Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6685/2022/1
Works approval holder	Regis Resources Ltd
ACN	28 009 174 761
Registered business address	Level 2, 516 Hay Street SUBIACO WA 6008
DWER file number	DER2022/000105
Duration	17/11/2022 to 16/11/2025
Date of issue	16/11/2022
Premises details	Duketon Gold Project M38/498 and M38/499 Shire of Laverton As defined by the premises maps attached in Schedule 1

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production / design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	4.0 million tonnes per annum (Mtpa)

This works approval is granted to the works approval holder, subject to the attached conditions, on 16 November 2022, by:

Alana Kidd
Digitally signed by Alana Kidd
Date: 2022.11.16 15:29:19 +08'00'

A/ SENIOR MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
16/11/2022	W6685/2022/1	Works approval granted

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install all the critical containment infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Moolart Well TSF3 Embankments	• The embankment will be zoned with an upstream zone of roller compacted clayey mine waste and traffic compacted waste dump downstream zone. • The clayey mine waste materials to be used in the upstream zone should be predominantly sandy clay, clayey gravels and clayey saprolite materials. • Mine waste used to construct embankments should comprise of well graded clayey gravel with ≥20% to <70% fines content, and free of boulders. The mine waste shall be of non-acid forming (NAF) class. The physical properties of the mine waste should be confirmed by laboratory testing as part of construction. • The maximum embankment height of 15.0 m (maximum crest height of RL555.0). • Moolart well TSF3 embankment will have design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a minimum crest width of 18.0 m. • Along the western corridor where an existing powerline and access road are located, the Moolart well TSF3 embankment will have design slopes of 1(V):2(H) upstream and 1(V):1.5(H) downstream, with a minimum crest width of 29.0 m, during its operational life. • The embankment crest will have a 2% cross-fall towards the upstream side, 0.5 m (min.) high rock/mine waste windrow at the downstream crest, and above ground tailings pipeline at the upstream crest. • multiple spigots will be located on the perimeter of the embankment crest. Nominal 40 m intervals between spigots • construction, layout, and general arrangement as specified in Figures 2 to 5 of Schedule 1	As depicted in Schedule 1, Figure 1 to 6

	Infrastructure	Design and construction / installation requirements	Infrastructure location
2.	Moolart Well TSF3 – Decant Infrastructure	• construction, layout, and general arrangement as specified in Figures 2 to 5 of Schedule 1 • pontoon-mounted decant pump installed located within a rock ring-type central decant structure. • The decant accessway will be constructed using traffic compacted mine waste (Zone C) materials. • The decant accessway has design slopes of 1:1.5 (V: H), 18.0 m crest width, and a transversal slope of 10 from the embankment down to the rock-ring decant. The crest of the decant causeway will have 0.5 m (min.) high rock/mine windrows on both sides, with breaks in the windrow on the low side to allow surface water to run off. The rock-ring decant will be 30.0 m in diameter and has design slopes of 1:1 (V: H) and a crest width of 4.0 m. • The minimum capacity of the water recovery system should be not less than 420 tph (tonnes per hour) including the additional capacity to recover water from design storm events.	As depicted in Schedule 1, Figure 2 to 6
3.	Moolart Well TSF3 – Temporary pumps	• Temporary pumps installed within a small rock ring or sump at the TSF3 basin to ensure effective early water return to the plant.	As depicted in Schedule 1, Figure 7.
4.	Moolart Well TSF3 - Seepage recovery infrastructure	• A seepage collection system, comprising seepage intersection trenches, collection trenches and manholes will be constructed underneath parts of the embankment to reduce any potential seepage. • The seepage interception trenches will be nominally 1 m wide and 0.6 m deep, with the seepage collection trenches having similar depths. The collection manholes will comprise a tower constructed using concrete well liners with a minimum depth of approximately 1.35 m below the levels of collection seepage trenches, including slab base. • constructed as per specified in Figure 2 to 5 of Schedule 1.	As depicted in Schedule 1, Figure 2 to 6
5.	Moolart Well TSF3 – discharge and return pipelines	• reinstatement and/or modification of existing TSF1 pipelines as presented Figure 1 of Schedule 1. • pipelines shall be fitted with flow meters and telemetry to record the volume of tailings discharged to the TSF and water recovered from the TSF • pipelines shall be fitted with pressure transmitters at each end with alarms. • tailings pipelines shall be located within bunds or trenches with sufficient capacity to ensure liquors are captured within the trench for a period equal to the time between routine inspections (minimum twice daily).	As depicted in Schedule 1, Figure 1
6.	Moolart Well TSF3 - Vibrating wire piezometers (VWPs)	• Six VWPs to be installed within the TSF embankment • VWPs to be fitted with data loggers.	As depicted in Schedule 1, Figure 5

Construction of Monitoring and Seepage Recovery Infrastructure

2. The works approval holder must design, construct, and install groundwater monitoring bores in accordance with the requirements specified in Table 2.

Table 2: Infrastructure requirements – groundwater monitoring bores

Infrastructure	Design, construction, and installation requirements	Timeframe
Groundwater monitoring bore(s)	<u>Bore location and number:</u> A minimum of 5 additional bores to be constructed surrounding Moolart Well TSF3. Appropriate location and number of bores to be assessed and identified by suitably qualified hydrogeologist, based on the presence of targeted aquifer structural features, supported by geological and geophysical assessments, including ground-based investigations. The proposed groundwater monitoring to target at minimum, a shallow, phreatic aquifer (<10 mBGL), as well as the deeper, fractured bedrock aquifer (>40 mBGL) with duplex monitoring bores. RRLMWMB020 and RRLMWMB024 must also be added to TSF3 proposed monitoring programme (in addition to the 5 bores).	Must be constructed, developed (purged), and determined to be operational prior to the commencement of time limited operations.
	<u>Bore design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores* where applicable. Bore screens must target the part, or parts, of the aquifer most likely to be affected by contamination. Where temporary/seasonal perched features are present, bores must be nested, and the perched features individually screened.	
	<u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring bores. A record of the geology encountered during drilling must be described and classified in accordance with the *Minimum Construction Requirements for Water Bores in Australia,* ensuring that sufficient information is recorded to provide a thorough understanding of the geological profile. Any observations of staining / odours or other indications of contamination must be included in the bore log.	
	<u>Bore construction log:</u> Bore construction details must be documented within a bore construction log to demonstrate compliance with *ASTM D5092/D5092M-16* where applicable for bore design and construction. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.	
	<u>Bore development:</u> All installed monitoring bores must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the bore screen to ensure the hydraulic functioning of the bore. A detailed record should be kept of bore development activities and included in the bore construction log.	

Infrastructure	Design, construction, and installation requirements	Timeframe
	Installation survey: the vertical (top of casing) and horizontal position of each monitoring bore must be surveyed and subsequently mapped by a suitably qualified surveyor.	
	Bore network map: a bore location map (using aerial image overlay) must be prepared and include the location of all monitoring bores in the monitoring network and their respective identification numbers.	

3. The works approval holder must decommission any monitoring bores within the Moolart Well TSF3 footprint in accordance with the *Minimum Construction Requirements for Water Bores in Australia*.

4. The works approval holder must design, construct, and install seepage recovery infrastructure in accordance with the requirements specified in Table 3.

Table 3: Seepage Recovery Infrastructure - Design and construction requirements / installation requirements

Infrastructure	Design and construction requirement / installation requirement	Infrastructure location	Timeframe
Seepage recovery bores and/or trenches	Appropriate location and number of bores or the need for additional recovery trenches or upgrade/maintenance of existing TSF1 recovery infrastructure to be assessed and identified by suitably qualified hydrogeologist, supported by review of current monitoring data, identification of receptors, interpretation of groundwater flow modelling, geological and geophysical assessments. At minimum RRLMWPB013, needs to be reinstated and/or available for use.	Must be situated at locations targeted to recover seepage.	Must be constructed and determined to be operational/available for use prior to the commencement of time limited operations.

Installation of meteorological monitoring unit

5. The works approval holder must ensure an on-site meteorological monitoring unit is available to measure daily rainfall and evaporation near the Moolart Well TSF3. The monitoring unit must be determined to be operational prior to the commencement of time limited operations.

Geochemical characterisation of tailings

6. The works approval holder must undertake further geochemical testing on synthetic tailings that are produced from composite samples (at least three composite samples) of the typical mix of ore materials that would be processed at Moolart Well. Analysis to be undertaken as per Schedule 2 and to be completed prior to the commencement of time limited operations.

Compliance reporting (critical containment infrastructure)

7. The works approval holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.

8. The Critical Containment Infrastructure Report required by condition 7 must include as a minimum the following:

(a) certification by a suitably qualified geotechnical engineer that each item of critical containment infrastructure or component(s) thereof, as specified in condition 1, has been built and installed in accordance with the requirements specified in condition 1;

(b) certification by a suitably qualified geotechnical engineer, that the infrastructure or component(s) thereof, as specified in condition 1 have been constructed to satisfy the design intent;

(c) as constructed plans and a detailed site plan showing the location and dimensions for each item of critical containment infrastructure or component thereof, as specified in condition 1;

(d) photographic evidence of the installation of the infrastructure; and

(e) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Compliance reporting (monitoring and seepage recovery infrastructure)

9. The works approval holder must within 30 calendar days of infrastructure or equipment required by conditions 2, 3, 4 and 5 being constructed, decommissioned and/or installed:

(a) undertake an audit of their compliance with the requirements of conditions 2, 3, 4 and 5; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

10. The Environmental Compliance Report required by condition 9, must include as a minimum the following:

(a) certification by a suitably qualified hydrogeologist, that the infrastructure or component(s) thereof, as specified in condition 2, 3 or 4, have been constructed or decommissioned in accordance with the relevant requirements specified in condition 2, 3 and 4;

(b) map clearly showing the location and label of installed monitoring bores and seepage recovery infrastructure as specified in condition 2 and 4;

(c) bore logs, justification of location and number of monitoring bores, and seepage recovery infrastructure as specified in condition 2 and 4;

(d) photographic evidence of presence of the meteorologic station unit specified in condition 5;

(e) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Compliance reporting (Tailings geochemical characterisation)

11. The works approval holder must within 30 calendar days of geochemical analysis required by condition 6 being undertaken:

(a) undertake an audit of their compliance with the requirements of conditions 6; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

12. The Environmental Compliance Report required by condition 11, must include as a minimum the following:

(a) certification by a suitably qualified hydrogeologist or geochemist, that the geochemical analysis, as specified in condition 6 has been undertaken with the relevant requirements specified in condition 6;

(b) inform which chemical constituents would be of particular concern in seepage from Moolart Well TSF3;

(c) review suitability of parameters in groundwater monitoring program required by condition 21 and determine if any parameter needs to be added to the monitoring program;

(d) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Environmental commissioning requirements and emission limits

13. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 1 once the Critical Containment Infrastructure Report has been submitted for that item of infrastructure in accordance with condition 7 of this works approval.

14. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 4 may only be carried out:

(a) in accordance with the corresponding commissioning requirements; and

(b) for the corresponding authorised commissioning duration.

Table 4: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	Tailings discharge and decant water return pipelines	• visual inspection of pipelines to check for leaks or any other issues • all flow meters, telemetry, and pressure transmitters to be calibrated in accordance with manufacture's specifications • monitor and adjust tailings discharge spigots (as required) into the TSF to commence tailings beach formation • monitor and adjust tailings beach formation (as required) to ensure water flows toward the central decant • early water return pumps within TSF3 as required by condition 1 are in place and operational during commissioning	For a period not exceeding 90 calendar days in aggregate

Environmental Commissioning Report

15. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning for each item of infrastructure specified in Table 4.

16. The works approval holder must ensure the Environmental Commissioning Report required by condition 15 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of tailings material discharged and return water recovered;

(b) a summary of the environmental performance of each item of infrastructure or equipment as constructed or installed (as applicable), which at minimum includes records detailing the:

(i) hydro-testing of pipelines; and
(ii) calibration of flow meters, telemetry, and pressure transmitters.

(c) a review of the works approval holder's performance and compliance against the conditions of this works approval; and

(d) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures.

Time limited operations phase

Commencement and duration

17. The works approval holder may only commence time limited operations for an item of critical containment infrastructure identified in condition 1, where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 7 meets the requirements of that condition.

18. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 19:

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 1 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986,* if one is granted before the end of the period specified in condition 18(a).

Time limited operations requirements and emission limits

19. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Infrastructure and equipment requirements during time limited operations

	Infrastructure	Operational requirements	Infrastructure location
1.	Moolart Well TSF3	• throughput of 3.0 million tonnes per annum (i.e. tailings discharge into TSF3) • The minimum freeboard for the TSF under normal operating conditions is 0.7m, which includes an allowance for the temporary storage of the 1:100 years or 1% average exceedance probability (AEP) storm event of 72-hour duration whilst maintaining the required total freeboard. • to be maintained as per the design and construction / installation requirements in condition 1. • Tailings in the form of slurry will be discharged sub-aerially and cyclically into TSF3 in thin discrete layers. • Temporary water return pumps must be operational and able to maximise early water return to the plant, avoiding accumulation of water within the facility basin. • daily visual inspection of freeboard to confirm capacity is available. • weekly visual inspection of the integrity of the embankment.	Schedule 1: Figure 1 to 6

	Infrastructure	Operational requirements	Infrastructure location
2.	Decant infrastructure	• to be maintained as per the design and construction / installation requirements in condition 1 • daily visual inspection of the location and size of the decant pond, ensuring early water return is maximised	
3.	Spigots for tailings deposit	• maintain and operate spigots • daily visual inspections to check for integrity or any malfunction	
4.	Cut-off trench/ Seepage recovery infrastructure	• daily visual inspections for integrity	
5.	Tailings discharge and return pipelines	• to be maintained as per the design and construction / installation requirements in condition 1 • daily visual inspections when in operation to check the integrity of pipelines, V drains, and bunding • monthly inspection of flow meters, telemetry, and pressure transmitters	
6.	VWPs	• weekly inspections to ensure integrity of VWPs • monitoring undertaken at least monthly via data loggers	

Emissions during time limited operations

20. The works approval holder must ensure that the emissions specified in Table 6 are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 6: Authorised discharge points

Emission	Discharge point	Discharge point location
Tailings	Mollart Well TSF3	As shown in Figure 1 of Schedule 1

Monitoring during time limited operations

21. Table 7 and must not exceed the corresponding limit in that table.

Table 7: Groundwater monitoring during time limited operations

Monitoring location	Parameters	Limit	Unit	Frequency & Averaging period	Sampling method
Groundwater monitoring bore(s): location to be determined as per condition 2.	Standing water level (SWL)[1]	Not less than 4	mbgl	Monthly	- AS/NZ 5667.1 & AS/NZS 5667.11 By a NATA accredited laboratory
	pH[1]	-	pH unit	Quarterly & Spot sample	
	Total dissolved solids (TDS)	-	mg/L		
	Weak acid dissociable cyanide (WAD CN)	<0.5			
	Total cyanide	-			
	Carbonate Alkalinity as CO_3	-			
	Nitrate, as NO_3	-			
	Arsenic (As)	-			
	Antimony (Sb)	-			
	Chromium (Cr)	-			
	Cobalt (Co)	-			
	Copper (Cu)	-			
	Iron (Fe)	-			
	Lead (Pb)				
	Mercury (Hg)	-			
	Nickel (Ni)	-			
	Zinc (Zn)	-			
	Bicarbonate (HCO_3)	-			
	Calcium (Ca)	-			
	Chloride (Cl)	-			
	Potassium (K)	-			
	Manganese (Mn)				
	Magnesium (Mg)	-			
	Sodium (Na)	-			
	Sulfate (SO4)	-			
	Uranium (U)	-			

Note[1]: In-field non-NATA accredited analysis permitted.

22. The works approval holder must record the results of all monitoring required by condition 21.

23. The works approval holder must undertake a water balance for the Moolart Well TSF3 each monthly period, and (as a minimum) record the following information:

(a) site rainfall obtained from on-site meteorological unit as required by condition 5;

(b) evaporation rate obtained from on-site meteorological unit as required by condition 5;

(c) surface runoff;

(d) decant water stored and recovery volumes;

(e) seepage recovery volumes from TSF underdrainage and other seepage infrastructure;

(f) volume of tailings deposited;

(g) tailings solid content (w/w %);

(h) volume of water retained in tailings; and

(i) calculated seepage rate; compared against predicted seepage rates for the TSF.

Compliance reporting

24. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 90 calendar days before the expiration date of the works approval, whichever is the sooner.

25. The works approval holder must ensure the report required by condition 24 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of the ore processed and tailings discharged into TSF3;

(b) a summary of ambient groundwater monitoring results obtained during time limited operations under condition 21;

(c) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable), which includes records detailing the:

(i) Decant pump;
(ii) Spigots for tailings deposit;
(iii) Cut-off trench;
(iv) Tailings discharge and return pipelines; and
(v) VWPs.

(d) a review of performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; and

(e) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Notification

26. The works approval holder must immediately after becoming aware of any breach of any limit specified in the works approval, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which condition was not complied with and a copy of the corresponding data and previous trigger level data (if applicable);

(b) the time and date when the non-compliance occurred;

(c) if any environmental impact has occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(d) the details and result of any investigation undertaken into the cause of the non-compliance;

(e) what action(s) has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(f) what action(s) will be taken and the date by which it will be taken to prevent the non-compliance, including monitoring undertaken to ensure compliance is met and there is and no environmental impact.

Records and reporting (general)

27. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

28. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 19;

(c) monitoring undertaken in accordance with conditions 23 ; and

(d) complaints received under condition 27.

29. The books specified under condition 28 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 8 have the meanings defined.

Table 8: Definitions

Term	Definition
ACN	means Australian Company Number
AEP	means annual exceedance probability. The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
annual period	a 12-month period commencing from 1 January until 31 December of the immediately following year.
ANZG	means Australian and New Zealand guidelines. The Australian and New Zealand guidelines for fresh and marine water quality (ANZG 2018).
AS 1726:2017	Means Australian Standard AS 1726:2017. *Geotechnical site investigations*.
AS/NZS 3580.1.1	means Australian Standard AS/NZS 3580.1.1:2016 *Methods for sampling and analysis of ambient air Guide to siting air monitoring equipment.*
AS/NZS 3580.14	means AS/NZS 3580.14:2014 *Methods for sampling and analysis of ambient air Meteorological monitoring for ambient air quality monitoring applications.*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water quality – sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and manmade*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water quality – sampling – guidance on sampling groundwater.*
books	has the same meaning given to that term under the EP Act.

Term	Definition
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
critical containment infrastructure	means the items of infrastructure listed in condition 1.
Critical Containment Infrastructure Report	means a report to satisfy the CEO that works of critical containment infrastructure have been constructed in accordance with the works approval.
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
m	means metre(s)

Term	Definition
Minimum Construction Requirements for Water Bores in Australia	means the document *Minimum Construction Requirements for Water Bores in Australia* developed by the National Uniform Drillers Licensing Committee, as amended from time to time.
mbgl	means metre(s) below ground level
mg/L	means milligrams per litre
mm	means millimetre(s)
monthly period	means a one-month period commencing from the first day of a month until the last day of the same month.
m/s	means metre(s) per second
Mt	means million tonnes
Mtpa	means million tonnes per annum
NATA	means the National Association of Testing Authorities, Australia.
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
quarterly period	Means the four inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September, and 1 October to 31 December.
RL	means Reduced Level
suitably qualified geotechnical engineer	means a person who: (a) holds a Bachelor of Engineering recognised by the Institute of Engineers; and (b) has a minimum of five years of experience working in the area of geotechnical engineering or is otherwise approved by the CEO to act in this capacity.
suitably qualified hydrogeologist	means a person who holds a tertiary qualification specialising in environmental science, geologyor equivalent and has a minimum of three years of experience working in area of hydrogeology, including investigation and assessment of groundwater resources, or who is otherwise approved by the CEO to act in this capacity.

Term	Definition
suitably qualified geochemist	means a person who holds a tertiary qualification specializing in environmental science or equivalent and has a minimum of three years of experience working in area of geochemistry, or who is otherwise approved by the CEO to act in this capacity.
SWL	means Standing Water Level
TDS	Means Total Dissolvable Solids
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
TSF	means tailings storage facility
V:H	means vertical to horizontal ratio
VWP(s)	means vibrating wire piezometer(s)
WAD CN	means weak acid dissociable cyanide
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps and Drawings

Premises map

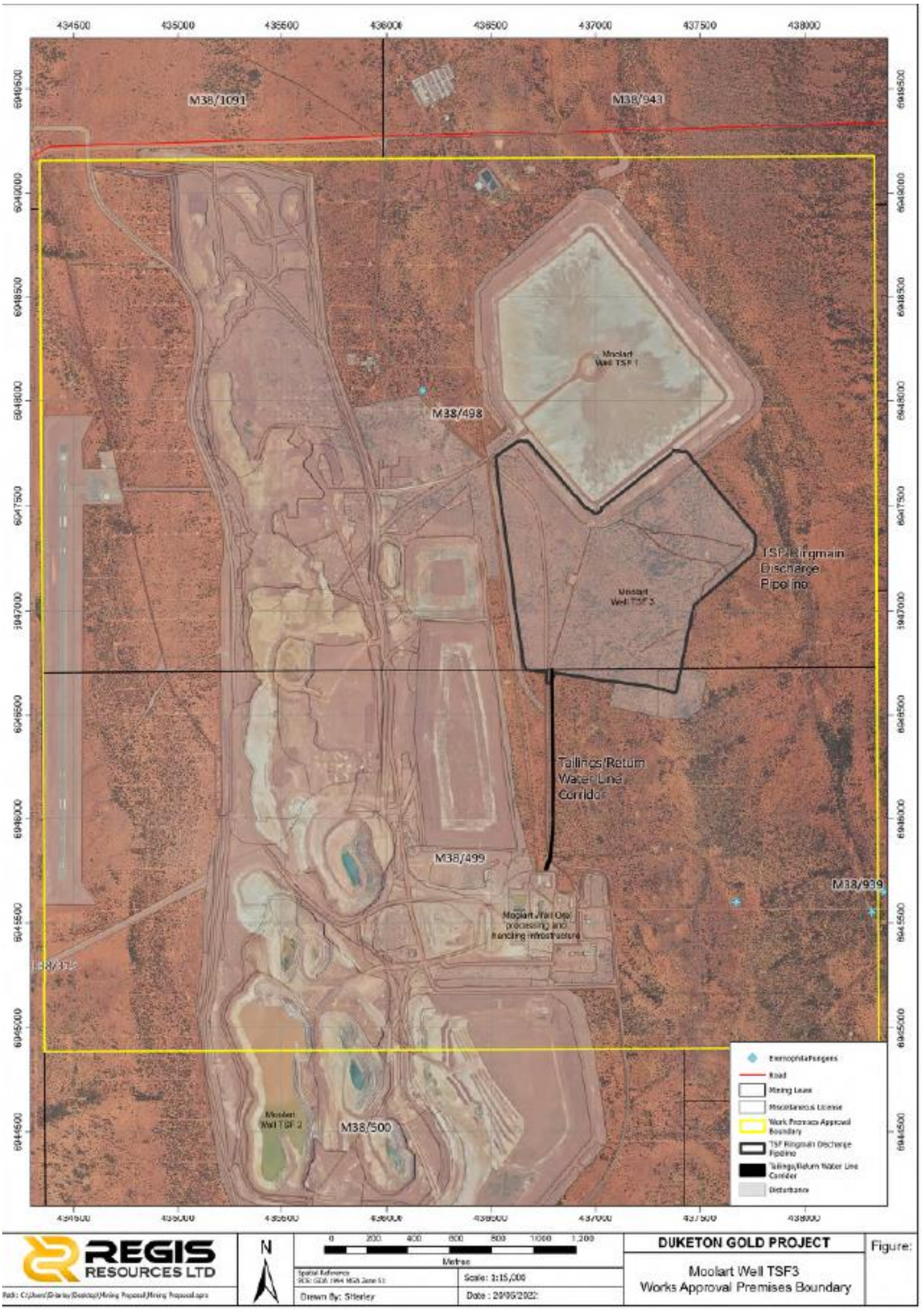


Figure 1: Map of the boundary of the prescribed premises

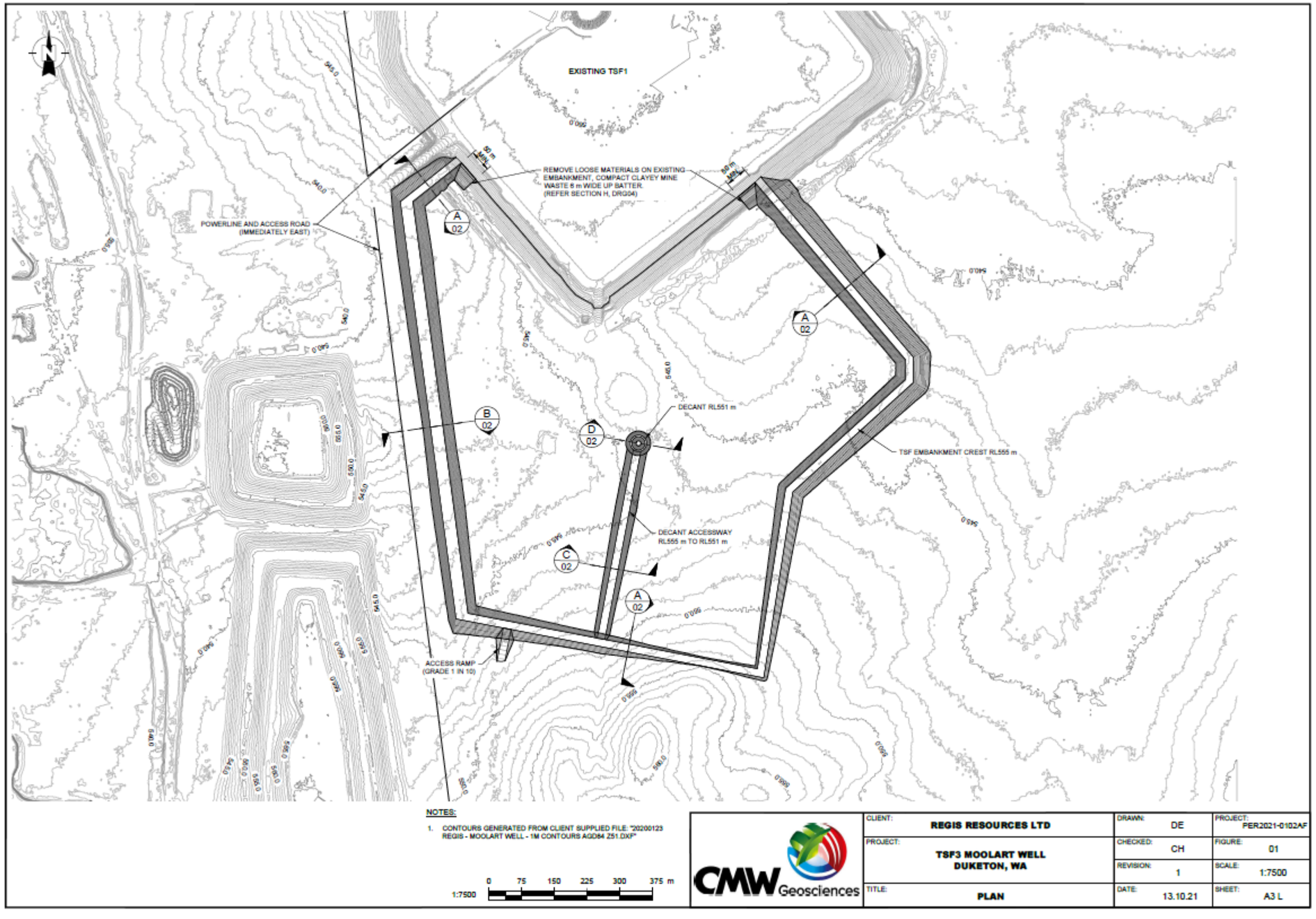
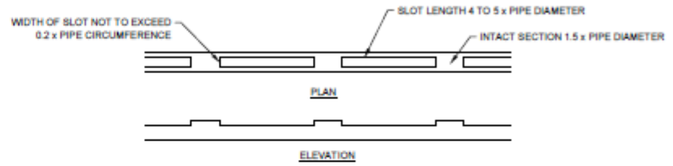
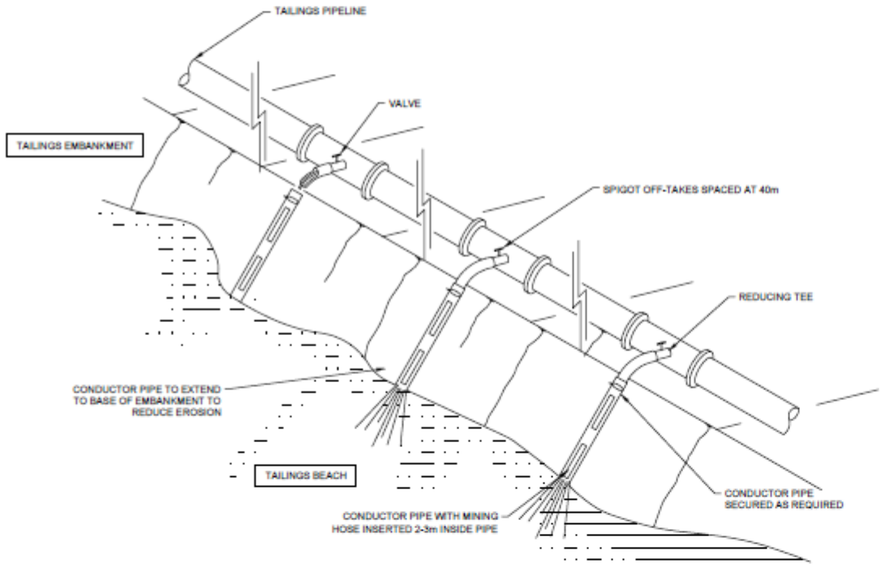


Figure 2 – Moolart Well TSF3 general arrangements

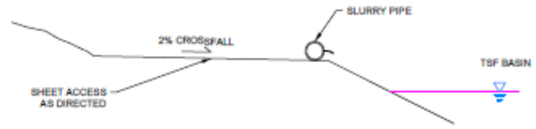
PIPELINE BUNDING - TYPICAL SECTION
1:100



CONDUCTER PIPE (SLOTTED PVC) - TYPICAL DETAIL
1:50



PROPOSED SPIGOT ARRANGEMENT
ISOMETRIC VIEW (NTS)



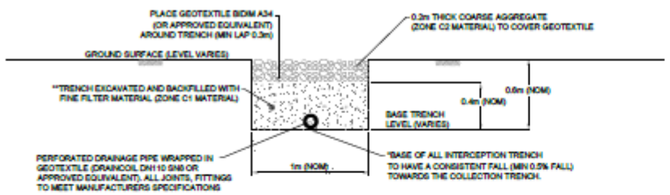
PIPE BENCH
SECTION VIEW (NTS)

NOTES:

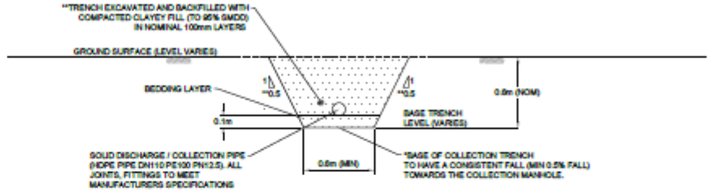
1. ALL DIMENSIONS IN METRES UNLESS SPECIFIED

CMW Geosciences	CLIENT: REGIS RESOURCES LTD	DRAWN: DE	PROJECT: PER2021-0102AF
	PROJECT: TSF3 MOOLART WELL DUKETON, WA	CHECKED: CH	FIGURE: 03
		REVISION: A	SCALE: NTS
	TITLE: PIPELINE AND SPIGOT DETAILS	DATE: 30.09.21	SHEET: A3 L

Figure 3 – Pipeline and spigot details



E 02 SEEPAGE INTERCEPTION TRENCH
1:40

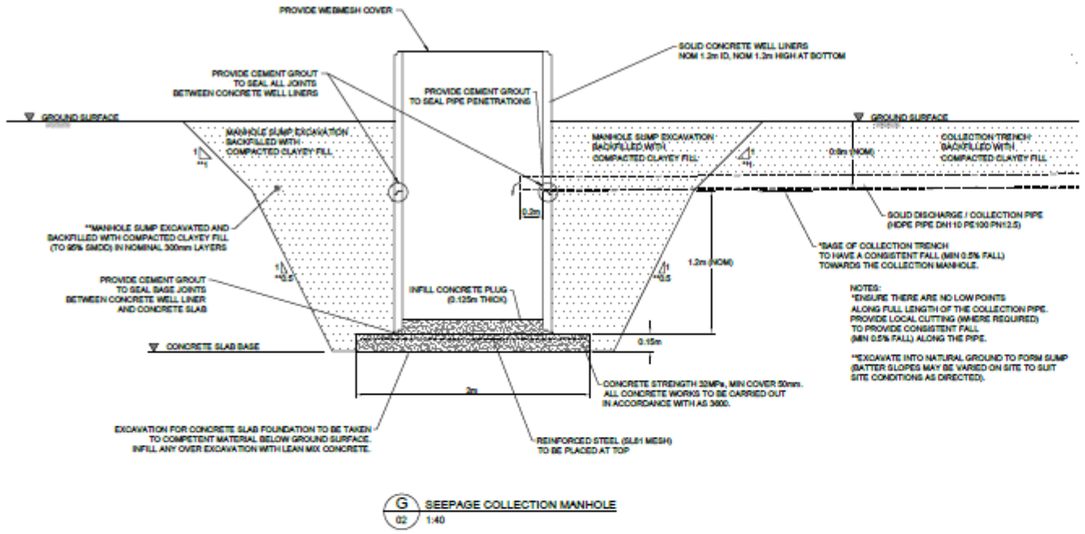


NOTES:
*ENSURE THERE ARE NO LOW POINTS ALONG FULL LENGTH OF THE COLLECTION PIPE. PROVIDE LOCAL CUTTING (WHERE REQUIRED) TO PROVIDE CONSISTENT FALL (MIN 0.5% FALL) ALONG THE PIPE.

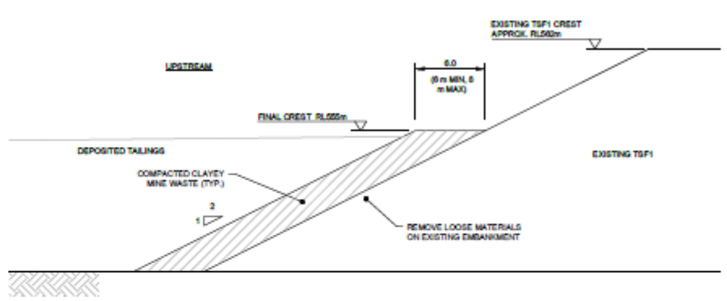
**EXCAVATE INTO NATURAL GROUND TO FORM TRENCH (BATTER SLOPES MAY BE VARIED ON SITE TO SUIT SITE CONDITIONS AS DIRECTED). COLLECTION TRENCH WILL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF WASTE DUMP EMBANKMENT.

**BACKFILL TO BE COMPACTED IN THE COLLECTION TRENCH BY HAND TAMPING AROUND THE PIPE WITH SMALL PLATE COMPACTORS. NO TRAFFIC SHALL CROSS PIPEWORK UNTIL A MINIMUM COVER OF 0.5m HAS BEEN PLACED AND COMPACTED OVER THE PIPEWORK.

F 02 SEEPAGE COLLECTION TRENCH
1:40



G 02 SEEPAGE COLLECTION MANHOLE
1:40



H 01 SECTION THROUGH EXISTING TSF1 BATTER
1:400

ZONED MATERIAL LEGEND:

ZONE C1 - UNDERDRAINAGE FINE FILTER MATERIAL: SCREENED ROCK WASTE OR PROJECT BORROW PIT GRAVELS. (GRADING 5mm TO 40mm).

ZONE C2 - UNDERDRAINAGE COARSE FILTER MATERIAL: SCREENED ROCK WASTE OR PROJECT BORROW PIT GRAVELS. (GRADING 20mm TO 75mm).

NOTES:

1. ALL DIMENSION IN METRES UNLESS SPECIFIED.

1:40 0 0.4 0.8 1.2 1.6 2.0 m

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PROJECT: TSF3 MOOLART WELL DUKETON, WA		CHECKED: CH	DRAWING: 04
		REVISION: A	SCALE: AS SHOWN
TITLE: SECTIONS & DETAILS SHEET 2		DATE: 07.09.21	SHEET: A3 L

Figure 4 – Moolart Well TSF3 – decant infrastructure, embankment, and seepage recovery infrastructure.

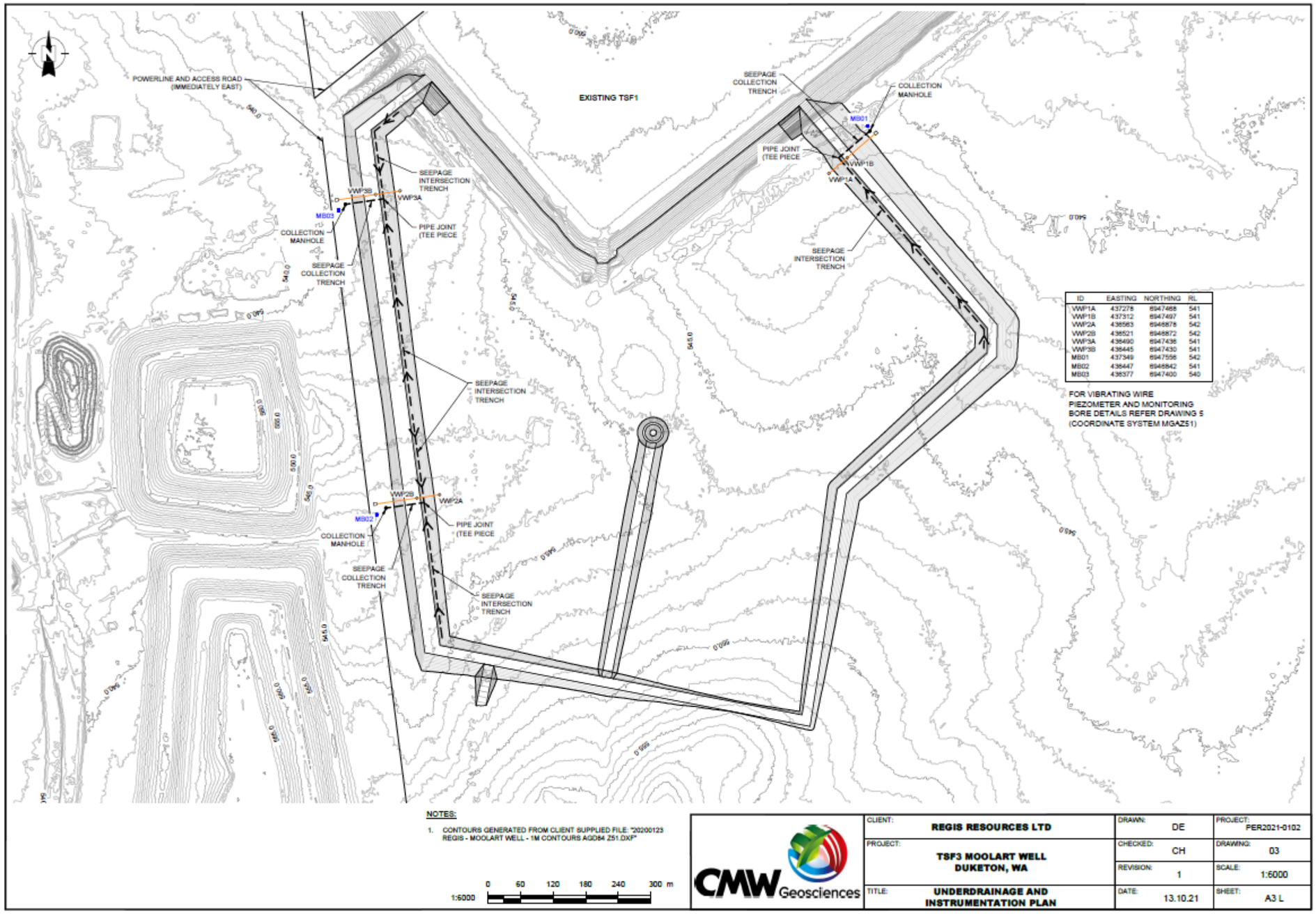

Figure 5 – Moolart Well TSF3 – Underdrainage and instrumentation plan.

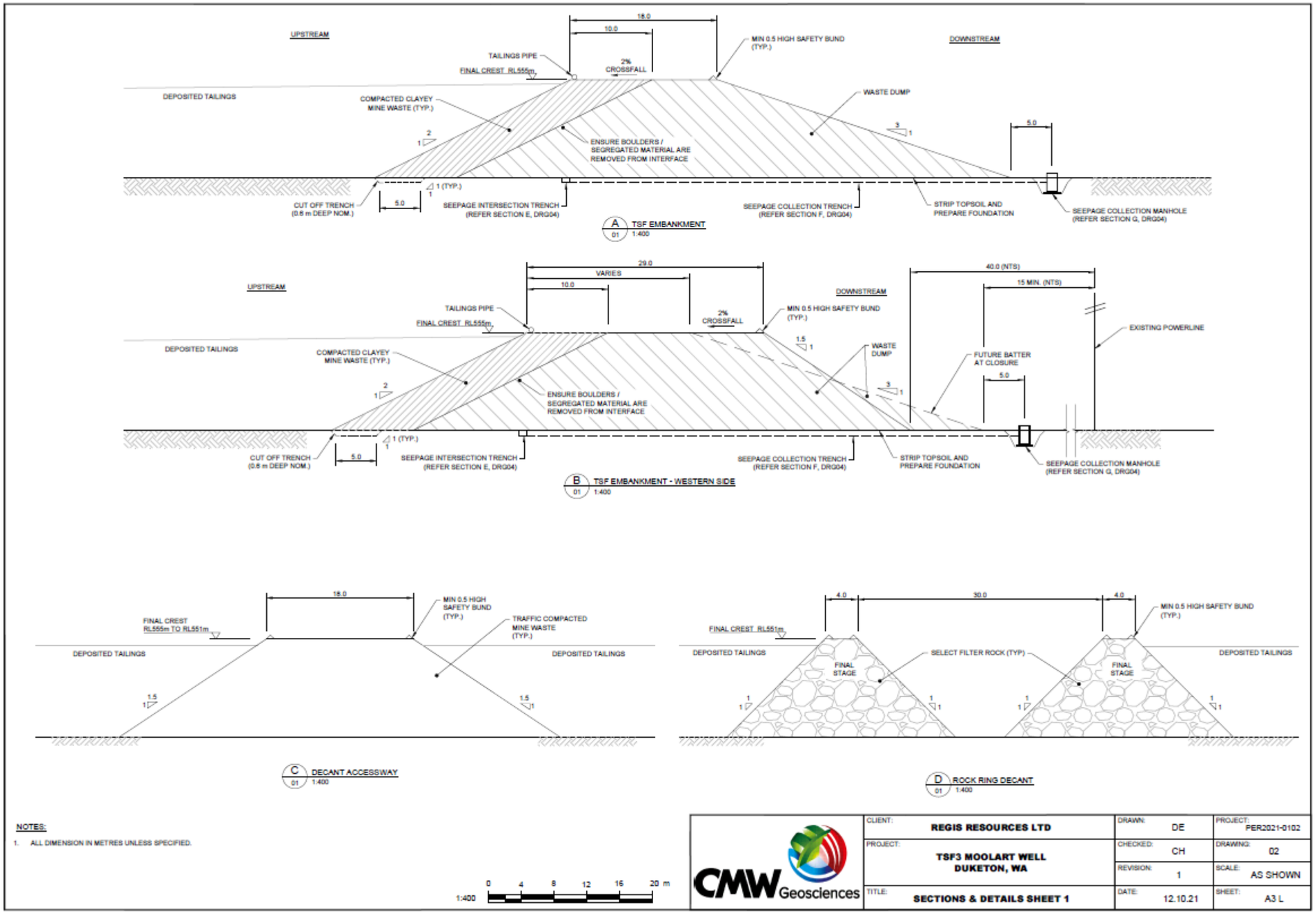

Figure 6 – Moolart Well TSF3 – Embankments and Decant accessway.

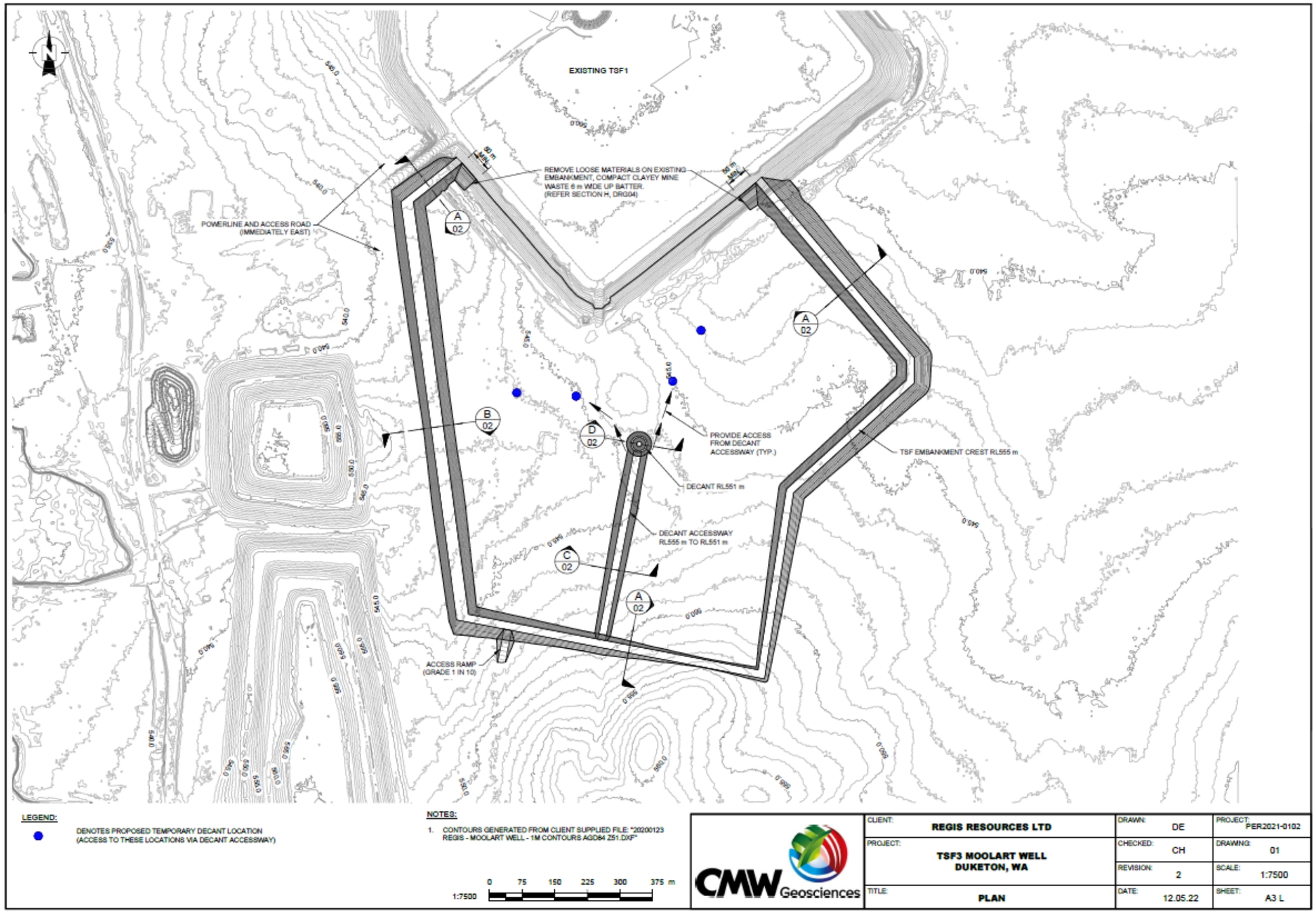

Figure 7 – Moolart Well TSF3 – Temporary pumps required for early water return to the plant (indicative location).

Schedule 2: Further tailings geochemical analysis

Additional geochemical testing is required to be undertaken on synthetic tailings that are produced from composite samples (at least three composite samples) of the typical mix of ore materials that would be processed at Moolart Well.

These samples should be milled to produce the same particle size distribution as the tailings that will be discharged to MLW TSF3, and must be chemically analysed for a standard suite of metals and metalloids to assess whether specific elements are geochemically enriched by comparison with their average crustal abundances (that is, their Global Abundance Index or GAI values are determined). The composite samples must also be subjected to an acid-base account assessment to determine whether they are potentially acid forming (PAF) materials.

Other geochemical tests that must be carried out on the composite samples are:

- The use of extraction tests on a portion of the composite samples with hydrogen peroxide buffered with ammonium citrate using the methodology outlined in Karlsson *et al*. (2021) and then chemically analysing the leachate for a range of concentrations of constituents of potential concern (CCoPC). The purpose of this test procedure is to determine whether any CCoPC are released from the tailings materials when they are subjected to prolonged oxidation. This test procedure has been shown to produce a more accurate assessment of the leaching risk under oxidising conditions than the more commonly used NAG test (Karlsson, 2022);
- The use of cyanide leaching on a portion of the composite samples to determine the concentrations of CCoPC that would be released during ore processing by cyanide; and
- The use of sub-aqueous column leaching tests on a portion of the composite samples using the methodology that is described in section 7.3 on pages 37 and 38 of the mine-waste testing guidance that was prepared by the Danish Centre for Environment and Energy (DCE, 2018).

References

1. Karlsson, T., Räisänen, M.L., Myöhänen, T., Alakangas, L. and Lehtonen, M., 2021. Hydrogen peroxide ammonium citrate extraction: mineral decomposition and preliminary waste characterisation. *Minerals*, **11**, 706. The paper is available from web site https://www.mdpi.com/2075-163X/11/7/706.
2. Karlsson, T., 2022. *Geochemical and Mineralogical Characterization of Waste Rocks for Preliminary Mine Drainage Quality Prediction*. Doctoral thesis, Luleå University of Technology, Department of Civil, Environmental and Natural Resources Engineering, Geosciences and Environmental Engineering. The thesis is available from web site https://www.diva-portal.org/smash/record.jsf?dswid=1398&pid=diva2%3A1636866.
3. DCE, 2018. *Geochemical Test Work for Environmental Impact Assessments for Mining Projects in Greenland*. The technical guidance document is available from web site https://www.researchgate.net/publication/329152650_Geochemical_test_work_in_environmental_impact_assessments_for_mining_projects_in_Greenland_-_Recommendations_by_DCE_and_GINR.