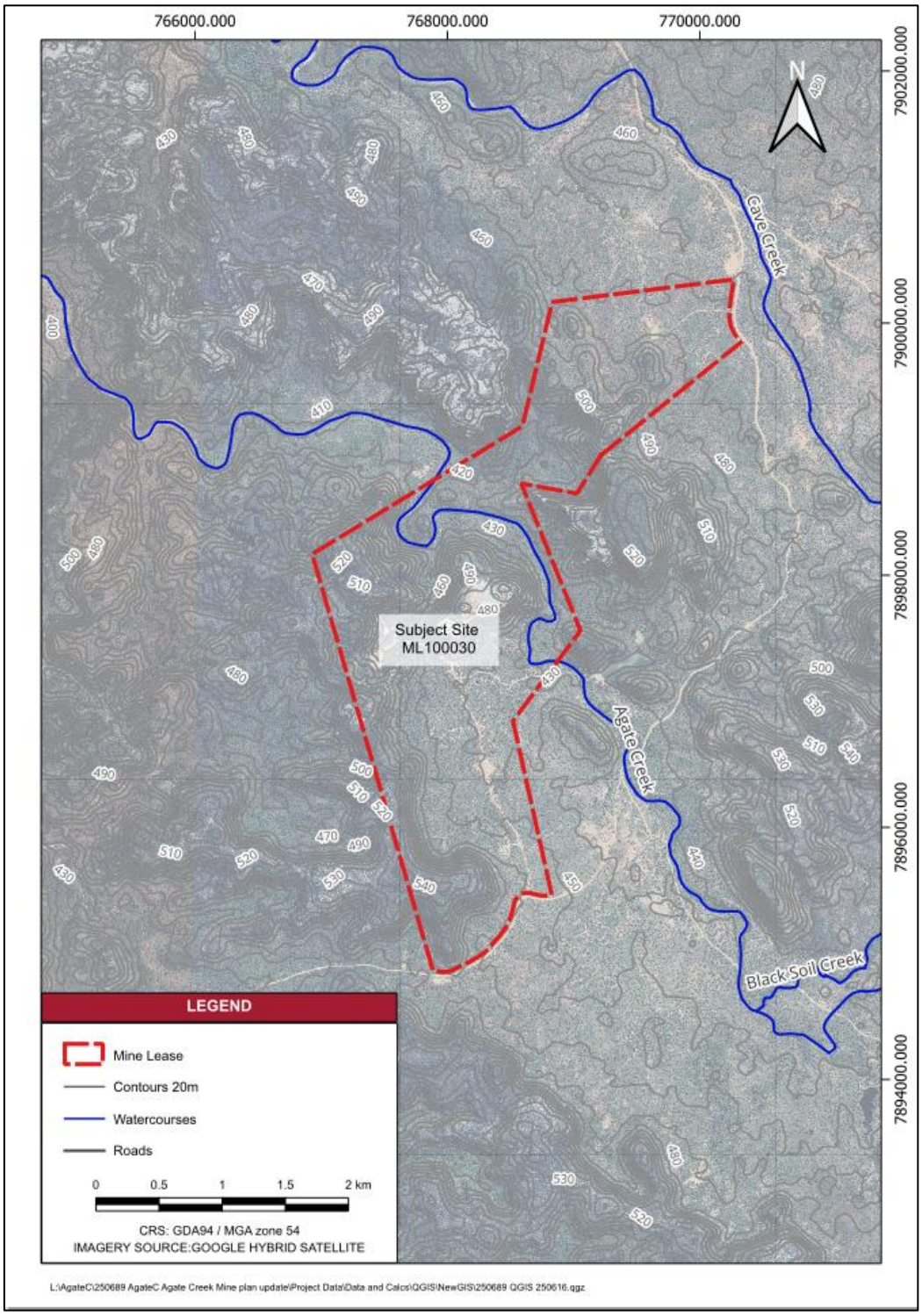


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2.4.2 Site Context

The subject site is located on a valley within the Agate Creek catchment. The site is bordered to the east and west by an existing ridge and to the south by the Rungulla Road. The majority of the site drains centrally to Agate Creek that has a large upstream catchment as described in **Section 2.4.1 .** Elevation data over the entire lease ranges between approximately RL 422 m to RL 529 m. Local drainage lines at the site are depicted **Diagram 3**.

DIAGRAM 3: LOCAL DRAINAGE



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3 WASTE ROCK CHARACTERISATION

A waste rock geochemical assessment programme has been completed by C&R Consulting Pty Ltd (CRC) **[7]** and defines the geochemistry of waste rock materials associated with the proposed ACGM project. The assessment involved the analysis of 260 rock samples collected from 27 drill holes across the six proposed pits. The waste rock is inferred to be entirely composed of felsic volcanics with silicified veins and/or breccia.

3.1 Static and Kinetic Leach Column Tests

Each of the 260 samples underwent static geochemical testing for:

- pH;
- Electrical conductivity (EC);
- Total sulphur;
- Acid neutralising capacity (ANC);
- Net acid generation (NAG);
- Net acid production potential (NAPP);
- Major dissolved anions for Cl, F and SO4; and
- Total metals/metalloids for Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Se, V and Zn.

Furthermore, four selected kinetic leach column samples underwent additional static geochemical testing for:

- Moisture content;
- Major dissolved cations for Ca, Mg, Na and K; and
- Total metals/metalloids for Mo, Sb, Te, Th, Tl and U.

Individual kinetic leachate column were also conducted by CRC for each of the four samples, with a leachate-analysis cycle undertaken on a fortnightly basis.

Each kinetic leachate column underwent kinetic geochemical testing for:

- pH;
- EC;
- Total dissolved solids (calculated);
- Hardness;
- Acidity;
- Alkalinity;
- Major cations for Ca, Mg, Na and K;
- Major anions for Cl, F and SO4; and
- Dissolved metals/metalloids for Al, As, B, Ba, Be, Cd, Co, Cr, Cu, Fe, Hg, Mo, Mn, Ni, Pb, Sb, Se, Te, Th, U, V and Zn.

3.2 Geochemical Results

3.2.1 Acid Base Account

3.2.1.1 pH Value

The pH value of waste rock samples ranged from slightly acidic to slightly basic. In general, most waste rock samples are in the neutral range. However, some slightly acidic samples are also prevalent. **[7]**

3.2.1.2 Electrical Conductivity

The EC of waste rock samples have predominately low, averaging 43.5µS/cm. Apart from an outlier in Pit 2 (1,680 µS/cm), EC values in all waste rock samples are below 500 µS/cm. **[7]**

3.2.1.3 Total Sulphur

The total sulphur of waste rock samples were mostly below the limit of reporting [BLOR]), therefore the waste rock is barren (<0.1%) with respect to total sulphur. Almost all values above the barren level (i.e. >0.1%) were still classified as very low (<0.55%). **[7]**

3.2.1.4 Maximum Potential Acidity (MPA)

The maximum potential acidity that could be generated by the waste rock samples, ranges from 0.15 to 93.3 kg H2SO4/t and has a low median value of 0.15 kg H2SO4/t. **[7]**

3.2.1.5 Acid Neutralising Capacity (ANC)

ANC is related to the amount of acid neutraliser (usually carbonate minerals) in the waste rock sample. The ANC of the waste rock samples ranges from 0.25 to 28.0 kg H2SO4/t eq., with a low median of 3.0 kg H2SO4/t eq. **[7]**

3.2.1.6 ANC:MPA Ratio

The 260 waste rock samples have an ANC:MPA ratio ranging from 0.08 to 183.01, with a median value of 11.93. According to these ANC:MPA ratios, with respect to acid-generation **[7]**:

- 204 samples are considered to be of negligible to low risk;
- 41 samples are deemed to be a potential risk; and
- 15 samples are regarded as an increased risk.

3.2.1.7 Net Acid Production Potential (NAPP)

NAPP is a theoretical calculation of the net acid producing (or consuming) value of a rock sample. Generally speaking, samples with a negative NAPP value are non-acid forming (NAF), and those with a positive NAPP value are PAF **[7].**

TABLE 1: NAPP CLASSIFICATION CATEGORIES

ARD Classification	NAPP Value (kg H2SO4/t)
Potentially acid forming (PAF)	> 10
Uncertain	0 to 10
Non-acid forming (NAF)	-50 to 0
Acid consuming material	< -50

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Of the 260 waste rock samples, 45 have positive NAPP values. However, most of these positive samples are in the uncertain range, with only three samples having values greater than 10. These are associated with either Pit 2 or Pit 6. **[7]**

3.2.2 Net Acid Generation (NAG) Test

CRC adopted a NAG test to directly measure the net amount of acid produced by a waste rock sample. Of the 260 waste rock samples, CRC stated that there are only 11 samples that could be categorised as PAF when the NAG and total sulphur values are considered **[7]**:

- Three samples in Pit 2 (14% of sample size);
- One sample in Pit 5 (6% of sample size); and
- Seven samples in Pit 6 (5% of sample size).

The PAF samples make up less than 14% of the total sample size for their respective areas. Noting that Pit 5 is no longer proposed.

3.2.3 Metal/Metalloid Analyses

CRC have stated that the metals/metalloid concentrations of the 260 waste rock samples have been compared against the National Environment Protection Measure (NEPM) health-based investigation level (HIL) guidelines for 'Recreational C' – public open space scenario (National Environment Protection Council [NEPC], 2013), and all analysed metals/metalloids would meet the 'Recreational C' limits. **[7]**

3.2.4 Static Water Quality Analyses

Static water quality multi-element scans were undertaken on water extracts from the 260 waste rock samples. This test work was carried out in order to assess water quality characteristics (particularly salinity and soluble anion levels) that could potentially be sourced from the waste rock in leachate.

There are no specified contaminant release limits specified from the current EA for salinity and soluble anions. Consequently, the results for the waste rock water extracts have been compared with the ANZECC and ARMCANZ (2000) guidelines for livestock drinking water.

CRC stated the following findings **[7]**:

- The EC values of the water extracts from the waste rock samples generally represent fresh water and are well below the ANZECC and ARMCANZ (2000) livestock drinking water trigger limit of 5,970 µS/cm.
- Fluoride exceeded the low-risk trigger level for livestock drinking water on multiple occasions. These exceedances may be of a concern because elevated fluoride is prevalent in most of the waste rock. However, these fluoride levels are not unusual for the Agate Creek area. As a volcanic province, much of the rock, surface water and groundwater are enriched with respect to fluoride. Therefore, the risk of fluoride, sourced from the Agate Creek waste rock, further enriching fluoride levels in the receiving environment is low.
- Except for one value (a sample in Pit 2), all the dissolved sulphate level results were below the ANZECC and ARMCANZ (2000) beef cattle livestock drinking water trigger limit of 1,000 mg/L.

3.2.5 Kinetic Leach Column Water Quality Analyses

Kinetic leach column water quality (KLC) analyses were conducted on four composite samples. The KLC tests were carried out in order to understand potential for the Agate Creek waste rock to leach environmental contaminants into the surrounding environment. The KLC results are compared with Australian and New Zealand guidelines for fresh and marine water quality (ANZG, 2018).

Summary outcome of the kinetic leach testing are as follow:

- pH remains relatively stable over the course of the tests. While a marginal decrease over time is noted at most sites, no samples show a significant increase in acidity over time It should be noted that both pH and acidity are inherent properties of the mineralogical

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composition. Significant changes would only be expected if there were large changes in the overall mineralogy (e.g. total dissolution of phases) during the leaching process.

- EC results indicate that each sample would still be considered freshwater (i.e. <1,560 µS/cm; refer to ANZECC and the Queensland Government i.e. <1,500 µS/cm). Therefore, salinity is not an issue associated with the Agate Creek. While electrical conductivity is not accumulative, the end products, upon evaporation (i.e. salts), are accumulative.
- Most metal concentrations were found to be either compliant with relevant guideline values, or only exceeded these values in the cumulative results at the end of testing. With respect to metals and metalloids, cumulative values may be of use in assessing the total load that may build up by evaporation in any downstream sediments and may be available for later mobilisation in flow events.
- Only four metals or metalloids were regularly recorded above their respective aquatic ecosystem guideline values:
  - Dissolved aluminium;
  - Dissolved boron;
  - Dissolved copper; and
  - Dissolved zinc.
- There is an expected overall accumulation of fluoride with successive leaching in one sample (CCGC339), while others (and particularly levels of fluoride), particulates are approximately constant with successive leaches. Fluoride trended down to the compliance level of 2 mg/L by the 4th leach, supporting the overall proposition that the overall environmental risk from fluoride is low.

3.3 Geotechnical and Geological Ground Profile

The soil profile is predominantly of weathered/dried soils overlaying a weakened and fractured rock system in the base.

3.3.1 Rock Fill

The waste rock stored primarily comprises of felsic volcanics with silicified veins and/or breccia. Although it has not been subjected to geotechnical testing, it is conservatively assumed the mined waste rock is competent rock and will be able to maintain an angle of repose of 37° on the working face of the waste rock dumps.

3.3.2 Residual Soils

According to site personnel, the surface soils are comprised of 2 metres of completely weathered rhyolites/granites and/or decomposed soils **[9]**. A conservative assessment of residual soils was taken to be 5 metres below the surface level and assumed the material will act as a clay from intense weathering and erosion. Geotechnical parameters were highlighted with the Hoek Brown material model, corresponding to the structural strengths of the rock mass classifications done by Gecko Geotechnics **[9]**.

3.3.3 Weathered Rock

In contrast to the residual soils at the surface, the material encountered at depths of approximately 5 metres comprises moderately to highly weathered granitic/rhyolitic rock, characterised by limited strength. The structural properties of this basal rock were evaluated by Gecko Geotechnics [9] through rock mass classification analysis. These findings are summarised in **Table 6** alongside other materials classified using the Hoek–Brown criterion.

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3.3.4 Rhyolite Zone

At depths beyond 50 m, the subsurface comprises fresh to slightly weathered rhyolite, exhibiting a uniaxial compressive strength (UCS) in the range of approximately 25–100 MPa. This material was excluded from the geotechnical assessment (Section 5.3) on the basis of its high strength.

3.4 Waste Rock Geochemical Strategy

A waste rock geochemical strategy is to be developed and undertaken to mitigate the risks associated with potential PAF waste rock and to assist the waste rock placement programme. The following measures are proposed to be implemented as part of the on-going waste rock geochemical strategy:

- Progressive characterisation of the waste rock to predict the proposed placement and disposal strategy and the quality of runoff and seepage generated. This will include but not limited to the following environmental parameters which could potentially cause significant environmental impacts:
  - Salinity and acidity;
  - Alkalinity and dissolved metals;
  - Metalloids; and
  - Non-metallic organic substances.
- Develop a material balance, disposal, and sampling plan to demonstrate and verify the placement and/or encapsulation of PAF waste rock to minimise the risk of acid mine drainage,
- Undertake monitoring, research, and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of the placed materials, including acid mine drainage management, sediment and erosion control, and vegetation cover establishment.

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4 WASTE ROCK MANAGEMENT

The waste rock will be placed in separate out-of-pit WRDs with sufficient offsets to the Pits. Suitable NAF waste materials will be used to construct a WRD basal platform, liner (if required) and encapsulating cap, for the migration of contaminants from the overlying dump to the receiving environment.

There are five (5) proposed waste rock dumps within the ACGM site, to store waste rock materials during mine operations; Pit 1 WRD, Pit 6 WRD, NW WRD, SW WRD, and the Low-grade WRD. The WRDs are proposed to be a low-profile structures, varying in height of approximately 30 - 50 m. Only the Low-Grade WRD will remain in the post-closure phase, while all other WRDs are temporary structures and will also be utilised for backfilling of pit voids.

4.1 Waste Rock Mining and Segregation

The key to the success of this report is to identify the various waste rock material types in the field and at the active mining face. This approach will require a material identification system, including:

- Survey control on a regular basis (as required) based on material movement records to ensure the material types are identified and recorded.
- Maintaining an up to date waste rock block model.
- Mapping of pit walls and mined faces according to the lithological domains used onsite.
- Blast hole logging to assist in this waste characterisation.
- Visual inspections and sampling to differentiate NAF and PAF material.

The sampling and testing programme is to be completed on the same schedule as ore determination (if practically possible) to include it in the mine schedule.

Records of the volume of each waste rock type mined should be kept. This methodology provides control such that waste rock types are mined and delivered to the correct waste rock storage area.

All of the above information should be used to assist in updating the waste rock mining schedule and quantities and the waste rock block model.

4.2 Water Management Strategy

In addition to the segregation of waste rock, the sites water management strategy was developed to segregate acid rock drainage, neutral mine drainage and saline drainage. This water management strategy is summarised in **Table 2**. This is summarised from ATCW's Water Management Plan **250689_R03 WMP Rev 0** dated September 2025 **[1]**.

TABLE 2: WATER MANAGEMENT STRATEGY

Structure / Area	Drainage	Details
Open Cut Pits	Neutral Drainage, Acid Rock Drainage	It is proposed that water contained within the Open Cut Pit be pumped to the Water Storage Dam over the operational period of the project.
Water Storage Dam	Saline Drainage, Acid Rock Drainage	The proposed Water Storage Dam will contain site impacted stormwater runoff from the Pits and dirty water from Sediment Ponds. The operating objective for this storage is to maintain sufficient capacity to contain site water and limit overflow, as well as provide make-up water storage.
Sediment Ponds	Sediment Laden Runoff	A number of sediment ponds are proposed to capture runoff from the WRDs and disturbed areas. The objective is to

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Structure / Area	Drainage	Details
		capture sediment within the Sediment Ponds and transfer this dirty water to the Water Storage Dam. There is potential to release this water directly off-site in large rainfall events, subject to water quality testing.

4.3 Waste Rock Monitoring and Reporting

The waste rock management strategy involves separation and placement of NAF and PAF waste rock. The process will be controlled on a laboratory-based analysis that uses rapid onsite techniques to verify placement area. Information gathered will be added to the geological block model.

4.3.1 Laboratory-Based Testing

Sample selection should be undertaken to provide sufficient samples for each lithological unit and mass of material extracted from the open pit. Selected waste rock samples shall be analysed at a National Association of Testing Authorities (NATA) Australia registered laboratory for the following:

- NAPP (Total Sulfur, CRS, MPA and ANC)
- Paste pH, pH5:1, EC5:1 and 5:1 Leachate analysis
- NAG pH, NAG4.5 and NAG7.0
- Total carbon and total organic carbon

Kinetic leaching or successive leaching protocols should be undertaken for major units in the waste rock material to assess oxidation potential and likely environmental impact.

4.3.2 Visual Inspections

Suitably qualified mine geologists are to carry out regular (as required) visual inspections on each area of the waste rock dumps to evaluate the performance and condition of the facilities. The toe sections of the waste rock dumps shall be assessed for seepage, and if seepage is observed, the specific location and flow rate will be recorded. A sample shall be collected for water quality analysis in accordance with the Environmental Monitoring Plan for the site.

4.3.3 Reporting

The results of the visual inspections and all laboratory-based analyses shall be recorded and documented in a suitable storage system.

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5 WASTE ROCK DUMPS CONCEPTUAL DESIGN REVIEW

5.1 Pit and Waste Rock Quantities

There are four (4) proposed open cut pits which are all located on the central zone of the mine lease. Their sizes range from approximately 170,000 m³ to ~1.0 million m³, with an overall total of 1.9 million m³ in terms of loose excavated volume. The design and details of excavated material for the proposed pits are presented in **Table 3** as provided by SVG, noting no bulking factors have been applied.

TABLE 3: PITS EXCAVATED MATERIALS

Pit ID	LCM (m^3)	Tonnes
Pit 1	418,302	1,045,755
Pit 1 Extension	56,420	141,050
Pit 2	285,785	714,463
Pit 4	169,026	422,565
Pit 6	986,765	2,466,913
Total Material	**1,916,298**	**4,790,746**

1. assuming 2.5 t/m^3, LCM denotes – Loose Cubic Metre

The estimated mineral waste volumes were supplied by SVG and are presented in **Table 4**. . The total amount of waste rock generated by the Agate Creek Project is estimated at ~1.9 million cubic metres, with little expected to be PAF as per **Section 3.2.2**. It is noted that the proposed WRD volumes are greater than the expected mined material, however, the values presented in **Table 3** do not consider bulking factors and therefore confirmation is needed prior to detailed design of the structures. Bulking factors typically can range from +20-50% of the mined material.

TABLE 4: ESTIMATED WASTE ROCK VOLUMES

Waste Rock Dump	Concept Design Volume (m^3)
Pit 1 WRD[1]	365,000
Pit 6 WRD[1]	633,000
Low Grade Stockpile[2]	710,000
NW WRD[2]	440,000
SW WRD[2]	229,000
TOTAL	**2,377,000**

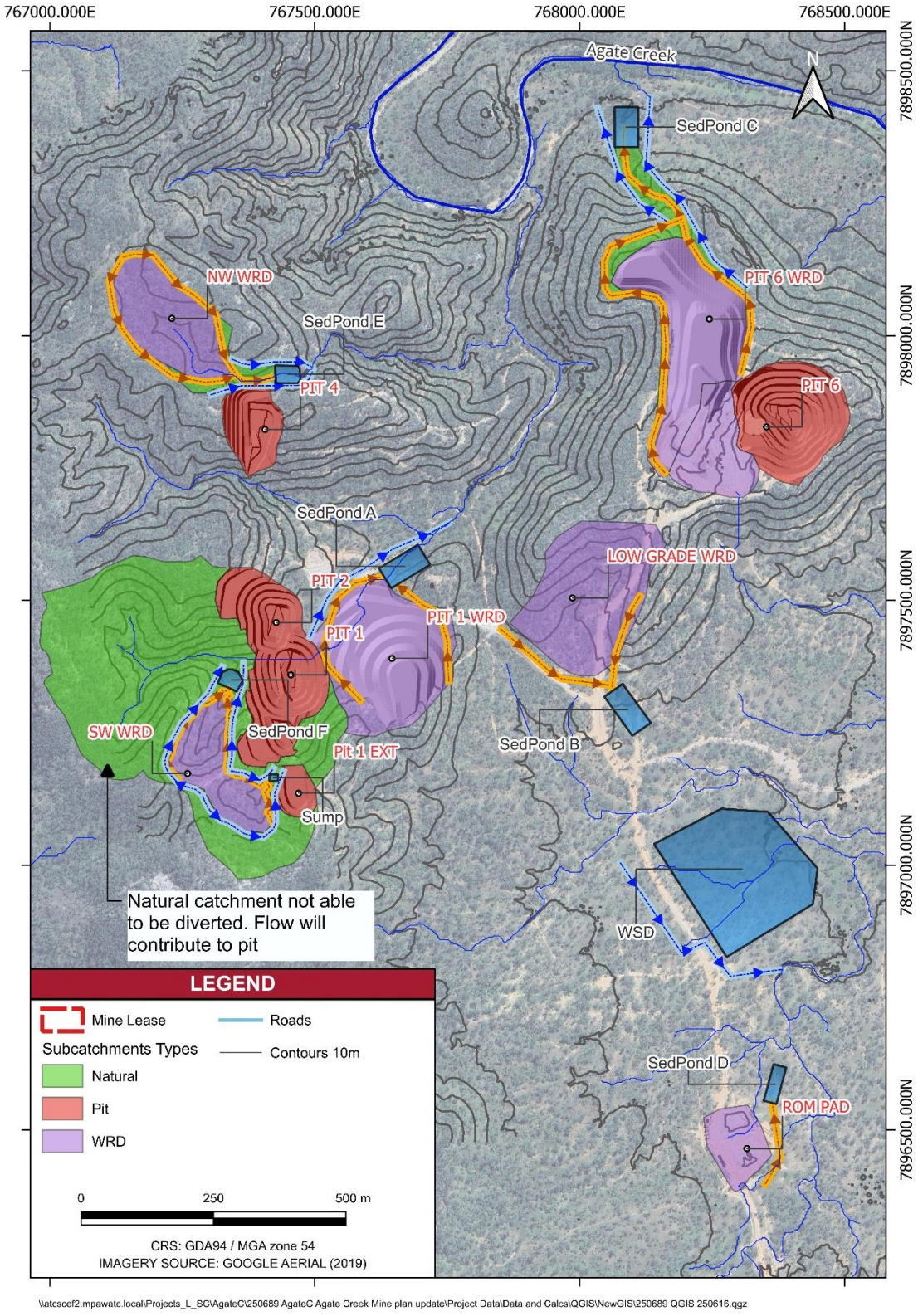
1. Design by others as provided by SVG.
2. ATCW Design.

The Low-Grade Ore WRD will remain post-closure and was designed by ATCW as outlined in the final landform letter prepared by ATCW **[3]**. The waste dumps are based on the mining waste schedule quantity and involves selective mining and placement of waste rock to form NAF WRDs. PAF material should be targeted to a single WRD given the low percentage expected, and placed over a NAF liner and encapsulated with NAF waste rock. The key objective of the waste rock dump design is to ensure

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that the final landform is safe, stable and non-polluting. Conceptual design of all the operational site layout (at Year 2-3) and diversion channels are shown in **Diagram 4** below.

DIAGRAM 4: SITE FEATURES AND DRAINAGE



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5.2 Geometrical Design Review

The WRDs are a low-profile structures generally located in valleys. The WRDs require access ramps to allow dumping of waste rock and maintenance access to the structure. It is proposed that access ramps are located from the adjacent ridges to limit the road lengths and ramp grades. The concept footprints and heights (measured from the crest to lowest toe) of the WRDs are outlined in **Table 5**.

Any PAF rock must be encapsulated by NAF material. A NAF base is proposed to be constructed to provide a platform upon which any PAF material can be placed. The purpose of the NAF base is to prevent contaminant migration into the receiving environment. The minimum required thickness of the NAF base beneath any PAF rock shall be compacted to specified standards and have low permeability.

The entire WRD footprint must be cleared of vegetation and stripped of topsoil for later use during rehabilitation. Topsoil will require careful stockpile management to limit damage to the topsoil and to protect against erosion. Foundation preparation, considered as natural ground after stripping of topsoil, is generally comprised by the scarification to an indicative depth of 200 mm prior to moisture conditioning and re-compacted.

The external batters of the temporary Pit 1 and Pit 6 WRDs will be at the angle of repose (37 degrees) with 10 m high lifts, before stepping inward by 10 m to create an overall batter of approximately 2.3H:1V. The Low-Grade WRD will need to be shaped to meet closure phase erosion targets as described in ATCW's Final Landform Letter **250689 L02 Rev A [3]** and as per Landloch's erosion modelling **[13]**.

TABLE 5 GEOMETRICAL DESIGN

Waste Rock Dump	Footprint Area (ha)	Max Height (m)
Pit 1 WRD[1]	4.3	49
Pit 6 WRD[1]	4.5	36
NW WRD[2]	3.2	38
SW WRD[2]	2.4	43
Low-Grade WRD[2]	5	50

1. Design by others as provided by SVG.
2. ATCW design.

5.3 Stability Analysis

5.3.1 Stability Section

A slope stability analysis was performed for each WRD designs. The sections identified as having the highest geotechnical criticality were implemented to the analysis. Identifying these critical zones was based on the section's maximum slope, maximum crest height, and location of immense waste mass release in the event of a failure. **DIAGRAM 6** showcases the locations of the obtained sections used for analysis.

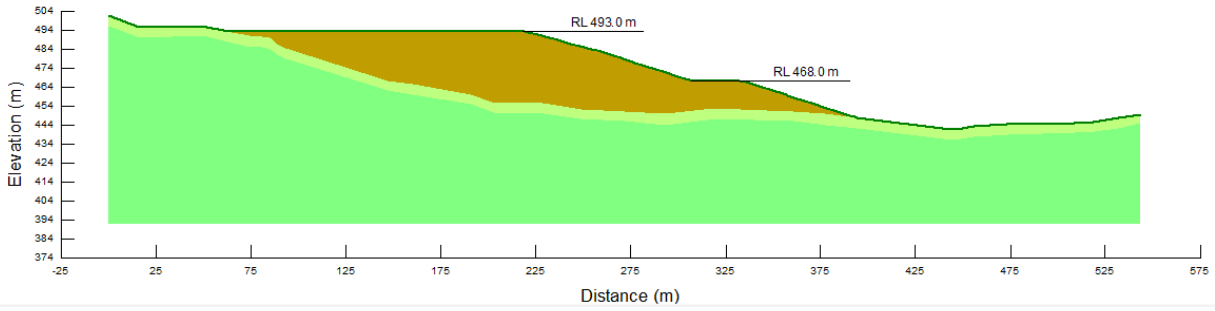
The slope stability analysis was performed using the software SLOPE/W, developed by Bentley Systems. SLOPE/W is a two-dimensional computer program that performs slope stability computations using limit equilibrium methods. The Morgenstern-Price Method with a half-sine function for interslice forces was selected for performing the computations in SLOPE/W. The method uses both circular and non-circular shear surfaces and satisfies both moment and force equilibrium to calculate the factor of safety (FoS) for the modelled two-dimensional section. This is considered consistent with ANCOLD recommendations to select critical failure surfaces that would cause significant damage if a failure occurred and lead to breaching of the dam [1]. Relevant sections and heights are based off the revised geometries of the WRD's and are shown in .

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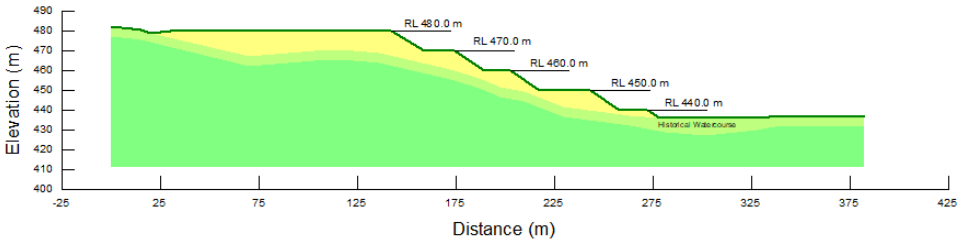
DIAGRAM 5: WRD SECTION GEOMETRY

Residual | Rock Fill | Weathered Rock | Low-Grade Stockpile

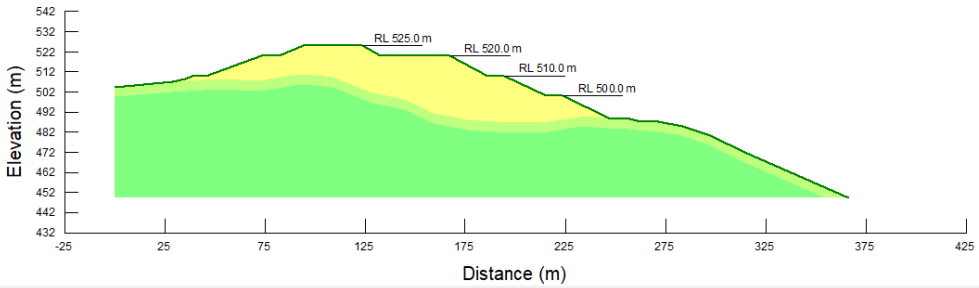
(a) Low Grade WRD



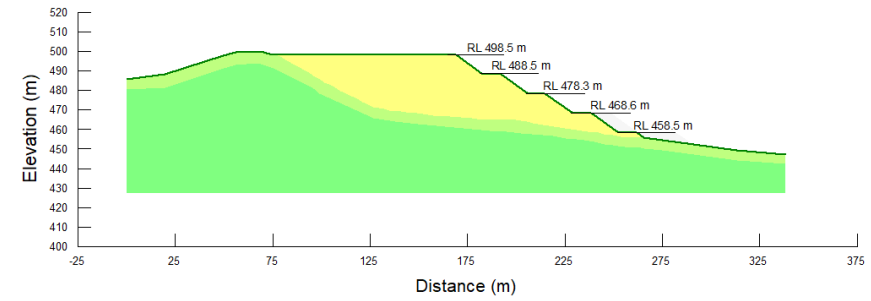
(b) Pit 1 WRD



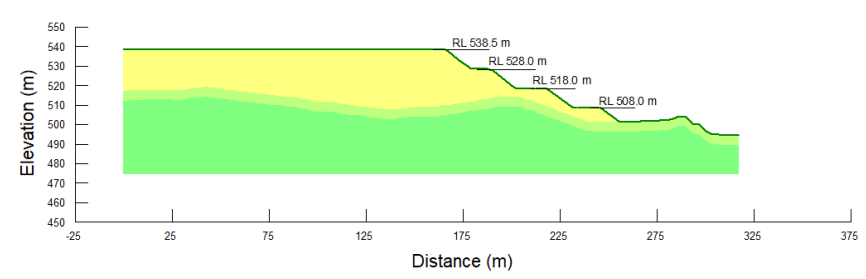
(c) Pit 6 WRD



(d) SW WRD



(e) NW WRD



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DIAGRAM 6: PIT 1, LOW GRADE WRD, PIT 6 WRD SECTION LOCATIONS

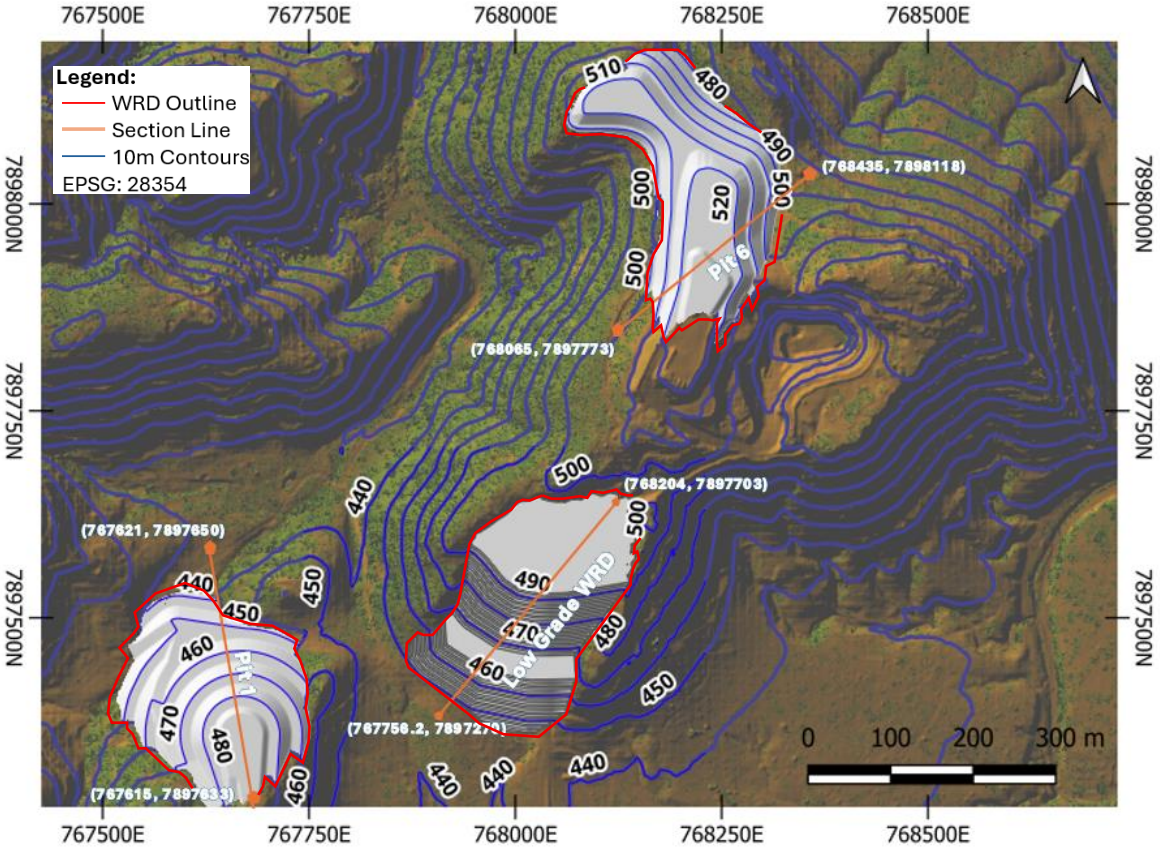
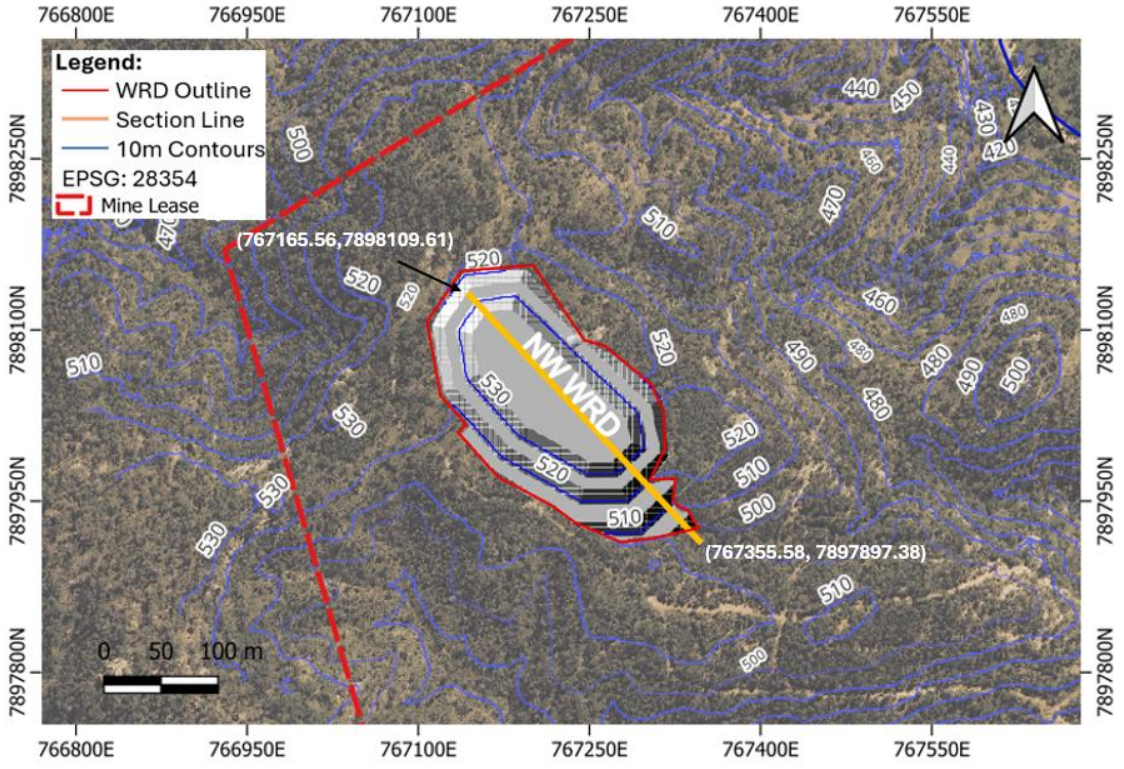
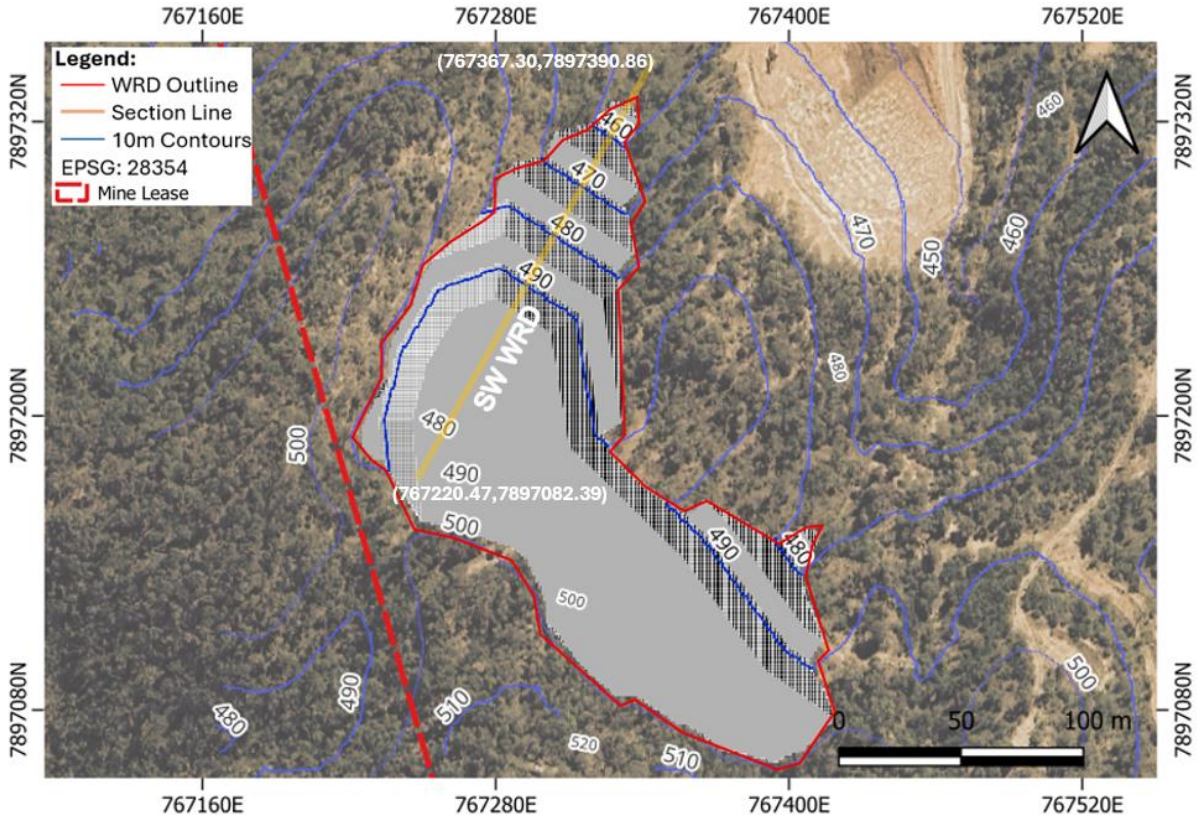


DIAGRAM 7: NW PIT WRD SECTION LOCATION



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DIAGRAM 8: SW PIT WRD SECTION LOCATION



Currently, there is no site investigation data in the vicinity of the waste rock dumps. As such, a sub-surface profile beneath the waste dump was preliminarily based on available information at the existing pit (Sherwood Open Cut), which is reported by Gecko Geotechnics **[9]**. Generally, it has been conservatively assumed that the sub-surface profile includes a 5 m thick layer of residual material of completely weathered granite / rhyolite. Noting that site personnel have advised that the residual material is typically less than 2 m in depth over the site, a sensitive assessment will consider residual material to be 5 m. The top layer is potentially underlaid by moderately to highly weathered, weak rocks which extends up to 50 m depth.

5.3.2 Material Properties

In the 2020 report **[9]**, Gecko Geotechnics proposed shear strengths of the foundation materials to be characterised using Hoek – Brown models and the parameters presented in **Table 6**. Given there are no other sources of site investigation information, the stability analysis adopted the same shear strength envelopes for the foundation materials. The Hoek-Brown failure criterion is an empirical model developed to estimate the strength and failure behaviour of rock masses, particularly for underground excavations, slopes, and foundations **[6].**

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TABLE 6: HOEK-BROWN MODEL PARAMETERS FOR FOUNDATION MATERIALS

Foundation Material	Main Rock Type	Design UCS (MPa)	Geological Strength Index (GSI)	Maximum Confining Stress (kPa)	mi
Residual Material (HB)	Granite / Rhyolite	0.5	20 – 30	490.3	10
Residual Material (HB-Pseudo)	Granite / Rhyolite	0.5	16	256.33	10
Weathered Rocks (HB)	Granite / Rhyolite / Breccia	5	35 – 45	683.5	10

In accordance to the ANCOLD Guidelines (2019) **[1]**, adopted shear strength of soil-like materials such as waste rocks and residual foundation materials were reduced to 80% of their static shear strength to account the potential cyclic induced strain softening in those materials. This accommodated post-seismic scenarios for post-closure phases and guarantees the geotechnical safety of the WRD even in the event of a 1:10,000 AEP earthquake scenario.

For the waste rocks, shear strengths depended on various factors including rock strength, grading, angularity, and fines contents. That information, however, is currently not available. Waste rocks are likely to be end-dumped with a lift height of approximately 10 m and no compaction. As such, for this preliminary stability assessment, shear strength of the waste rocks was conservatively assumed as the lower bound values recommended by Leps **[14]**.

The shear strength of the waste rocks varies with normal effective stress following the below formula:

$$\tau = 1.446\ \sigma^{0.898}$$

Where:

τ : shear strength, in kPa

σ : normal effective stress, in kPa

An equivalent shear strength reduction was applied to the Leps function **[14]**, allowing for the application of post-seismic effects. Summary of adopted geotechnical parameters are shown in **TABLE 8**.

5.3.3 Seismicity

Based on the seismic hazard map produced by Geoscience Australia (2018) **[11]**, the site is located within relatively low seismicity area with Peak Ground Acceleration (PGA) of 0.01g for 1 in 500-year earthquakes and of 0.03g for 1 in 2500-year earthquakes. Those PGA were adopted for a pseudo-static stability analysis for the waste dump.

5.3.4 Stability Analysis and Outcomes

The Slope Stability analyses identified localised and global slip surfaces, highlighting the varying extents of potential structural failure in the event of slope instability. The analyses utilised the ANCOLD (2019) **[1]** targets to guarantee safety of the embankments. These targets, corresponding to

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each scenario, is showcased in **Table 7**. Parameters adopted for the stability analysis are summarised in **TABLE 8**.

TABLE 7: TARGET FACTOR OF SAFETY

Scenario	Recommended ANCOLD Guidelines (2019) [1]
Long-Term Drained	1.5
Post-Seismic	1.1
Short-Term	1.3

TABLE 8: ADOPTED GEOTECHNICAL PARAMETERS

Foundation Material	γ (kN/m^3)[1]	Shear Strength Envelope
Drained Residual Material	20	Hoek-Brown Model (UCS=0.5MPa, GSI=20, mi=10, D=0*, $\sigma_3\ (max)$ =490.3kPa
(Reduced) Residual Material	20	Hoek-Brown Model (UCS=0.5 MPa, GSI=16, mi=10, D=0, $\sigma_3\ (max)$ = 256.33kPa
Undrained Residual Material	20	SHANSEP Model (Tau/Sigma = 0.35, Shear Strength = 5 kPa)
Weathered Rock	22	Hoek-Brown Model (UCS=5MPa, GSI=35, mi=10, D=0, $\sigma_3\ (max)$ = 683.5 kPa
Waste Rock	20*	Lower Bound Strength (Leps, 1970) $\tau = 1.446\ \sigma^{0.898}$
Low-Grade WRD	19[2]	Lower Bound Strength (Leps, 1970) $\tau = 1.446\ \sigma^{0.898}$
Low-Grade WRD (Pseudo)	19[2]	Lower Bound Strength (Leps, 1970) with 20% Reduction

1. It was supposed that no blasting activities considered in rock mass property assessments.
2. Conservative assessments were accounted for to ensure worst case scenario

The predicted FOS of the waste rock dump slopes are summarised in Table 9**,** whereas graphical outputs of the slope modelling analyses (using the industry standard software Slope/W **[10]**) are presented in **Appendix B**.

TABLE 9: STABILITY ANALYSIS – FACTOR OF SAFETY

	Loading Conditions			

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WRD Section		Factor of Safety	Recommended ANCOLD (2019) Guidelines Target	Appendix B Figure
Low Grade WRD	Long-Term Drained (Global)	2.2	1.5	B.1
	Post-Seismic (Global)	2.1	1.1	B.2
	Short-Term (Global)	2.2	1.3	B.3
	Long-Term Drained (Local)	2.0	1.5	B.4
	Post-Seismic (Local)	1.7	1.1	B.5
	Short-Term (Local)	3.1	1.3	B.6
Pit 1	Long-Term Drained (Global)	1.5	1.5	B.7
	Post-Seismic (Global)	1.3	1.1	B.8
	Short-Term (Global)	1.3	1.3	B.9
	Long-Term Drained (Local)	1.7	1.5	B.10
	Post-Seismic (Local)	1.3	1.1	B.11
	Short-Term (Local)	1.7	1.3	B.12
Pit 6 (Downstream)	Long-Term Drained (Global)	1.6	1.5	B.13
	Post-Seismic (Global)	1.5	1.1	B.14
	Short-Term (Global)	1.8	1.3	B.15
	Long-Term Drained (Local)	1.9	1.5	B.16
	Post-Seismic (Local)	1.6	1.1	B.17
	Short-Term (Local)	1.3	1.3	B.18
Pit 6 (Upstream)	Long-Term Drained (Global)	2.2	1.5	B.19
	Post-Seismic (Global)	1.9	1.1	B.20
	Short-Term (Global)	1.9	1.3	B.21
	Long-Term Drained (Local)	3.4	1.5	B.22
	Post-Seismic (Local)	2.2	1.1	B.23
	Short-Term (Local)	1.8	1.3	B.24
SW WRD	Long-Term Drained (Global)	1.5	1.5	B.25
	Post-Seismic (Global)	1.4	1.1	B.26
	Short-Term (Global)	1.6	1.3	B.27
	Long-Term Drained (Local)	1.4	1.5	B.28
	Post-Seismic (Local)	1.1	1.1	B.29
	Short-Term (Local)	1.3	1.3	B.30
NW WRD	Long-Term Drained (Global)	2.3	1.5	B.31
	Post-Seismic (Global)	1.9	1.1	B.32
	Short-Term (Global)	2.0	1.3	B.33
	Long-Term Drained (Local)	1.5	1.5	B.34
	Post-Seismic (Local)	1.1	1.1	B.35
	Short-Term (Local)	1.3	1.3	B.36

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The Hoek-Brown model parameters utilised from **TABLE 8** resulted in the majority of analyses satisfying the ANCOLD stability requirements. However, the Long-Term Drained (Local) condition for the South-West WRD did not achieve the target Factor of Safety (FoS). This outcome is primarily attributed to the significant thickness of the Waste Rock material on the driving-end of the slip-surface, combined with the weaker residual soil underlying the toe of the WRD, contributing to a reduction in the effective stress and, consequently, overall slope stability.

Incorporating an additional buttressing at the toe (as illustrated in the image below) increases the calculated Factor of Safety (FoS) to meet the recommended ANCOLD target (1.5), as shown on DIAGRAM 9.

DIAGRAM 9: LONG-TERM DRAINED – WITH BOX CUT AND ADDITIONAL BUTTRESSING

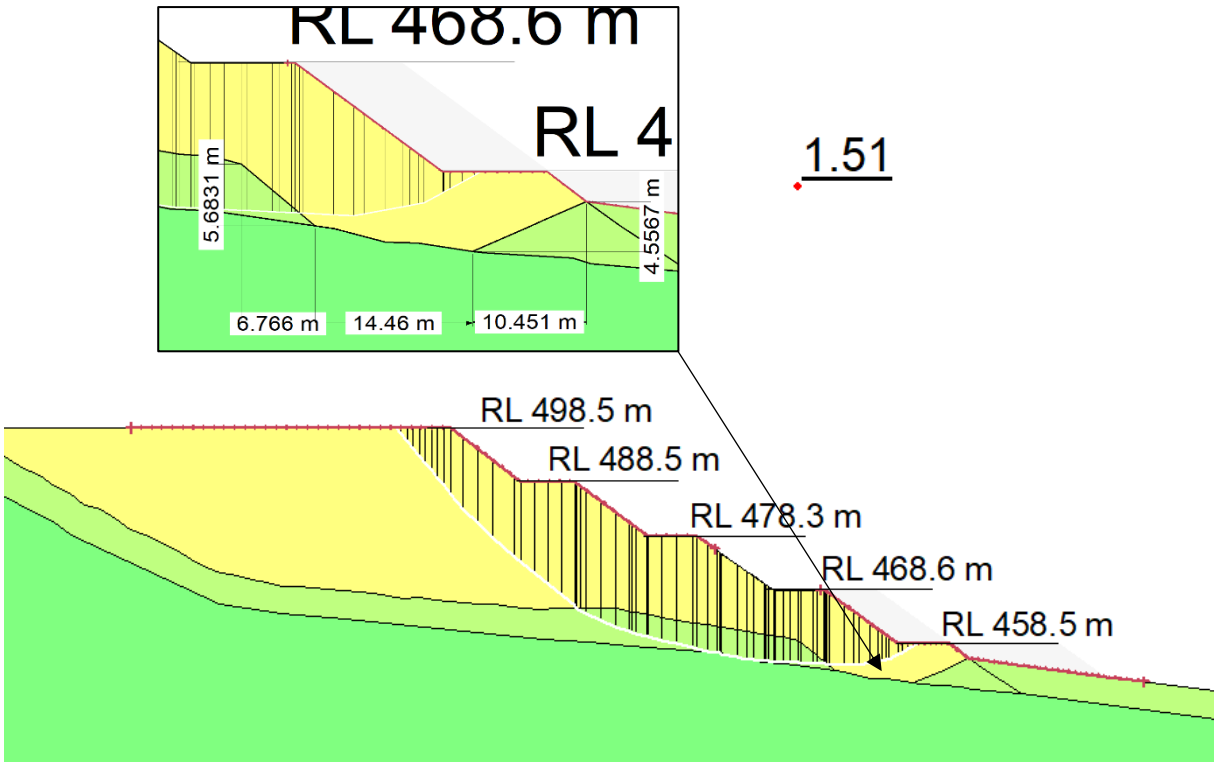


TABLE 10: CALCULATED FACTOR OF SAFETY

WRD Section	Loading Conditions	Factor of Safety	Recommended ANCOLD (2019) Guidelines Target	Appendix B Figure
SW WRD	Long-Term (Local)	1.5	1.1	B.28A

5.4 Stability Analysis Conclusion

The new analytical outcome indicate the current waste dump slopes meet the recommended minimum FoS for Long-Term Drained loading conditions. Note that the current outcomes are a simplistic assessment for the assumed worst-case section out of the WRDs proposed. This assessment is based on several assumptions relating to material shear strength and sub-surface profile.

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5.5 Waste Rock Placement

Generally, it is anticipated that the waste rock will be paddock dumped within the storage areas and the dumps pushed out with dozers to form a smooth-running surface. The dump trucks will be routed across the surface to provide tyre compaction to the waste. No additional compaction or moisture conditions of the waste rock will be required.

5.6 Construction Considerations

The WRD construction is divided into three sequential phases: clearing and stripping, basal liner placement (if required) and compaction, placement during operations, and closure capping. During the detailed design works, following further site geotechnical investigation and waste rock characterisation split between PAF and NAF, the construction considerations are to be reviewed to address the existing findings. The following items need to be considered for construction:

- Construction materials from WRDs need to be identified and quantified during the planning and design stages.
- Waste rock identification management is required throughout the mine operation to ensure any PAF rock is properly identified and placed.
- Monitoring is required to ensure the waste rock lift heights agree with the dumping plan.
- It is recommended to employ full-time management of the WRD operation during all stages of construction to ensure final closure requirements and objectives are met.
- Dump performance monitoring and documentation, including stability, erosion, and consolidation.
- Environmental monitoring of conditions at the dump, including seepage water, surface water, and waste rock identification, are required to verify environmental performance objectives are met.
- Proposed capping profile and progressive rehabilitation plan.

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6 DECOMMISSIONING AND CLOSURE

6.1 General

Pit 1, Pit 4, Pit 6, NW and SW WRDs are temporary only and will be used to backfill the open cut pits. As such no closure phase requirements are required for these WRDs. However, interim cover should be placed on the WRD wherever practical to assist in reducing the risk of erosion and sediment loss.

The decommissioning and closure design of the Low-Grade WRD will include armouring, capping and revegetation elements placed in a layered sequence to limit erosion and infiltration and promote the growth of targeted vegetation, and a surface water management system to convey runoff as discussed in ATCW's Final Landform letter **[3]** and in Landloch's erosion modelling letter **[13]**. The design elements are intended to create a final landform that is safe, stable and non-polluting.

It is also noted that the proposed open cut pits are backfilled to achieve free draining grades. This is to address the water quality issues post-closure and to meet landholder agreements. Revision and updates to this report are recommended following further site investigations to confirm existing geotechnical characteristics and confirmation of a site material balance, as this may ultimately impact the WRD landforms and closure methodology.

6.2 Cover System

The proposed cover system for the Low-Grade WRD and the backfill pits has been developed by others as described in the memorandum by Wulguru Technical Services (2024) **[16]**. The cover system proposed as per **[16]** is summarised below:

- Blended waste will be placed to 10 m below the final surface with the remaining material being NAF only and machine roller compaction at 5 m below final surface.
- The final 5 m will be track rolled for stability while allowing for root penetration.
- Growing medium to support groundcover. Refer to Landloch **[13]** for further information regarding groundcover options and minimum requirements.

This cover system should be confirmed as part of a detailed design and following confirmation of site materials and rehabilitation strategy. A construction methodology should also be developed based on the cover system proposed to inform rehabilitation costs and identify key construction risks.

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[15] Longpaddock.qld.gov.au. 2022. *SILO - Australian climate data from 1889 to yesterday*. [online] Available at: <https://www.longpaddock.qld.gov.au/silo/point-data/>.

[16] Wulguru Technical Services, (2024) 'Response to Change Application Pathway email dated 30 April 2024', dated 19 July 2024, 2021.09001-Version 1.2

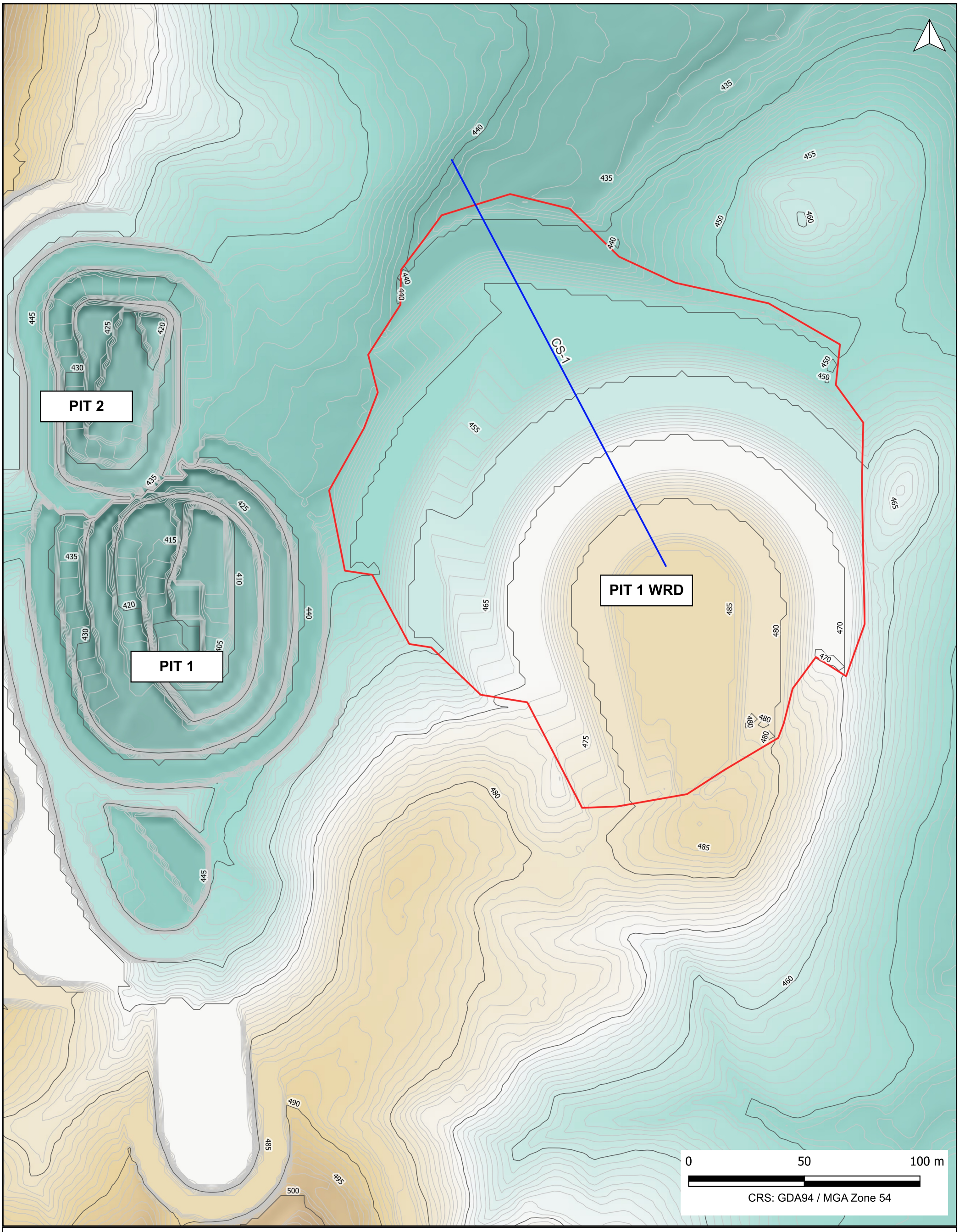
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APPENDICES

APPENDIX A – WRD FIGURES



LEGEND

Contours

1m

10m

Pit6_WRD_Footprint

SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

PITS 1 WRD

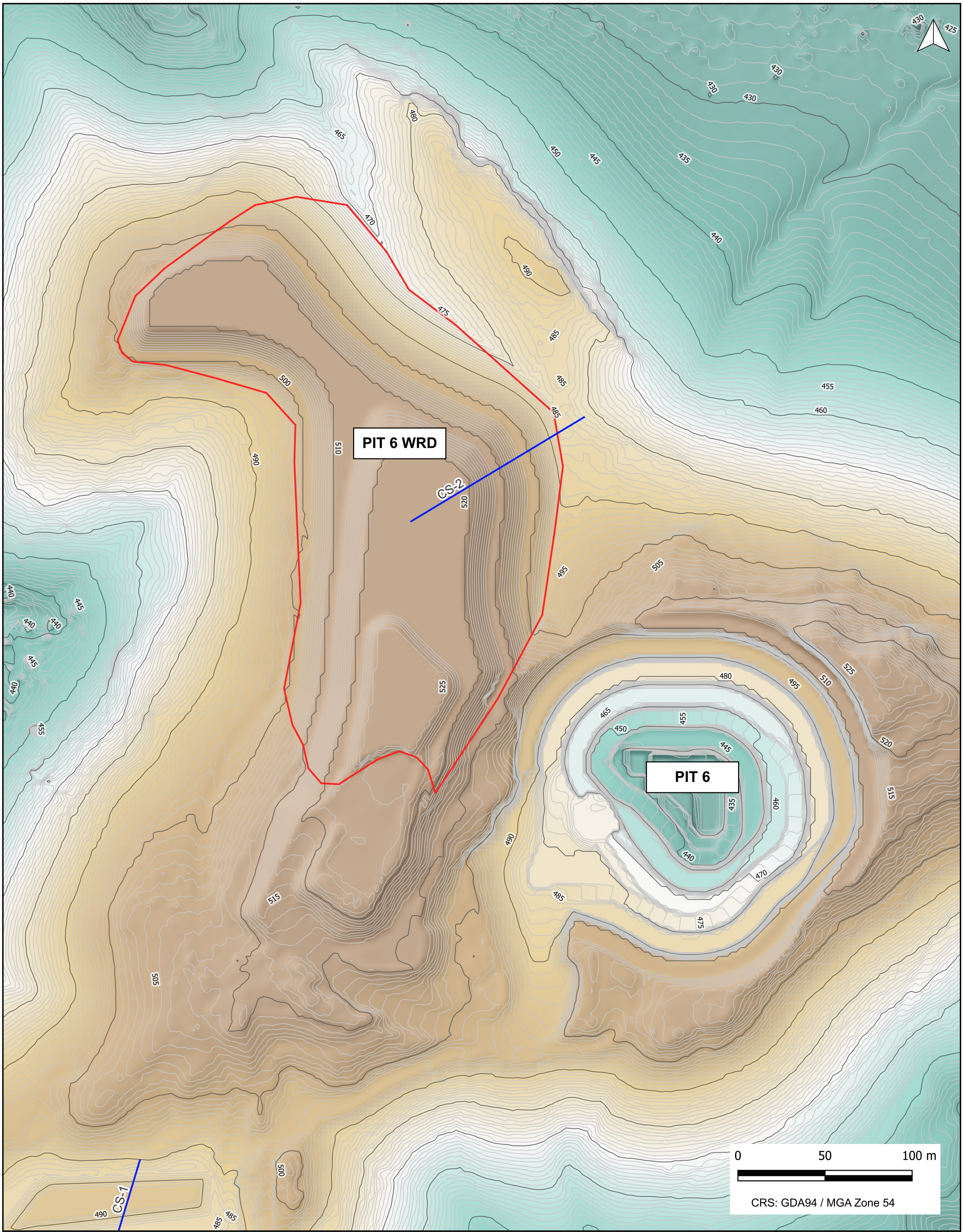
FIGURE 1

250689

DATE: 2025-09-15

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LEGEND

Contours

1m

10m

Pit6_WRD_Footprint

SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

PIT 6 WRD

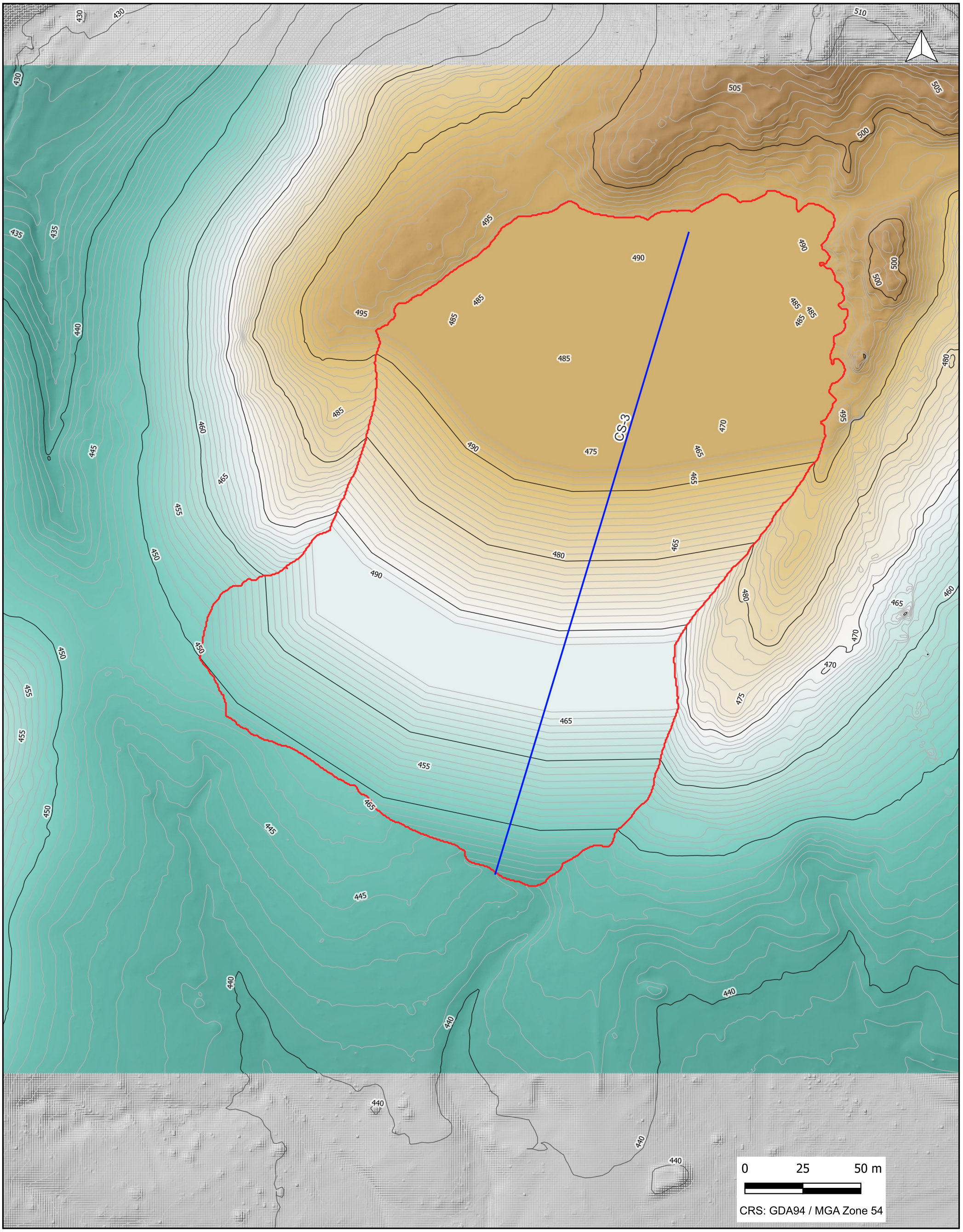
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DATE: 2025-09-15

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LEGEND

Contours

- 1m
- 10m
- Cross Section
- Footprint

SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

LOW GRADE WRD DESIGN

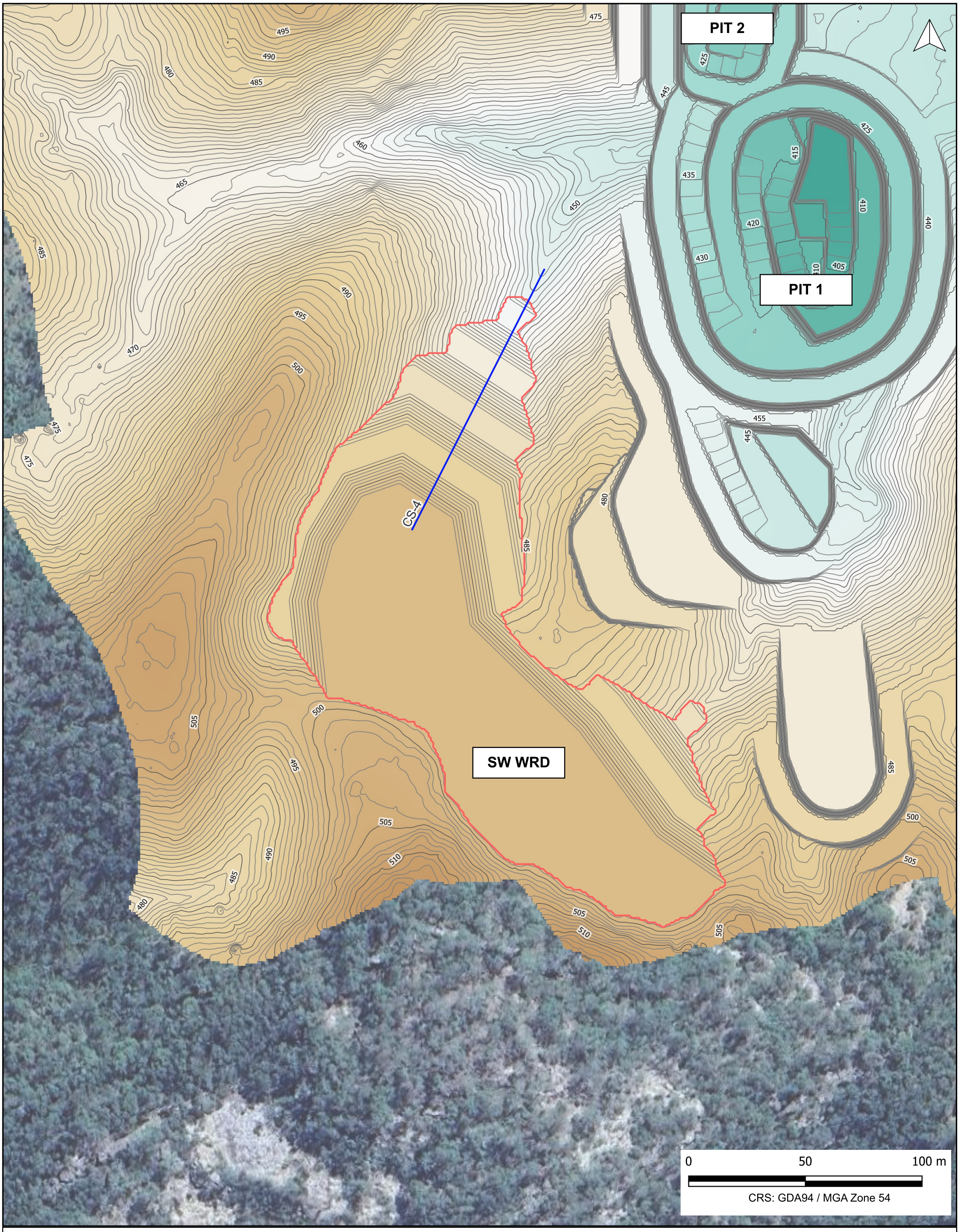
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250689

DATE: 2025-09-15

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LEGEND

Contours

1m

10m

Footprint

SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

SW WRD

FIGURE 4

250689

DATE: 2025-11-05

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NW WRD

CS-5

PIT 4

0 50 100 m

CRS: GDA94 / MGA Zone 54

LEGEND

Contours

1m

10m

Footprint

SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

NW WRD

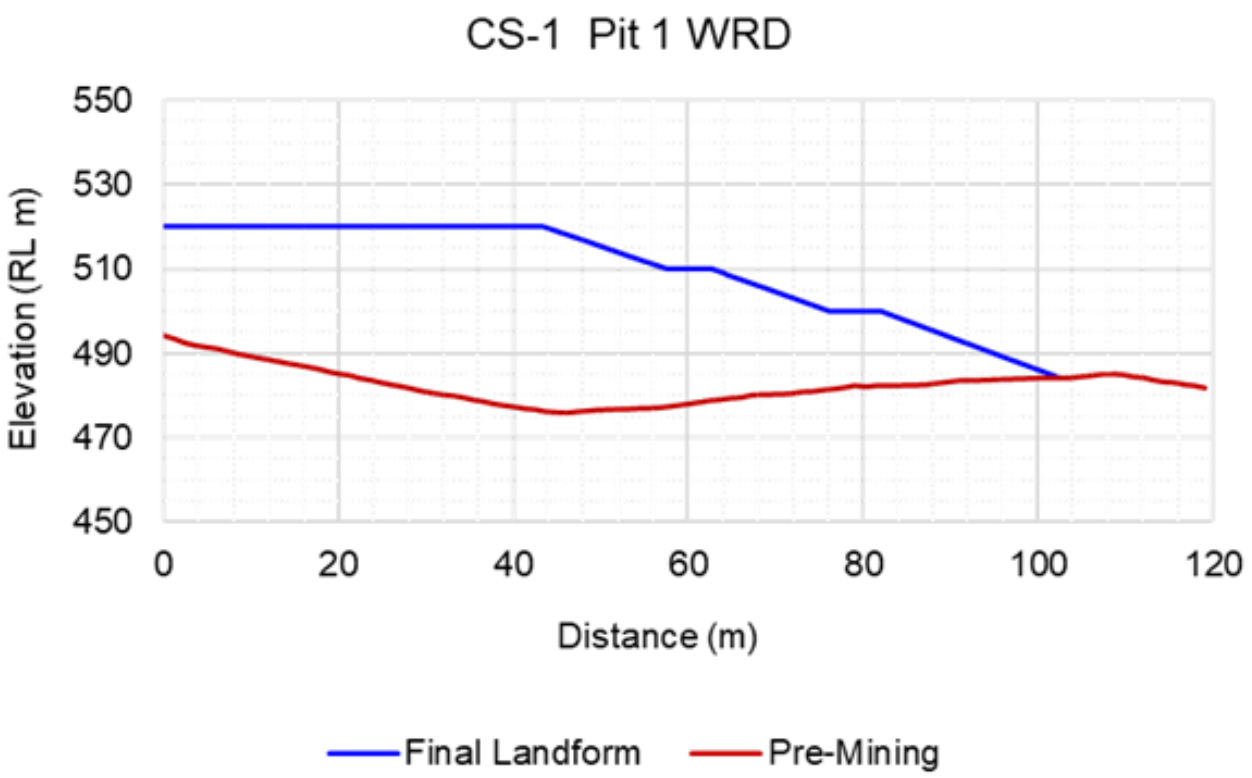
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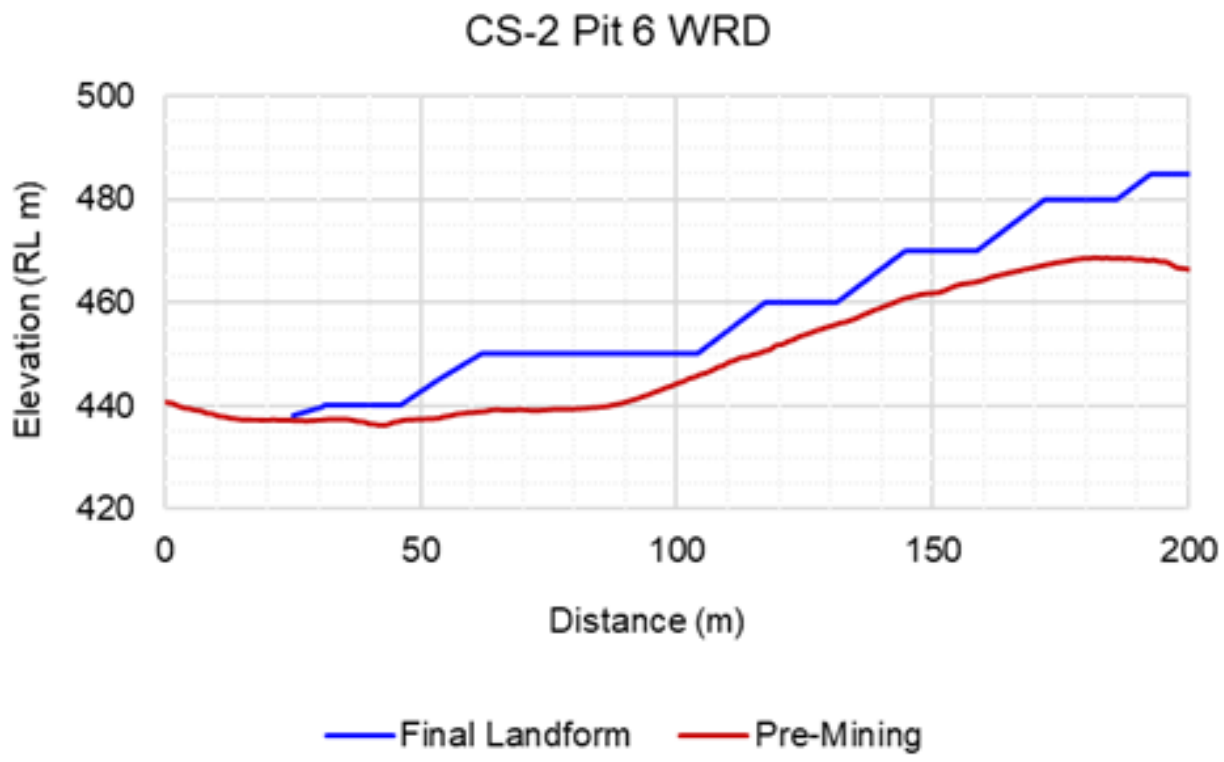
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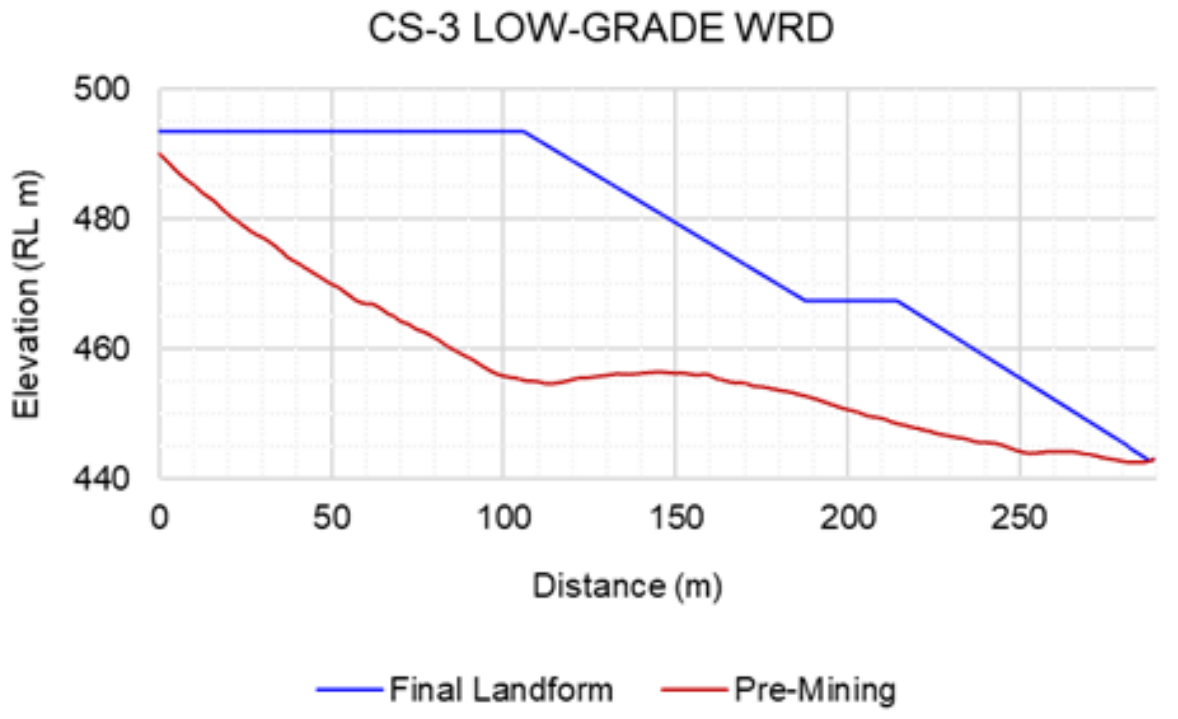
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AGATE CREEK GOLD MINE

WRD
CROSS-SECTIONS

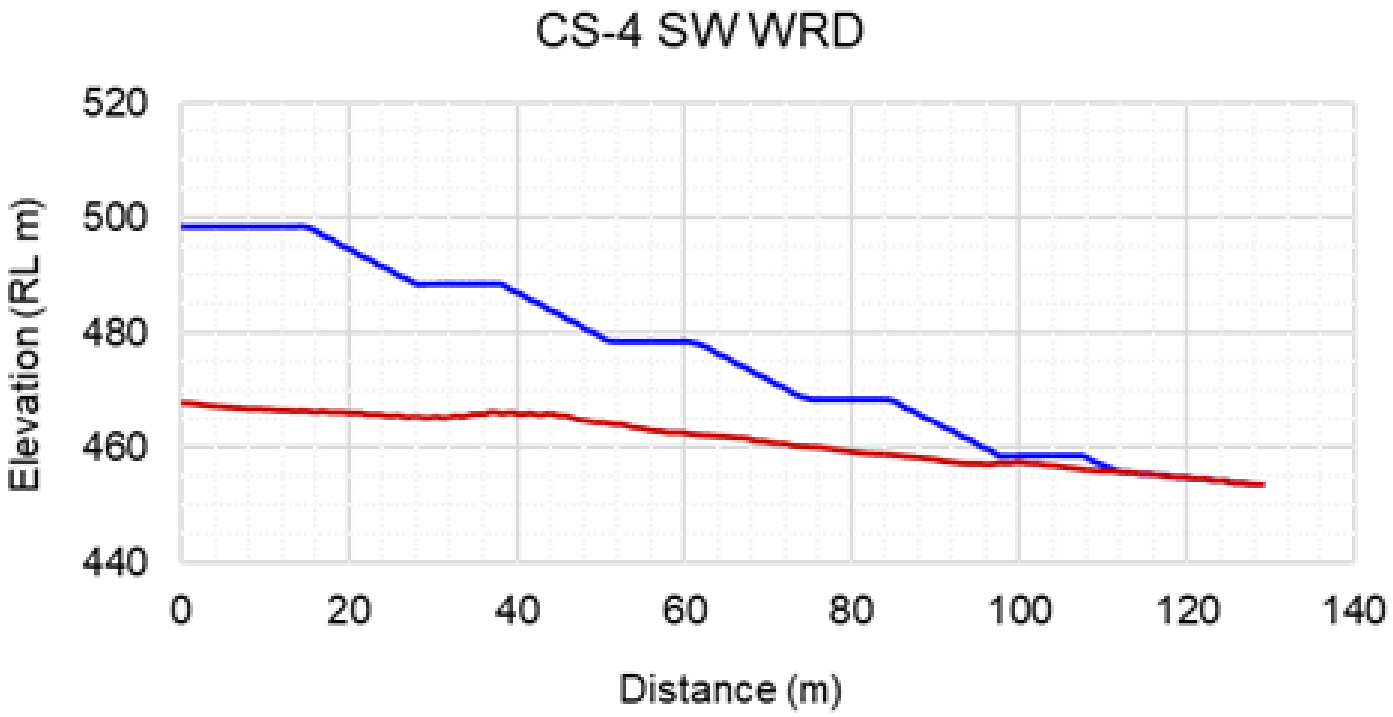
FIGURE 6

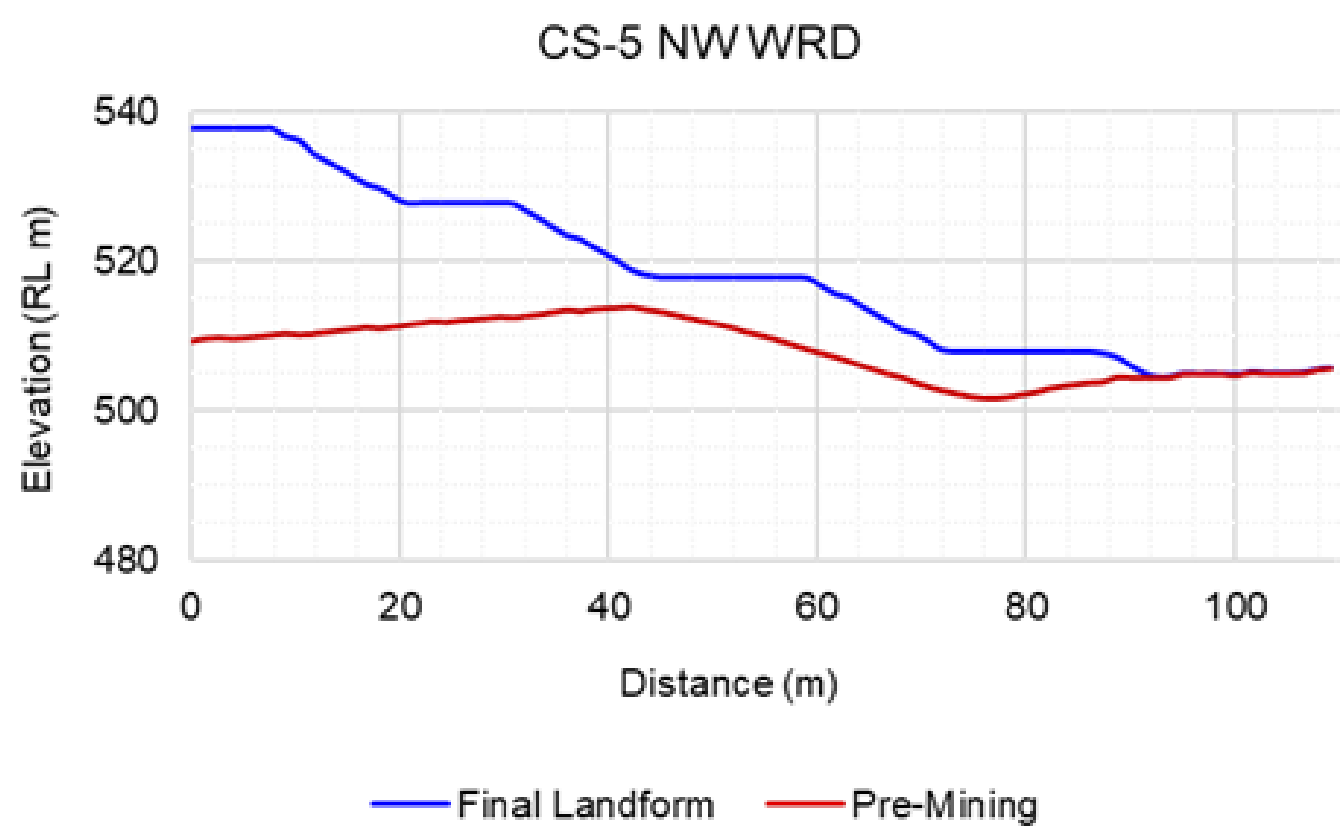
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SAVANNAH GOLDFIELDS LIMITED

AGATE CREEK GOLD MINE

WRD
CROSS-SECTIONS

FIGURE 7

250689

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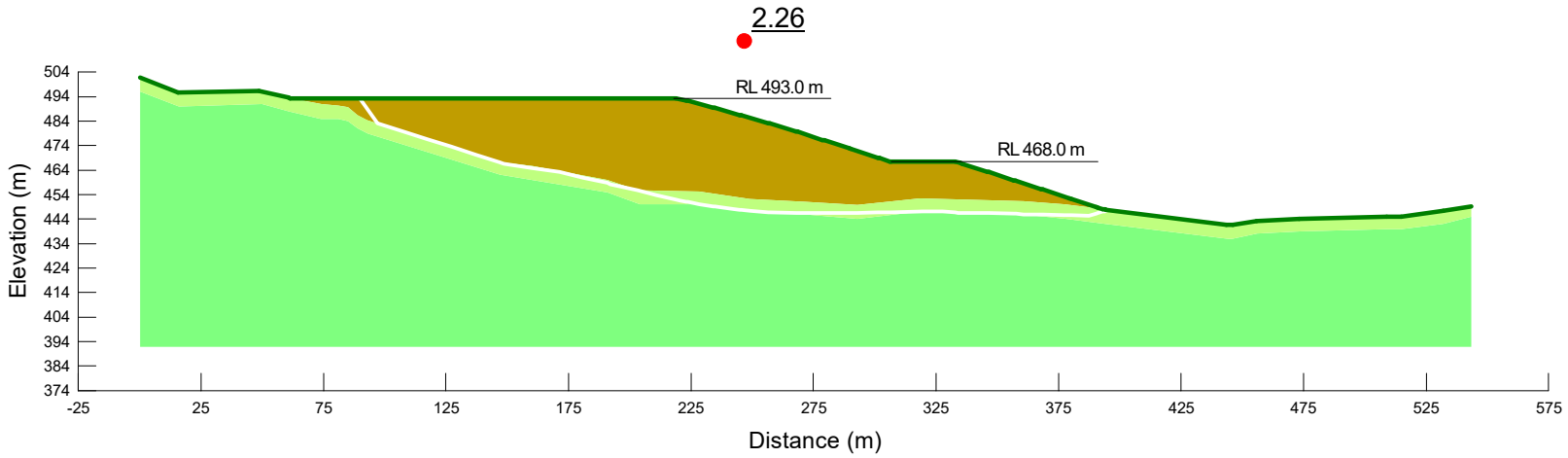
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APPENDIX B – WASTE ROCK DUMP SLOPE STABILITY ANALYSIS OUTPUTS

TAILINGS.WATER.WASTE.

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile	Shear/Normal Fn.	19										Leps_LB
	Residual Material (HB)	Hoek-Brown	20	500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55	



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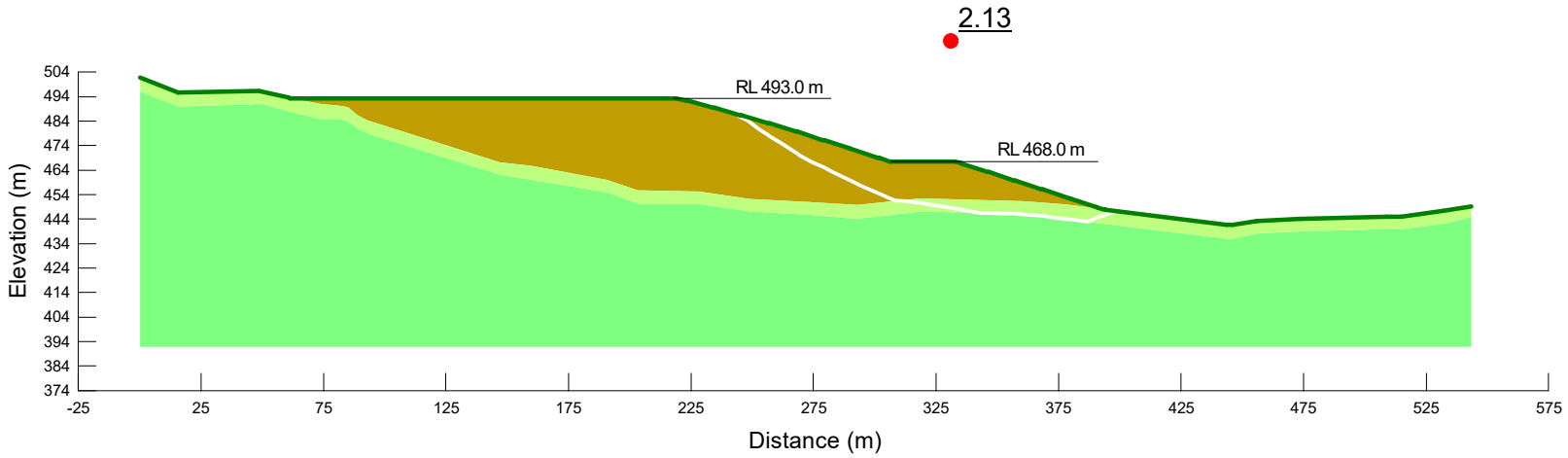
Low Grade WRD (Global) - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.1

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile (Pseudo)	Shear/Normal Fn.	19										Leps_LB_20PerReduction
	Residual Material (HB-Pseudo)	Hoek-Brown	20	500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55	



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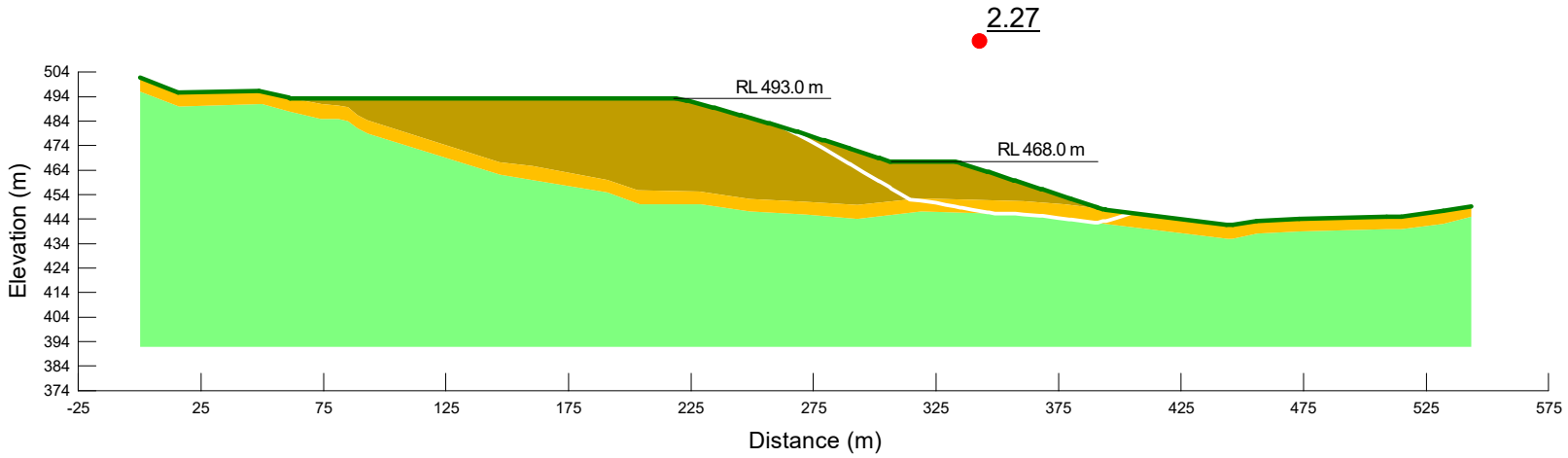
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Low Grade WRD (Global) - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.2

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Tau/Sigma	Minimum Shear Strength (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile	Shear/Normal Fn.	19												Leps_LB
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20										0.35	7	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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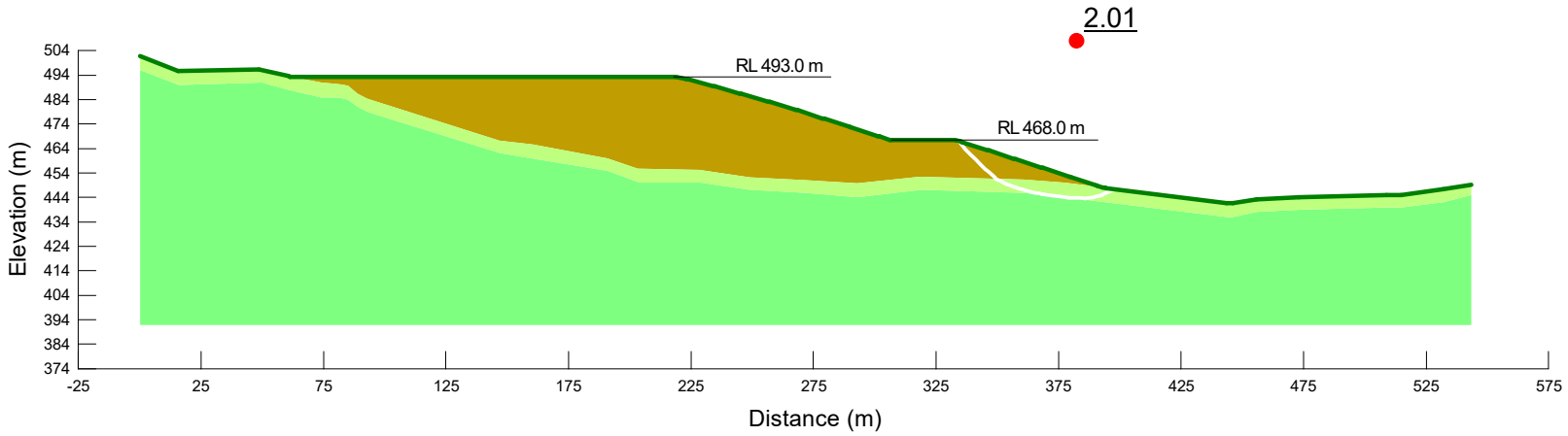
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Low Grade WRD (Global) - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.3

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile	Shear/Normal Fn.	19										Leps_LB
	Residual Material (HB)	Hoek-Brown	20	500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55	



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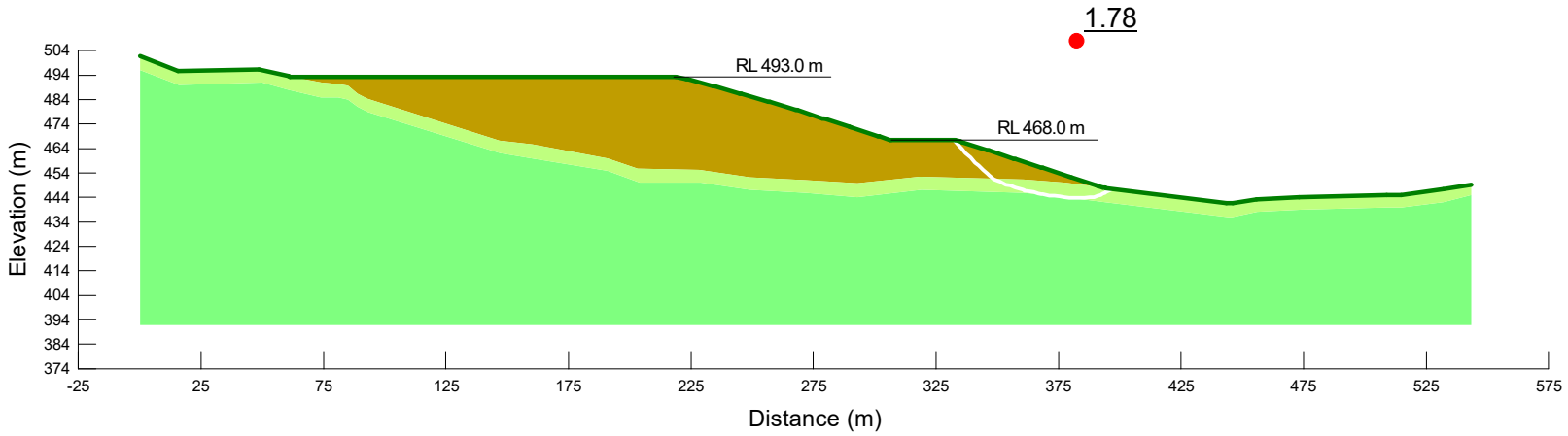
Low Grade WRD (Local) - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.4

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile (Pseudo)	Shear/Normal Fn.	19										Leps_LB_20PerReduction
	Residual Material (HB-Pseudo)	Hoek-Brown	20	500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55	



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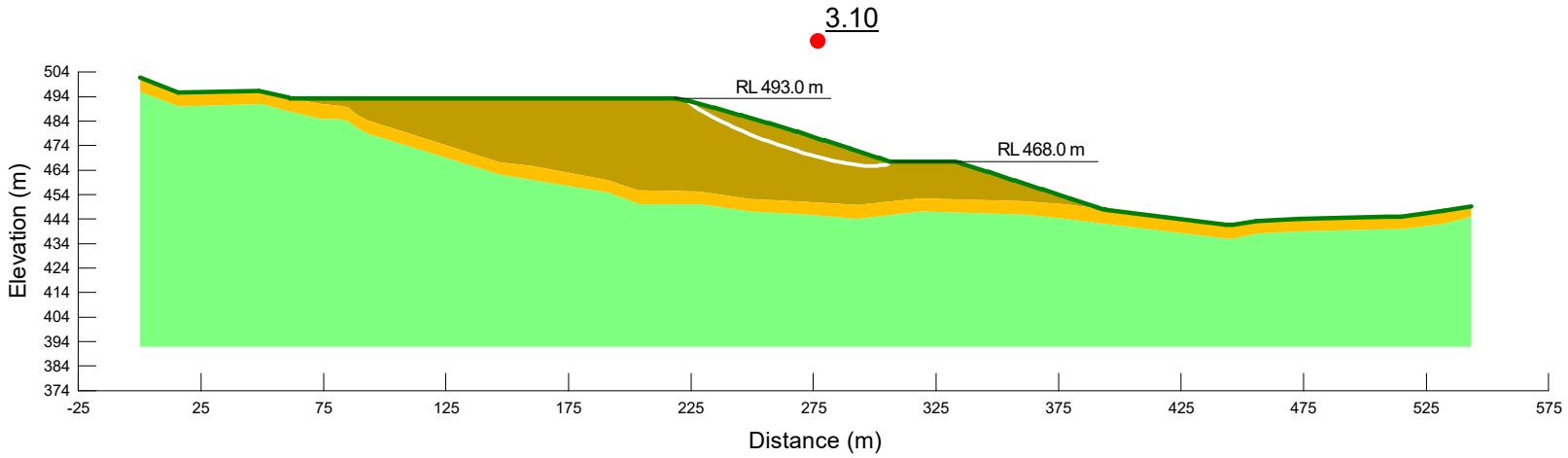
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Low Grade WRD (Local) - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.5

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Tau/Sigma	Minimum Shear Strength (kPa)	Shear/Normal Strength Fn.
	Low-Grade Stockpile	Shear/Normal Fn.	19												Leps_LB
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20										0.35	7	
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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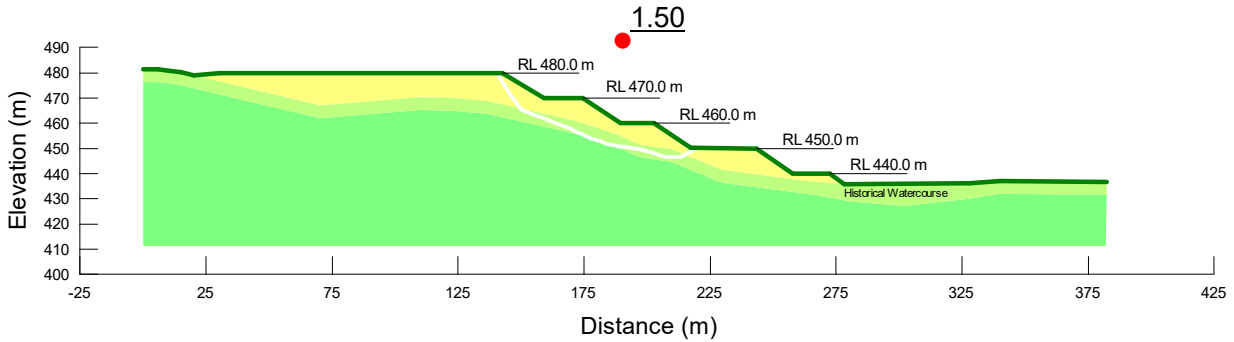
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Low Grade WRD (Local) - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.6

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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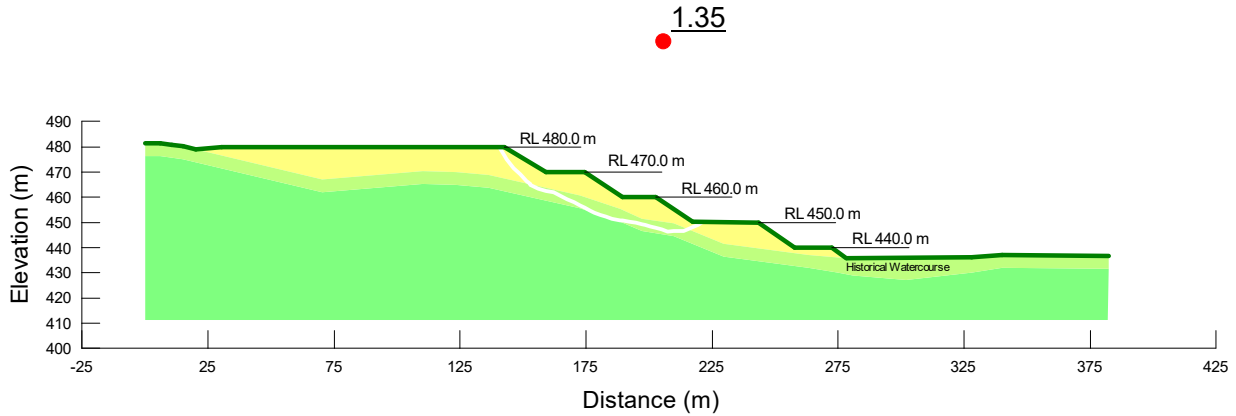
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 1 WRD (Global) - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.7

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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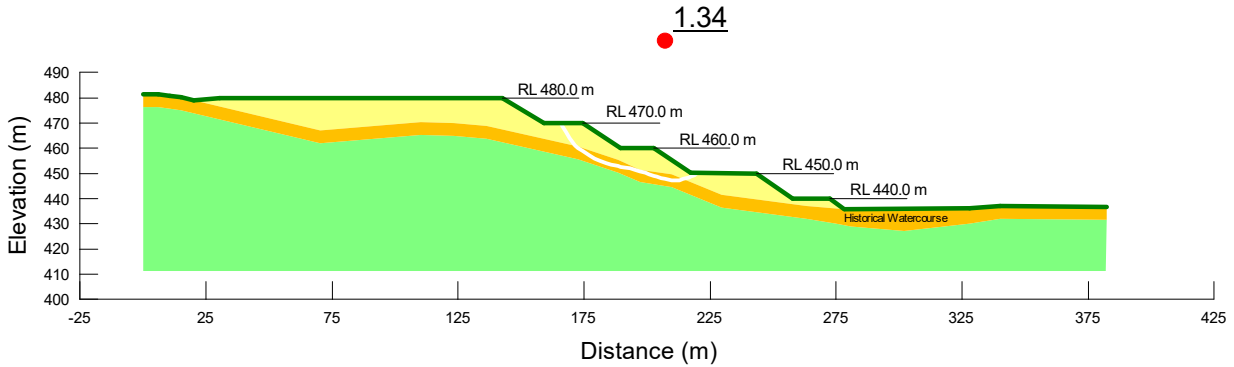
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 1 WRD (Global) - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.8

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	5
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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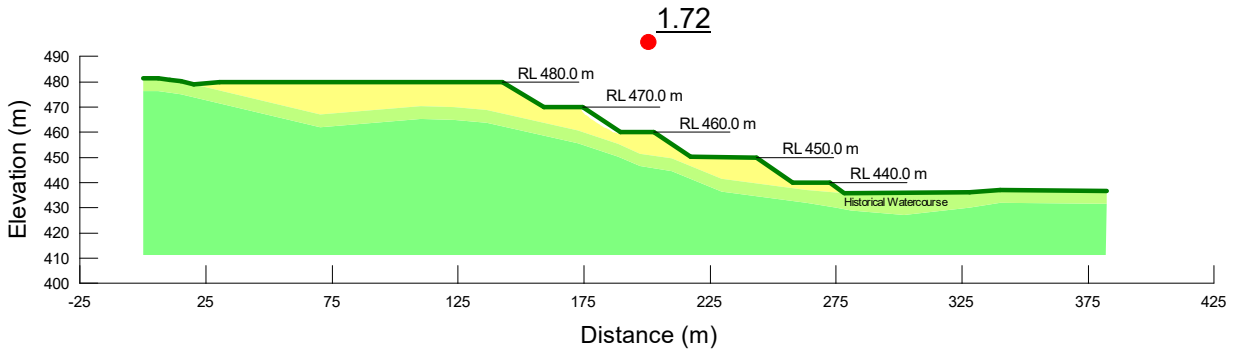
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 1 WRD (Global) - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.9

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

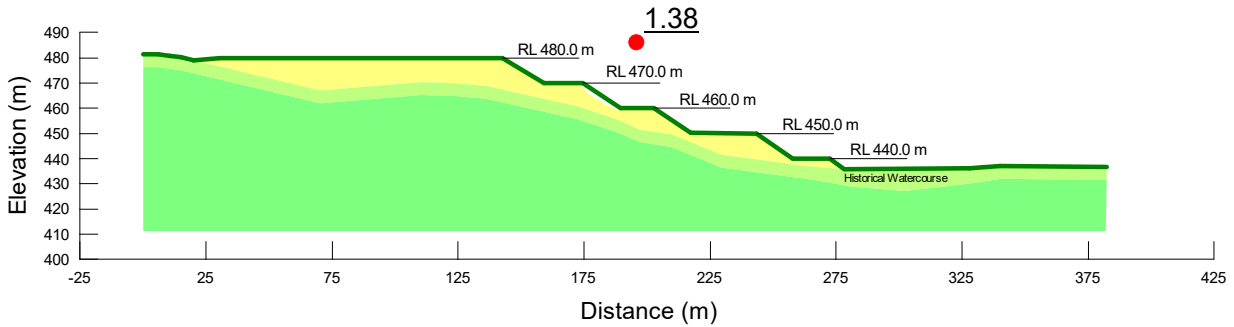
Pit 1 WRD (Local) - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.10

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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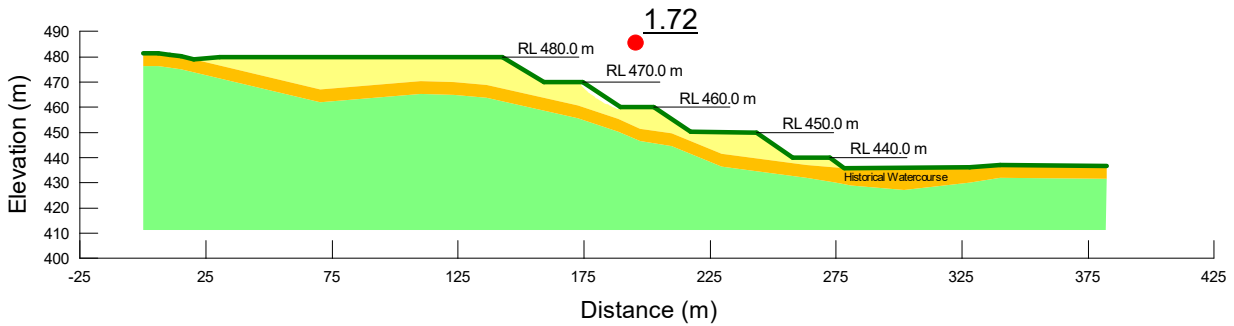
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 1 WRD (Local) - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.11

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	5
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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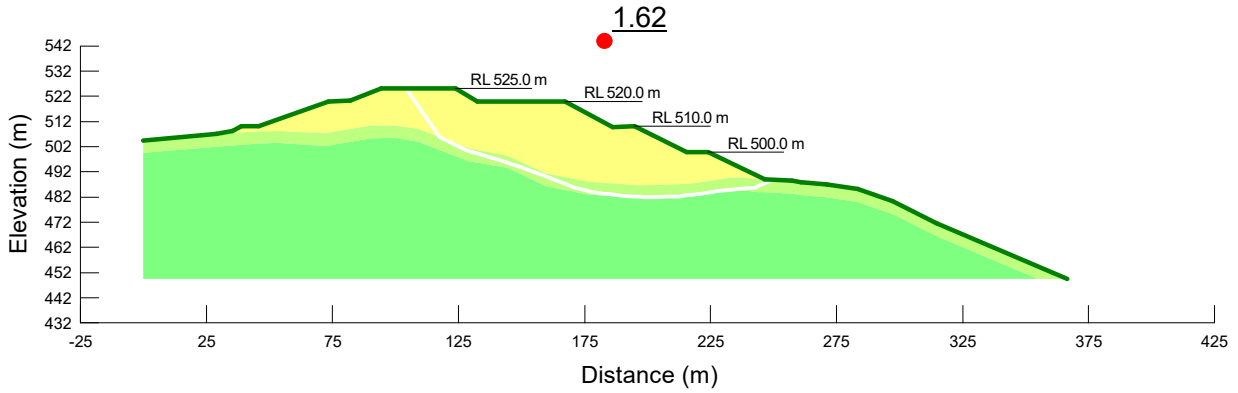
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 1 WRD (Local) - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.12

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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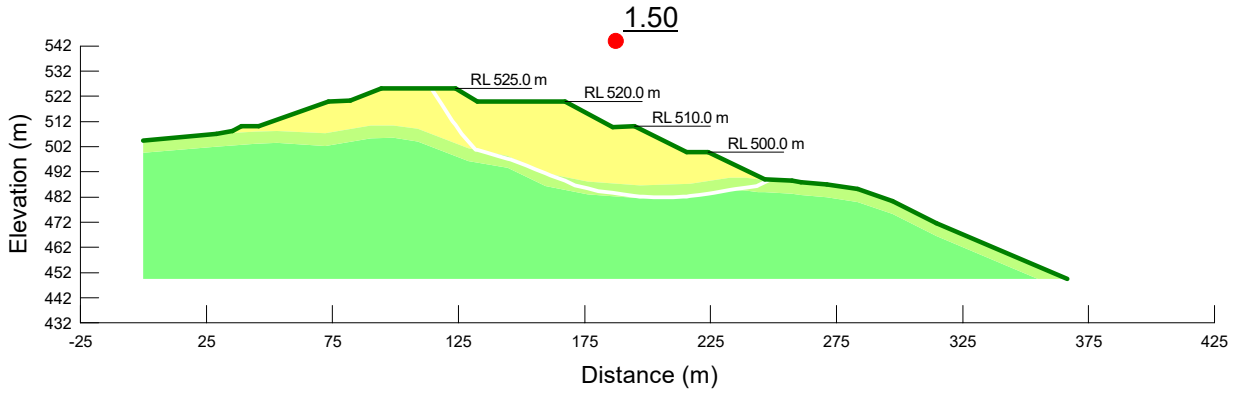
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.13

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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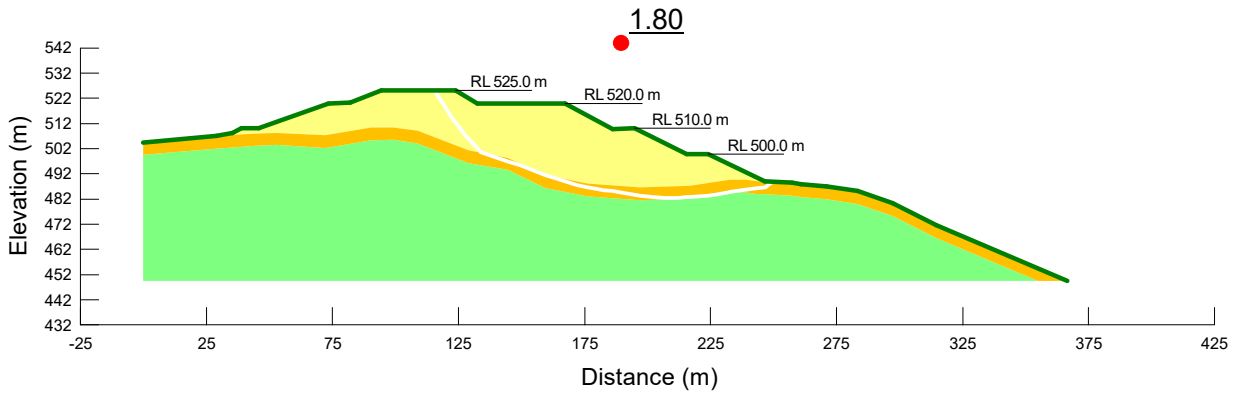
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.14

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	7
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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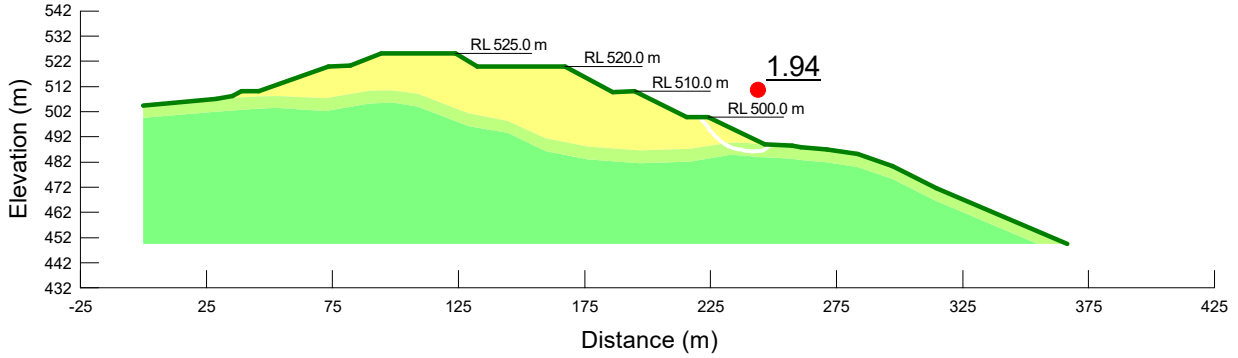
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.15

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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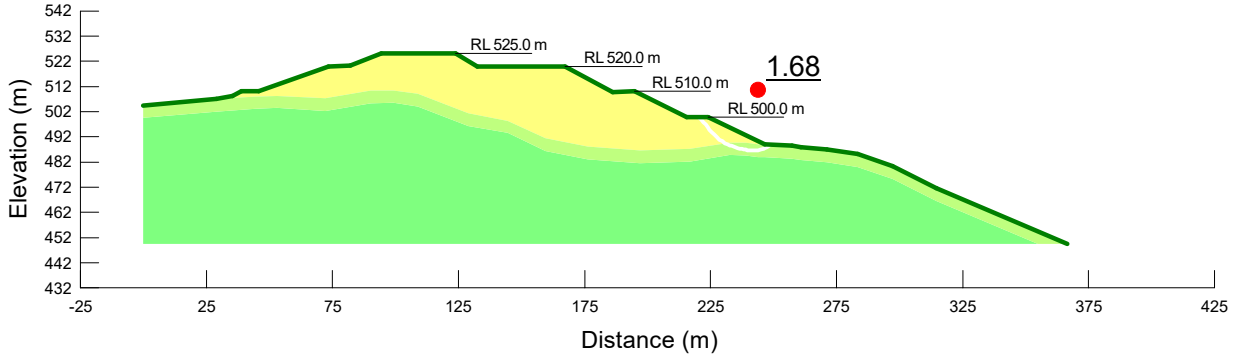
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.16

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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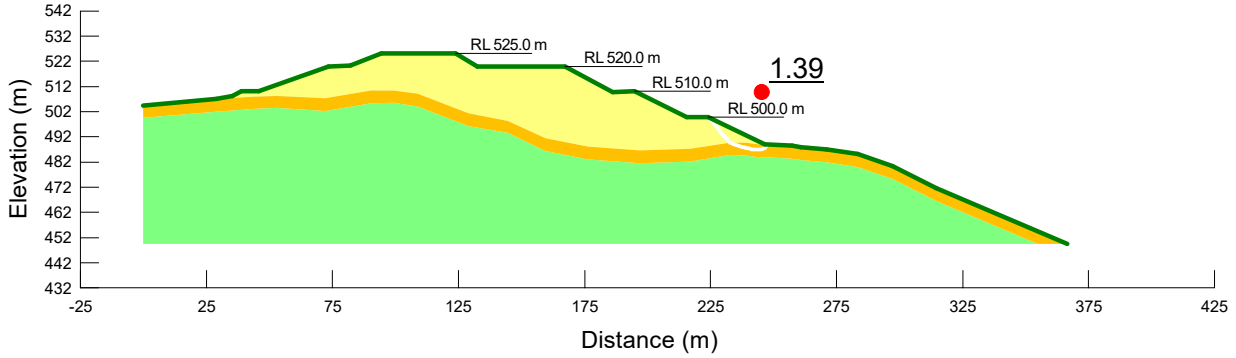
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.17

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	5
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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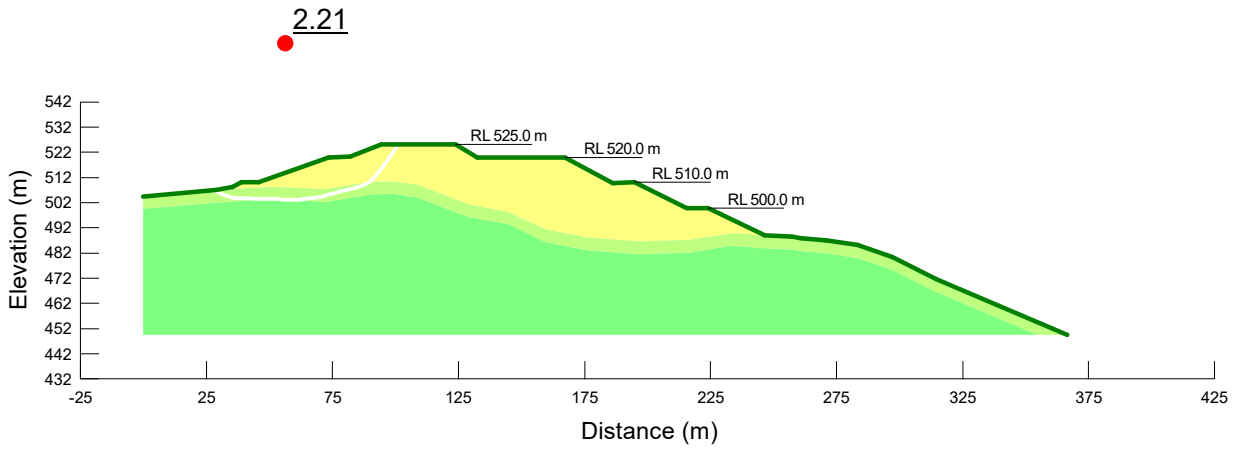
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.18

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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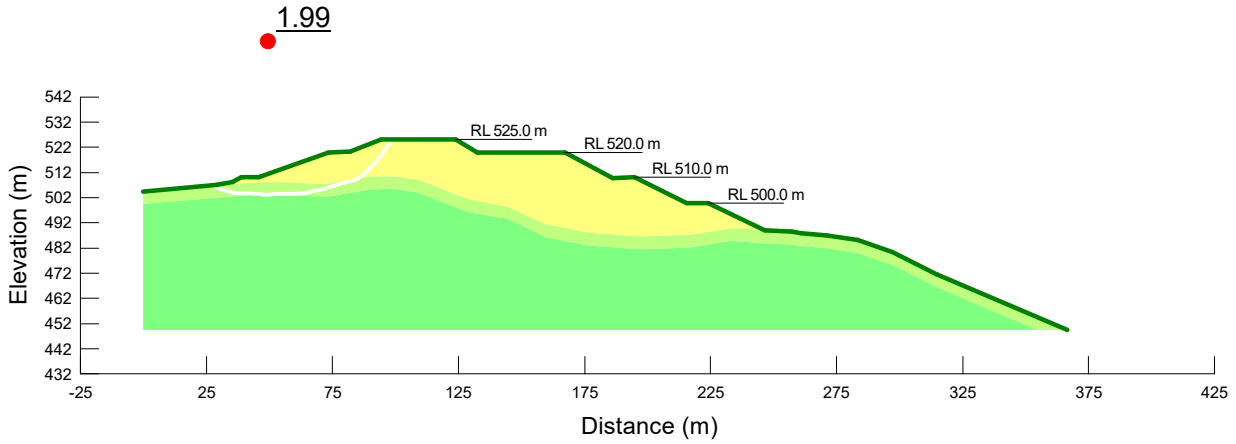
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Upstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.19

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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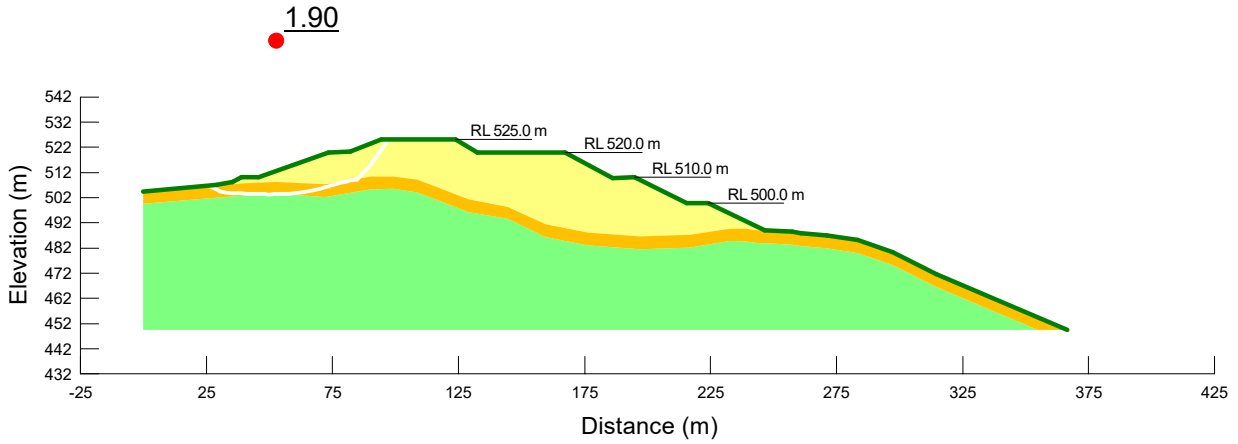
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Upstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.20

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	5
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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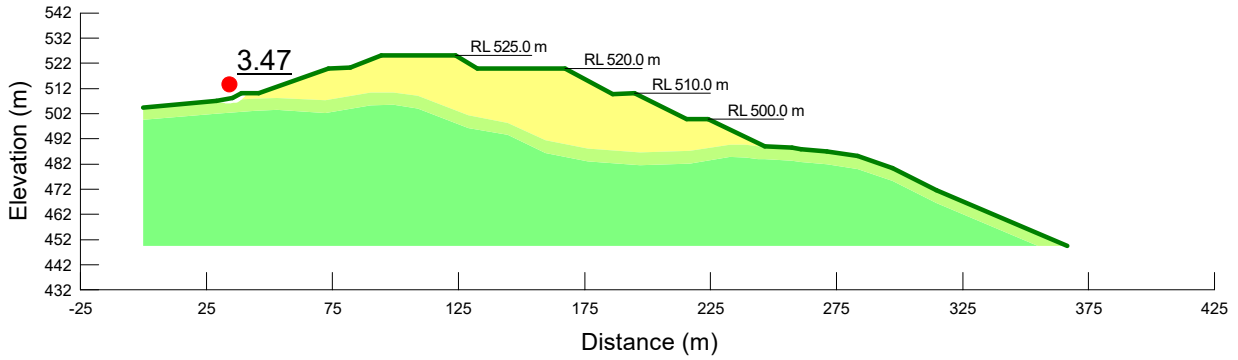
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Global) - Upstream - Short-Term Undrained

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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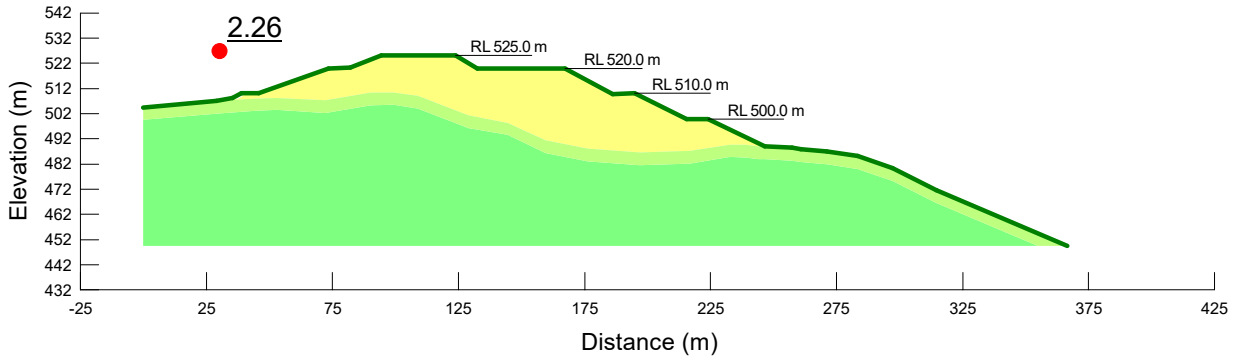
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Upstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.22

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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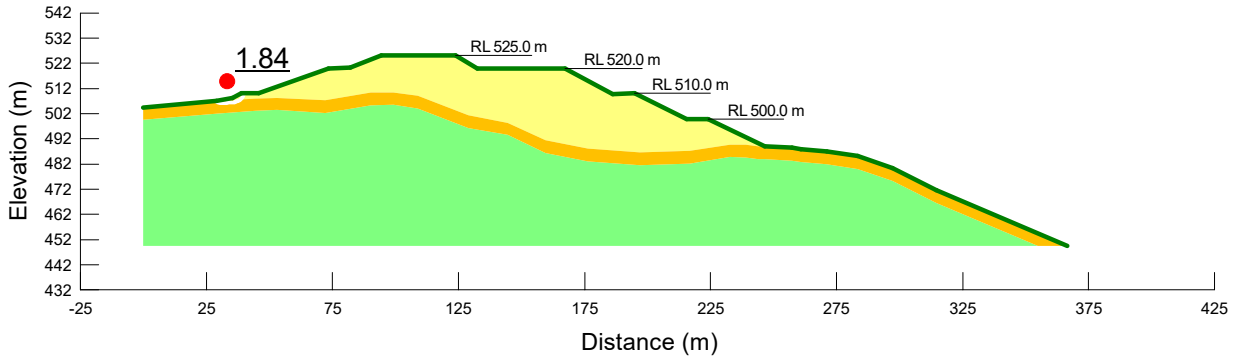
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Upstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.23

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	5
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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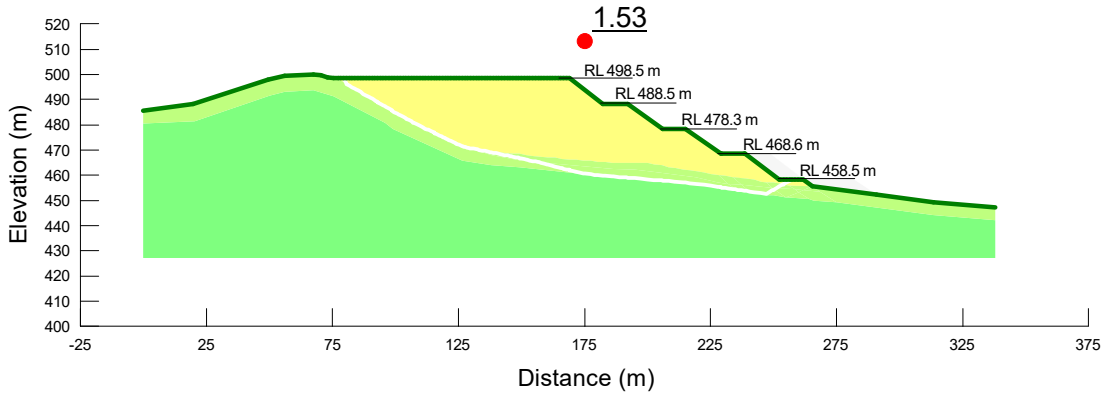
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

Pit 6 WRD (Local) - Upstream - Short-Term Undrained

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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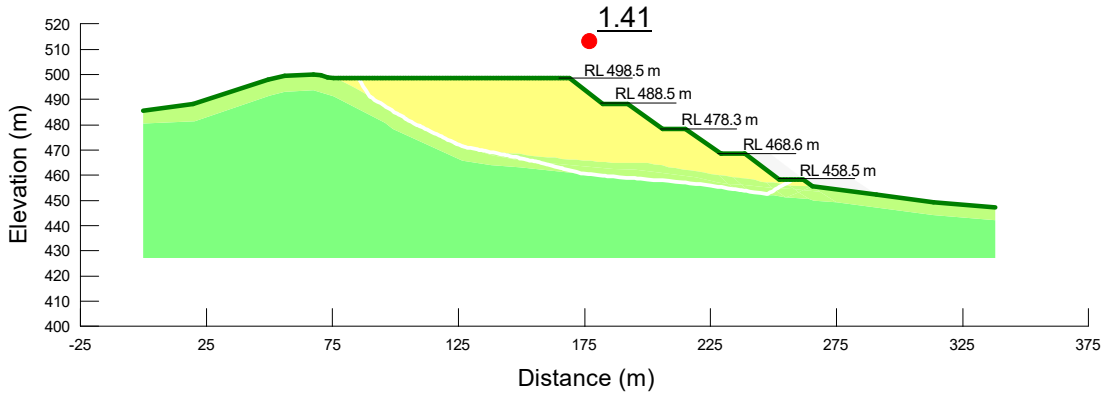
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Global) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.25

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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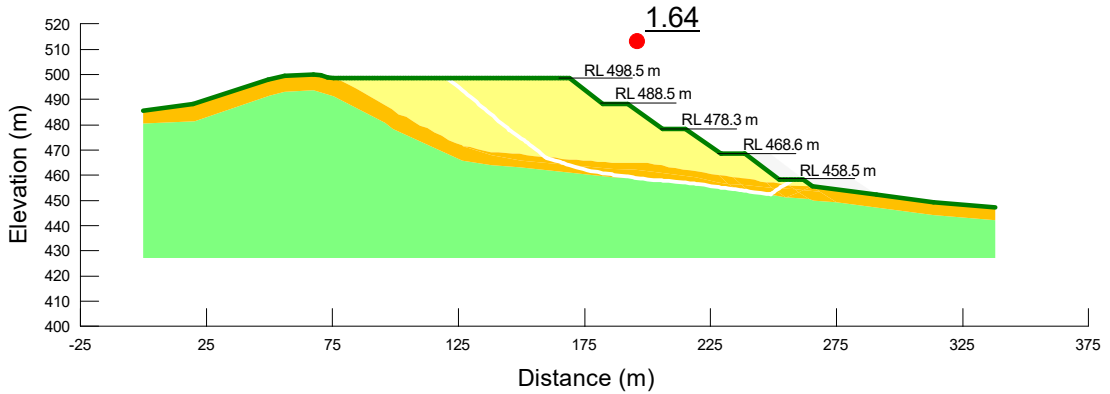
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Global) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.26

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	7
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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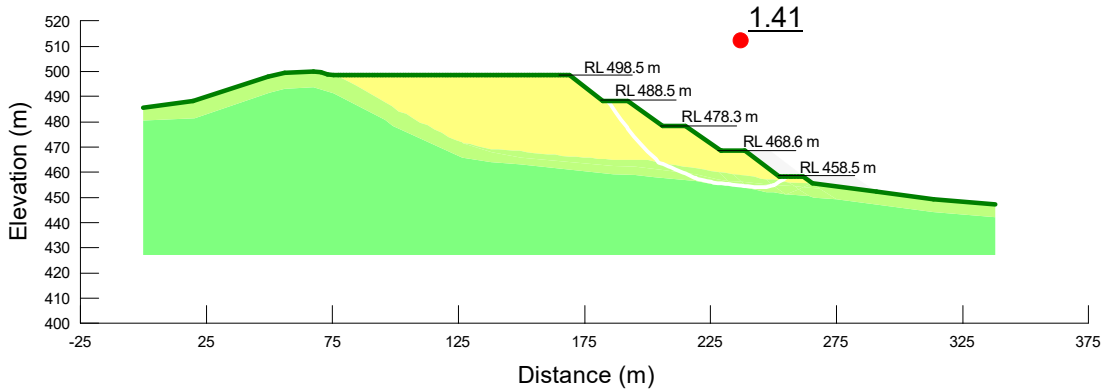
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Global) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.27

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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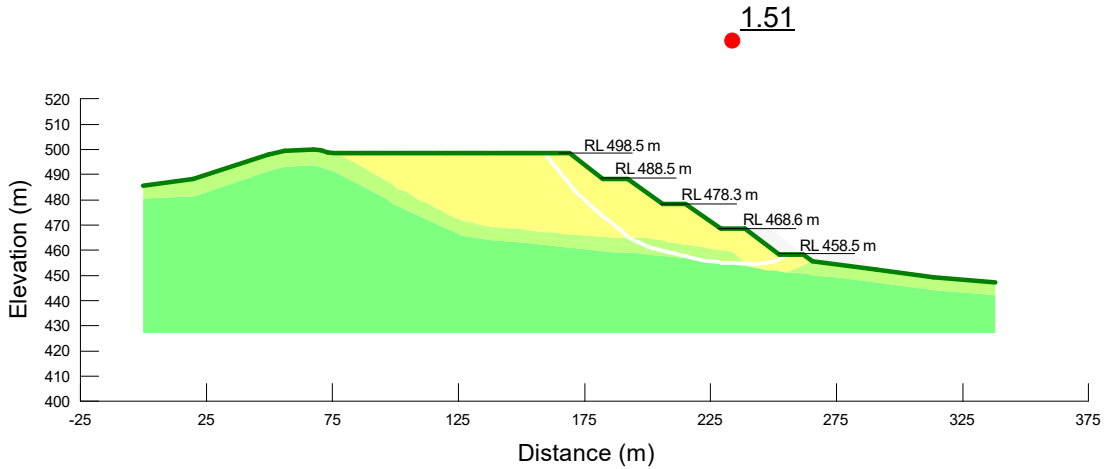
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Local) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.28

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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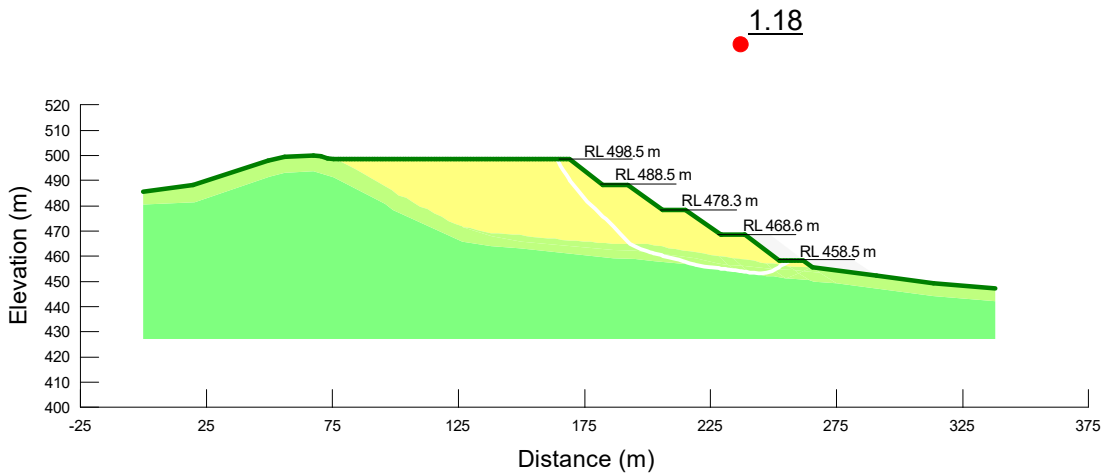
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Local) - Downstream - Long-Term Drained - Box Cut + Buttress

Date: 11/11/2025 | Job No: 250689 | FIGURE B.28A

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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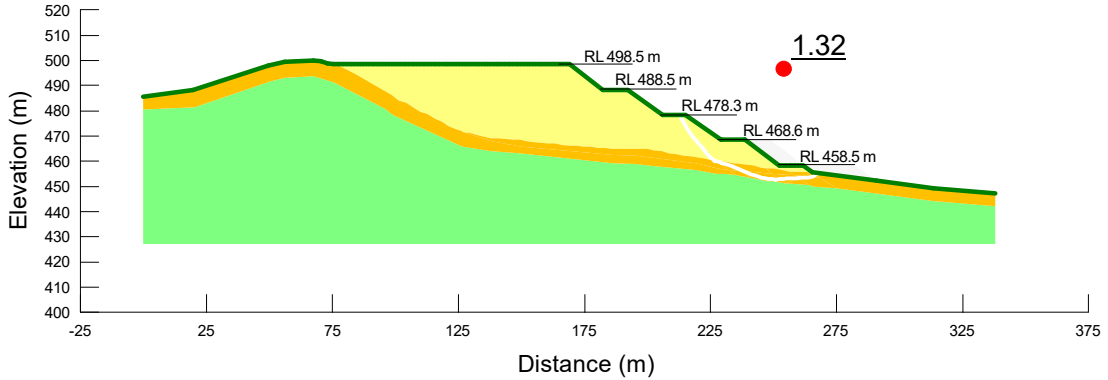
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Local) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.29

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	7
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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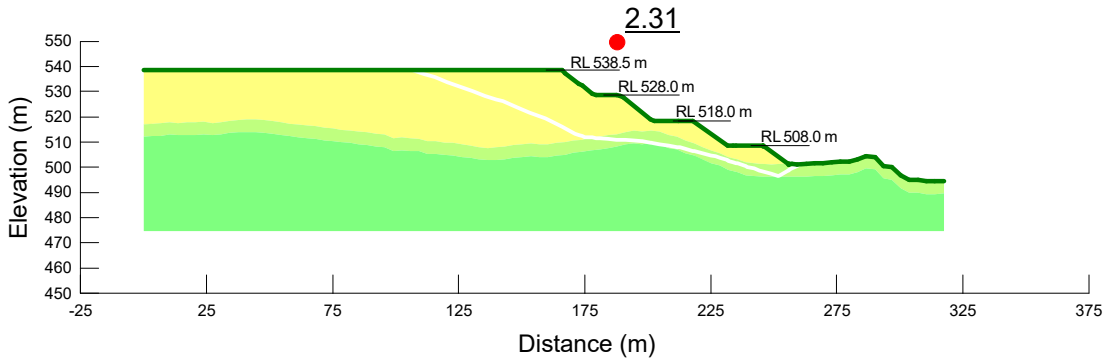
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

SW WRD (Local) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.30

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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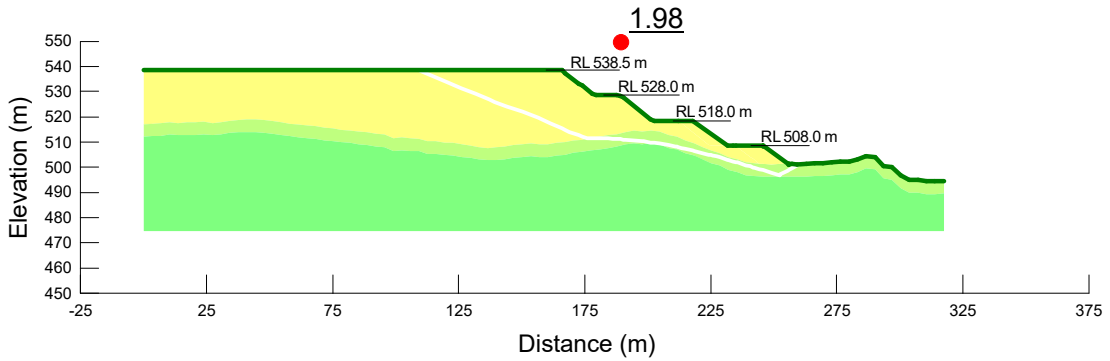
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

NW WRD (Global) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.31

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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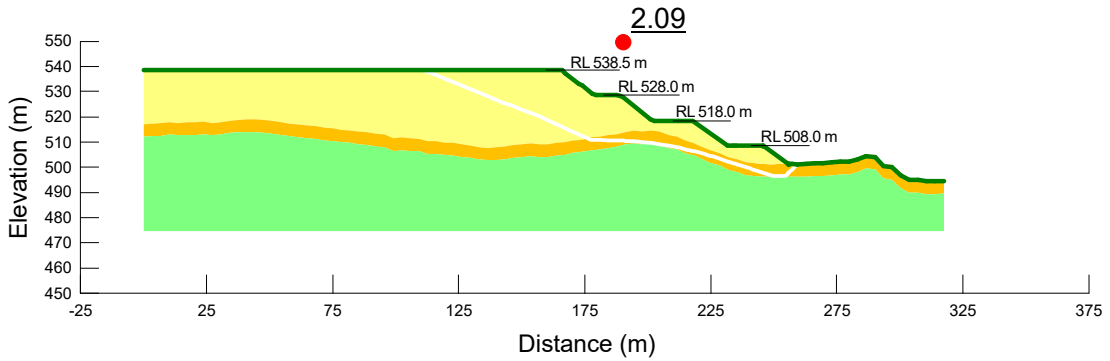
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

NW WRD (Global) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.32

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	7
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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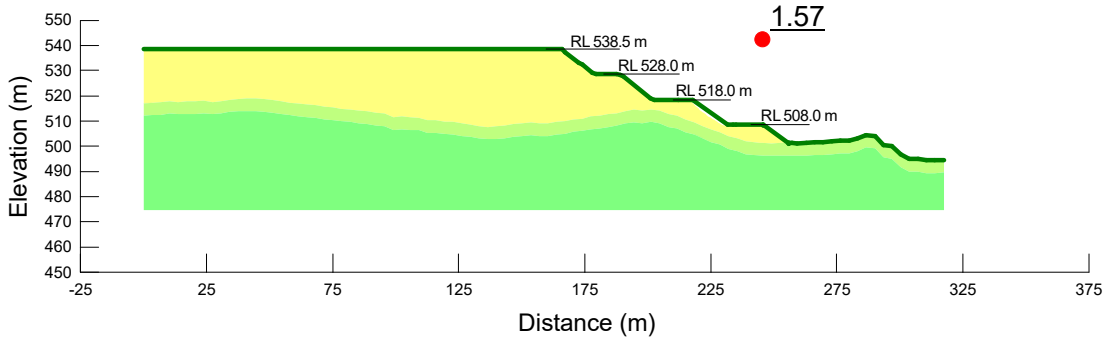
NW WRD (Global) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.33

\\atcscef2.mpawatc.local\Projects_L_SC\AgateC\250689 AgateC Agate Creek Mine plan update\Project Data\Data and Calcs\SlopeW\July 2025\250689 Updated WRD Slope Stabilities_ SW&NW_10112025.gsz

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB)	Hoek-Brown	20		500	Yes	10	20	0	0.57432619	0.00013791281	0.54372075	490.3
	Rock Fill	Shear/Normal Fn.	20	Leps_LB									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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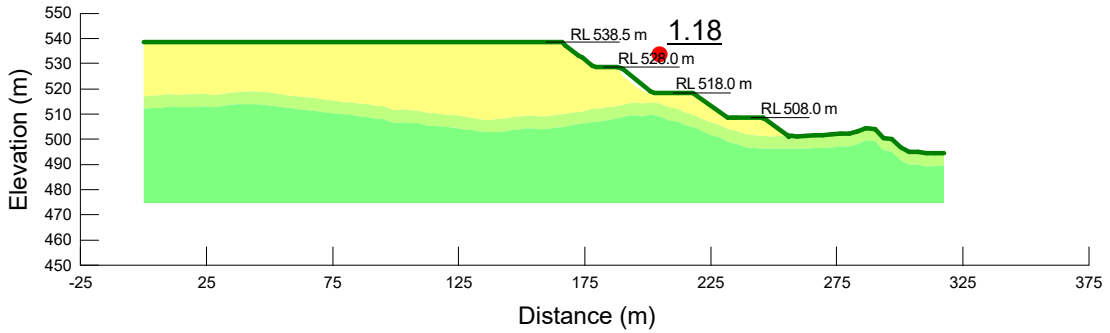
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

NW WRD (Local) - Downstream - Long-Term Drained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.34

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	Shear/Normal Strength Fn.	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)
	Residual Material (HB-Pseudo)	Hoek-Brown	20		500	Yes	10	16	0	0.49787068	8.8426989e-05	0.55714686	256.33
	Rock Fill (Pseudo)	Shear/Normal Fn.	20	Leps_LB_20PerReduction									
	Weathered rock (HB)	Hoek-Brown	22		5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55



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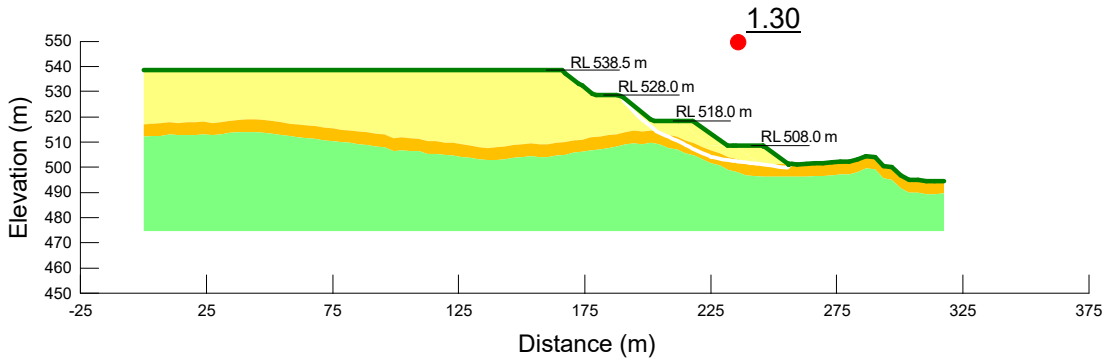
AGATE CREEK GOLD MINE - WASTE ROCK DUMP MANAGEMENT - FINAL DESIGN LANDFORM

NW WRD (Local) - Downstream - Post-Seismic

Date: 11/11/2025 | Job No: 250689 | FIGURE B.35

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Color	Name	Slope Stability Material Model	Unit Weight (kN/m³)	UCS Intact (kPa)	Calculated from	Intact Rock Parameter mi	Geological Strength Index GSI	Disturbance Factor D	Parameter mb	Parameter s	Parameter a	Max Confining Stress Sigma 3 (kPa)	Shear/Normal Strength Fn.	Tau/Sigma	Minimum Shear Strength (kPa)
	Residual Material (SHANSEP - Short-Term)	SHANSEP	20											0.35	7
	Rock Fill	Shear/Normal Fn.	20										Leps_LB		
	Weathered rock (HB)	Hoek-Brown	22	5,000	Yes	10	35	0	0.98133295	0.000730178	0.51594989	683.55			



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NW WRD (Local) - Downstream - Short-Term Undrained

Date: 11/11/2025 | Job No: 250689 | FIGURE B.36