Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6205/2018/1
Works approval holder	Abra Mining Pty Limited
ACN	110 233 577
Registered business address	Level 11, 216 St Georges Terrace PERTH WA 6000
File number	DER2018/001572
Duration	01/07/2019 to 30/06/2026
Date of issue	28/06/2019
Date of amendment	30/10/2024
Premises details	Abra Base Metals Project MEEKATHARRA WA 6642 Legal description – Part of mining tenements L52/194, M52/776, G52/292 and L52/210 As defined by the premises map in Schedule 1 and coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,350,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the following conditions, on 30 October 2024, by:

Jarrod Abrahams

Digitally signed by Jarrod Abrahams
Date: 2024.10.30 15:21:54 +08'00'

MANAGER, RESOURCE INDUSTRIES
INDUSTRY REGULATION (STATE-WIDE DELIVERY)
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
28/06/2019	W6205/2018/1	Works approval issued.
10/12/2021	W6205/2018/1	Works approval amended to extend expiry date by 12 months and other administrative changes.
27/04/2023	W6205/2018/1	Works approval amended to extend expiry date to 30 June 2026 and update to the prescribed premises boundary to include mining tenements L52/194 and the remaining part of M52/776 only.
27/10/2023	W6205/2018/1	Works approval amended for the following: • removing the requirement to install a liner at the TSF Cell A basin; • altering the liner type for the TSF starter embankment from a geosynthetic clay liner to a HDPE liner; and • increase the production capacity from the current 1,200,000 tonnes per annum to 1,350,000 tonnes per annum.
30/10/2024	W6205/2018/1	Works approval amended for the following: • removal of the requirement for a liner from the TSF Cell B basin; • alter the footprint of the initial TSF Cell B design; • inclusion of monitoring bores WMB002A, WMB002, and WMB001 to condition 15, Table 5; and • other administrative changes.

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.

Conditions

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and 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.

2. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required 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 an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by an engineer that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

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

Table 1: Infrastructure and equipment requirements table

Infrastructure/ Equipment	Design and construction requirements	Infrastructure location

Process plant	• Design capacity of 1.35 Mtpa.
	• Installation of:
	  ○ Three stage crushing with fine ore bin storage.
	  ○ Single stage ball mill with a flash flotation cell and pebble crusher.
	  ○ Flash flotation and rougher flotation concentrate regrind.
	  ○ Cleaner & re-cleaner flotation stages to produce a lead-silver concentrate.
	  ○ Concentrate dewatering thickener and a filter to produce transportable concentrates.
	  ○ Tailings thickening.
	• Plant shall be constructed on a concrete pad and concrete bunded with a containment capacity equivalent to 110% of the capacity of largest tank and drainage to the drainage basin/stormwater pond for recycling back to the process circuit.
		Site Plan 2 (Schedule 1)

Infrastructure/ Equipment	Design and construction requirements	Infrastructure location
	• Electric sump pumps installed in the concrete flooring to collect and pump any spilled material back into the process stream. • Flow transmitter and flow meter installed. • Conveyor belts, mixing tanks, flotation tanks and storage tanks are located on a concrete bunded area with plinths within the Process plant area. • Stormwater diverted around and away from the process plant, landfill/s and workshop infrastructure areas by diversion drains.	
Stormwater pond (event pond)	• Must be constructed with a 2.5 mm HDPE lining system with a permeability of 1 x 10^{-9} m/s or less. • Retention sump sized to have a minimum capacity to contain runoff from the process plant, stockpiles, washdown and workshops areas so that there is zero discharge of contaminated stormwater from the site for a 1 in 100 AEP storm event over 72 hours. • Adequately sized to maintain an operational freeboard of 300 mm.	Site Plan 2 (Schedule 1)
Process water pond	• Process water pond to be constructed with a minimum storage capacity of 400 m^3. • The process water tank must be adequately sized so that there will be no overflow.	Site Plan 5 (Schedule 1)
Workshop / washdown areas	• Located on concrete pads constructed so that they drain to a clean water recovery system. • Oil-water separator system - treated hydrocarbon concentration <20 mg/L. • Truck and tyre washdown points at a concentrate loadout facility with wash water to be returned to the process plant.	Site Plan 2 (Schedule 1)
Fuels storage	• As per *Dangerous Goods Safety Act 2004* requirements.	Site Plan 2 (Schedule 1)
Reagent storage	• Contained within a concrete bund that will incorporate a collection sump to recover spillage and subsequently pumped back to the process. • Stored in accordance with *AS 1940* and *AS 1692.* • Level indicators to detect leaks, based on drops in level.	Site Plan 2 (Schedule 1)

Infrastructure/ Equipment	Design and construction requirements	Infrastructure location
TSF	• Designed to store 8.48 Mt of tailings over a 15-year life. • Two cell, paddock type facility. • Designed to accommodate 1% AEP, 72-hour duration storm event. • Compacted foundation of the TSF Cell A and Cell B basins. • Starter embankments of the TSF Cell A and Cell B lined with HDPE with hydraulic conductivity of $1x10^{-12}$ m/s. • Design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream. • Crest width of 6 m. • Construction of a cut-off trench with a nominal depth of 0.5 m for TSF Cell A. • Construction of a cut-off trench under the upstream toe of the perimeter embankment for TSF Cell B that must be excavated to 'refusal' on the underlying Wiluna Hardpan at a nominal depth of 0.5 m and 4 m in width. • HDPE liner installed on the upstream slope of the embankment and part of the TSF Cell B basin directly under the decant system infrastructure. • Construction of an interception drain north of the TSF. • Vibrating wire piezometers installed within the TSF embankment to monitor phreatic surface.	Site Plans 1, 3, 4, 8, 9, 10, and 11 (Schedule 1)
TSF – tailings deposition	• Multiple spigots located on the upstream perimeter embankment crest.	Site Plan 6 (Schedule 1)
TSF – decant system and pond	• Rock-ring type central decant structure located centrally within the TSF. • Decant pump located within the rock ring decant. • Decant causeway – design slopes of 1:1.5 (V:H) and a nominal 6 m crest width, with 0.5 m (minimum) windrows on both sides of the access way.	Site Plans 3 and 9 (Schedule 1)
Pipelines (tailings delivery and decant return water)	• HDPE pipelines installed within an unlined V trench with sufficient capacity to ensure all solids and liquors are captured within the trench. • Equipped with telemetry systems and pressure sensors to allow detection of leaks and failures.	Site Plan 1 (Schedule 1)
Lead concentrate shed	• Constructed on a concrete pad. • Fully enclosed. • Equipped with negative pressure system.	Site Plan 2 (Schedule 1)

Commissioning

4. The works approval holder shall submit a commissioning plan to the CEO, 2 months prior to commencing commissioning of the process plant. The commissioning plan shall include details relating to:

- the commissioning stages and expected timescales for commissioning each stage;
- expected emissions and discharges during commissioning and the environmental implications of the emissions;
- how emissions and discharges will be managed during commissioning;
- the monitoring that will be undertaken during the commissioning period;
- how accidents or malfunctions will be managed;
- start up and shut down procedures; and
- reporting proposals including accidents, malfunctions and reporting against the commissioning plan.

Commissioning shall be carried out in accordance with the commissioning plan.

5. The works approval holder shall commission the process plant and TSF for a period of no longer than 6 months, following submission of the report required by condition 2.

6. The works approval holder shall submit a surface water management plan to the CEO. The plan shall include details relating to:

- Design capacity of stormwater infrastructure to contain runoff from the processing plant, stockpiles, concentrate storage, and laydown areas so that there is zero discharge of contaminated stormwater from the site for a 1 in 100 annual exceedance probability (AEP) storm event over 72 hours; and
- Surface water drainage map of the site showing contours, flow paths.

7. Within 60 days of the commencement of commissioning, the works approval holder must collect 10 individual tails samples for geochemical analysis, including undertaken leaching tests of this material using the US EPA Method 1313 test procedure (LEAF Test). The works approval holder shall submit a geochemical report to the CEO by the end of the commissioning period.

Emissions and discharges

8. During commissioning and time limited operations, the works approval holder must ensure that the emissions specified in Table 2, are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 2: Authorised discharge points during commissioning and time limited operations

Emission	Discharge Point	Discharge point location
Discharge of tailings	TSF	Schedule 1: Maps Site Plans 1, 3, and 6

9. The works approval holder shall not use water from detention basin / stormwater pond for dust suppression.

Time limited operations

Commencement and duration

10. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1, where the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder for that item of infrastructure.

11. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 12 (as applicable):

(a) for a period not exceeding 180 calendar days; 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 11(a).

12. During time limited operations, the works approval holder must ensure that the infrastructure listed in Table 3 is maintained and operated in accordance with the corresponding operation requirements set out in Table 3.

Table 3: Infrastructure and equipment requirements during time limited operations

	Infrastructure	Operational requirements
1.	Fuel storage	• Maintain as per *Dangerous Goods Safety Act 2004* requirements.
2.	Reagent storage	• Maintain integrity of concrete bund to recover spillage; • Maintain storage requirements in accordance with *AS 1940* and *AS 1692;* and • Maintain and operate level indicators to detect leaks, based on drops in level.
3.	TSF	• Minimum of 500 mm total freeboard comprising minimum operational freeboard (vertical height between the tailings beach and embankment crest) of 300 mm and a minimum beach freeboard of 200 mm plus allowance to store a 1 in 100 AEP storm event over 72 hour; • Tailings discharged sub-aerially and cyclically in thin discrete layers not exceeding 300 mm thickness to allow optimum density and strength gain by subjecting each layer to a drying cycle; • Deposition to occur through multiple spigots; • Spigotting of tailings carried out such that a beach is developed so the supernatant pond is maintained within and around the rock ring decant; • Supernatant pond always maintained away from the perimeter embankments; • Maintain and operate the submersible decant pump as per manufacturer's specifications; • Decant pond water must be reclaimed and reused in the processing plant; and • Average water recovery should not be less than 50% of slurry water inflow or 36 t/hr.
4.	Pipelines (tailings delivery and decant return water)	• Provided with secondary containment adequate to contain any spill for a period equal to the time between routine inspections; and • Maintain pipeline flow sensors and telemetry systems.

Monitoring

Ambient groundwater monitoring

13. The works approval holder during time limited operations must monitor the groundwater for concentrations of the parameter listed in Table 4:

(a) at the corresponding monitoring location;

(b) in the corresponding unit;

(c) at no less than the corresponding frequency;

(d) for the corresponding averaging period; and

(e) using the corresponding method,

as set out in Table 4.

Table 4: Ambient groundwater monitoring

Parameter	Monitoring Location	Limit[1]	Unit	Frequency	Averaging period	Method
Standing Water Level	MB1, MB2, MB3, MB4, MB5, MB6, MB7, MB8, MB9, WMB001, WMB002A, WMB002 as shown in Schedule 1: Maps - Site Plan 7		mbgl	Monthly	Spot sample	-
pH			pH units	Quarterly		AS/NZS 5667.1 AS/NZS 5667.11
Electrical Conductivity			µS/cm			
Total Dissolved Solids			mg/L			
Total Suspended Solids						
Calcium						
Magnesium						
Potassium						
Silicon						
Sodium						
Hardness as $CaCO_3$						
Aluminum						
Antimony		0.03				
Arsenic		0.1				
Barium		20				
Beryllium						
Boron						
Cadmium		0.01				
Chromium						
Cobalt						
Copper		0.2				
Iron						
Lead		0.1				
Manganese						
Mercury						
Molybdenum						
Nickel						
Selenium		0.02				

Parameter	Monitoring Location	Limit[1]	Unit	Frequency	Averaging period	Method
Strontium						
Titanium						
Thallium		0.02				
Uranium						
Vanadium						
Zinc		2				
Bicarbonate Alkalinity as $CaCO_3$						
Carbonate Alkalinity as $CaCO_3$						
Chloride						
Hydroxide OH^- as $CaCO_3$						
Nitrate as NO_3 by calculation						
Nitrate as N						
Sulfate						
Total Alkalinity as $CaCO_3$						

Note 1: Limit values have been based on the ANZECC & ARMCANZ (2000) long-term irrigation default guideline values.

14. The works approval holder must record the results of all monitoring activity required by condition 13.

15. The works approval holder must ensure that all non-continuous sampling and analysis undertaken pursuant to condition 15 is undertaken by a holder of a current accreditation from the National Association of Testing Authority (NATA) for the methods of sampling and analysis relevant to the corresponding relevant parameter.

Compliance reporting

16. 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 30 calendar days before the expiration of the works approval, whichever is the sooner.

17. The works approval holder must ensure the report required by condition 16 includes the following:

(a) a summary of the time limited operations, including timeframes;

(b) all monitoring data in tabulated form including sampling date;

(c) an assessment and interpretation of the monitoring data, including comparison to previous data, ANZG 2018 and ANZECC & ARMCANZ 2000 (for water quality parameters with limits only) guidelines values, and highlighting any parameter exceedances;

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

(e) where the conditions of the 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.

Record-keeping

18. The works approval holder must maintain accurate and auditable books that include 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 conditions of this works approval;

(c) monitoring programmes undertaken in accordance with condition 13; and

(d) complaints received under condition 20 of this works approval.

19. The books specified in condition 18 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.

20. 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 licence holder to investigate or respond to any complaint.

Definitions

In this works approval, the terms in Table 5 have the meanings defined.

Table 5: Definitions

Term	Definition
AEP	means annual exceedance probability
annual period	a 12-month period commencing from 1 July to 30 June of the immediately following year.
ANZECC & ARMCANZ 2000	means the most recent version and relevant parts of the Australia and New Zealand Environment Conservation Council guidelines for fresh and marine water quality Volume 1 – 3 (Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand).
ANZG 2018	means the most recent version and relevant parts of the Australian and New Zealand Governments guidelines for fresh and marine water quality (Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia) Available at www.waterquality.gov.au/anz-guidelines
AS 1940	means the Australian Standard AS 1940 *The storage and handling of flammable and combustible liquids*.
AS 1692	means the Australian Standard AS 1692 *Steel tanks for flammable and combustible liquids*.
AS/NZS 5667.1	means the Australian Standard AS/NS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samplings.*
AS/NZS 5667.11	means the Australian Standard AS/NS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters.*
books	has the same meaning given to that term under the EP Act.
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 info@dwer.wa.gov.au
condition	means a condition to which this works approval is subject under s.62 of the EP Act.
commission	means the process of operation and testing that verifies the works and all relevant systems, plant, machinery and equipment have been installed and are performing in accordance with Table 1.
department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the

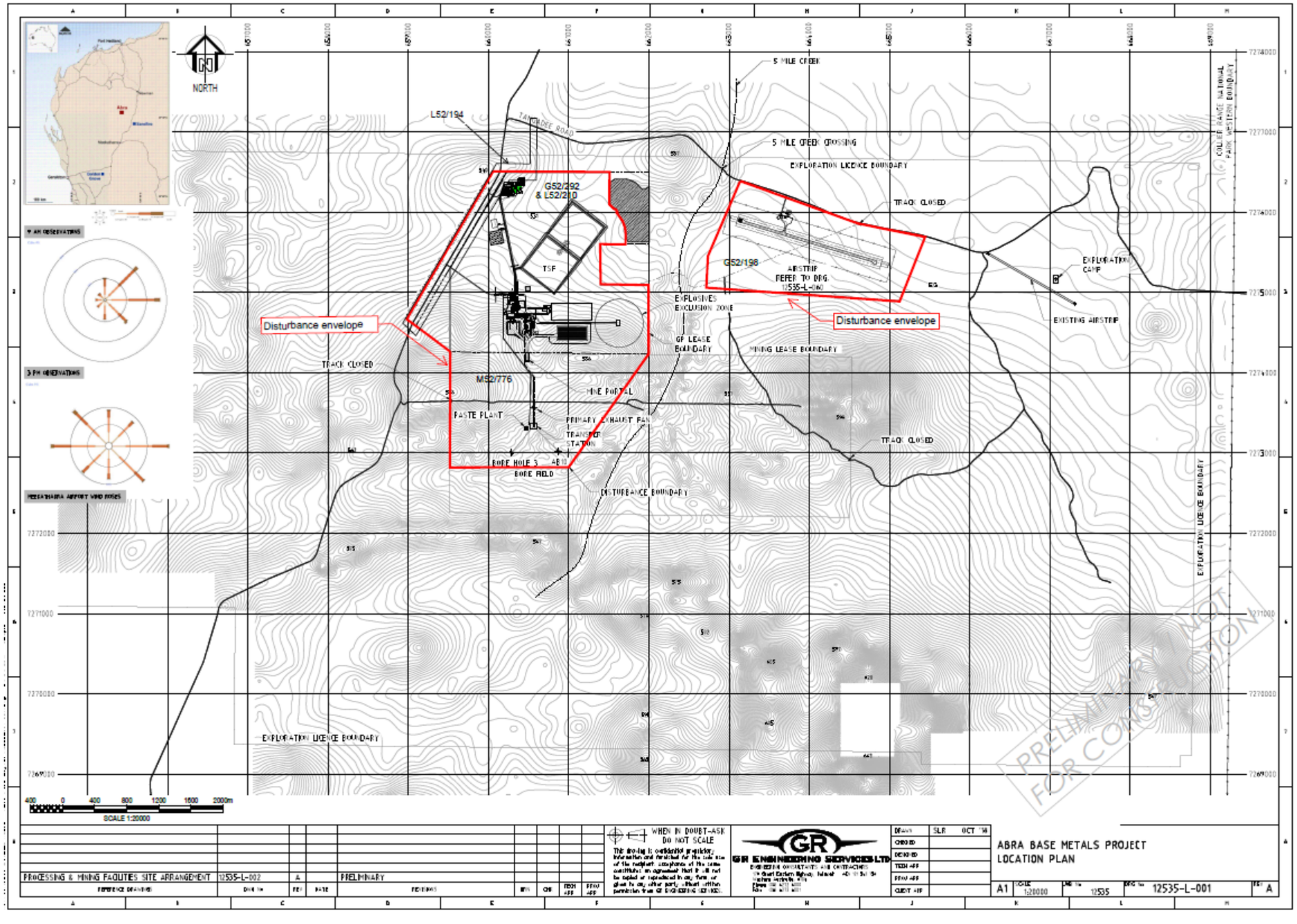
Term	Definition
	administration of Part V, Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
DWER	Department of Water and Environmental Regulation
emission	has the same meaning given to that term under the EP Act.
EP Act	means the *Environmental Protection Act 1986* (WA).
EP Regulations	means the *Environmental Protection Regulations 1987* (WA).
inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
HDPE	high density polyethylene
m	metre as metric measurement
mbgl	metres below ground level
Mt	megatonne, metric unit equivalent to 1 million (10^6) tonnes
Mtpa	means million tonnes per annum.
premises	refers to the premises to which this works approval applies, as specified at the front of this works approval and as shown on the map in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
TSF	tailings storage facility
US EPA Method 1313	US Environmental Protection Agency (2017) Method 1313: Liquid-Solid Partitioning as a Function of Extract pH using a Parallel Batch Extraction Procedure https://www.epa.gov/sites/production/files/2017-11/documents/leaf_how_to_guide.pdf
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under s.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

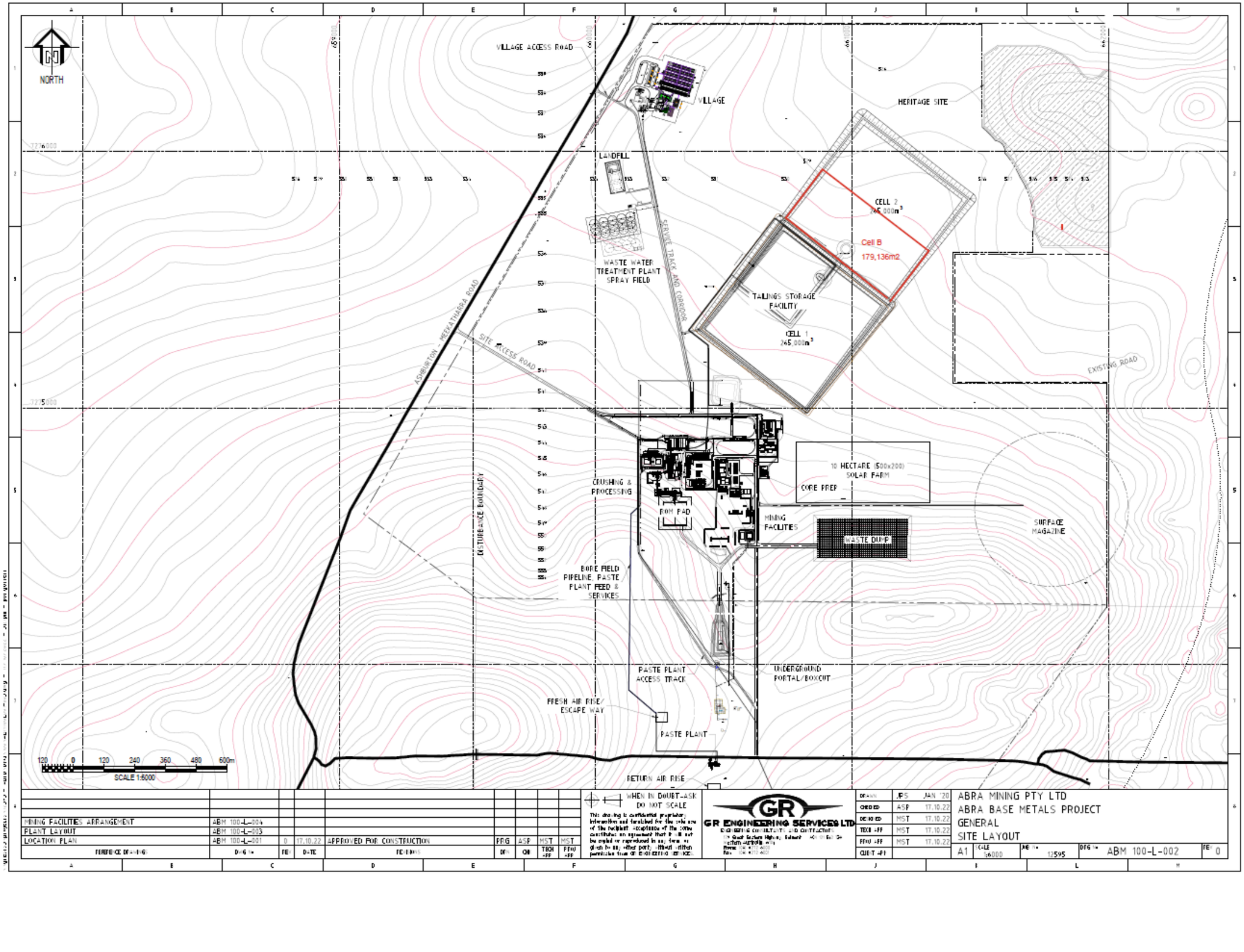
Schedule 1: Maps

Premises map

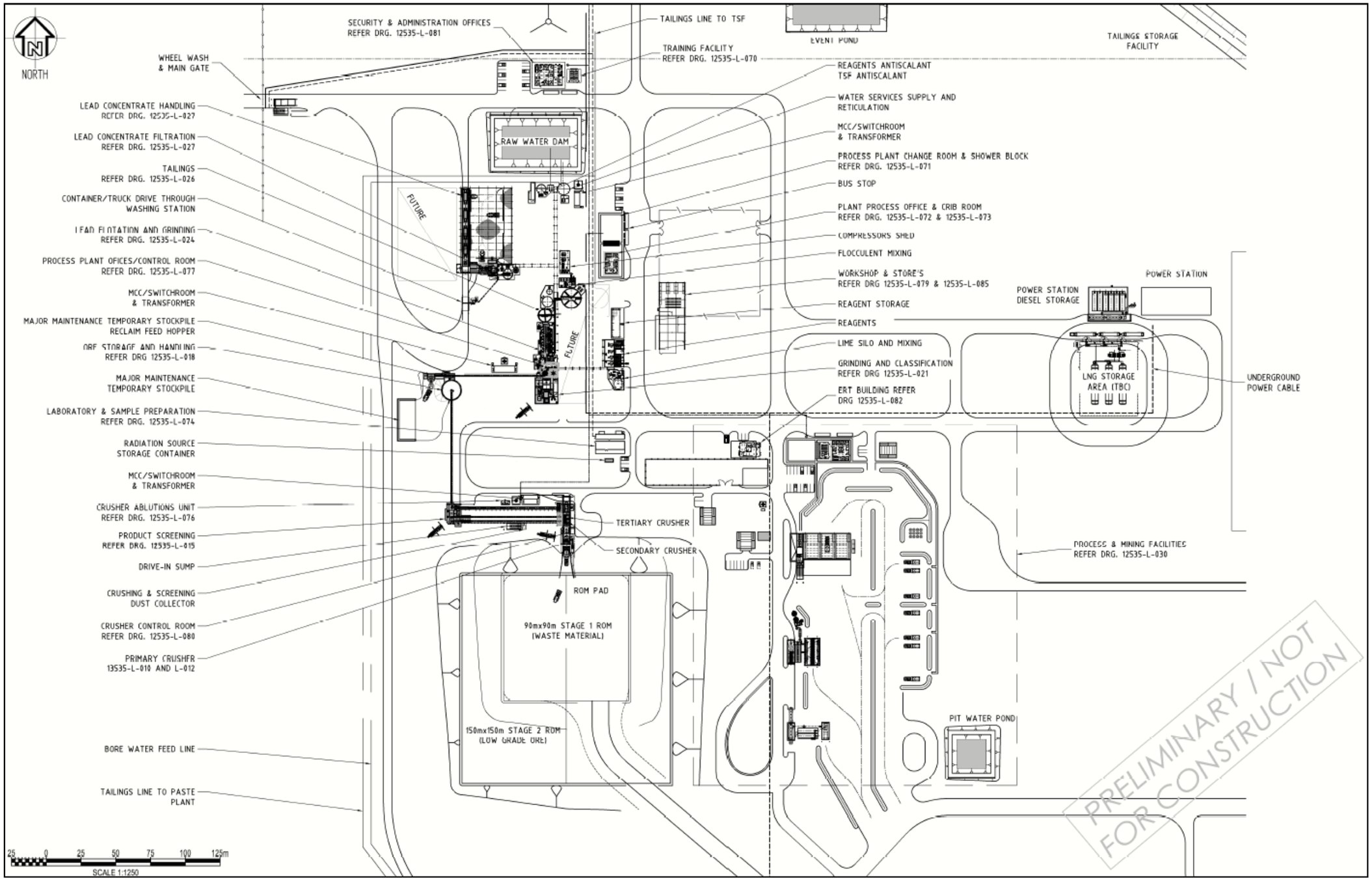
The premises are shown in the map below. The red line depicts the premises boundary.



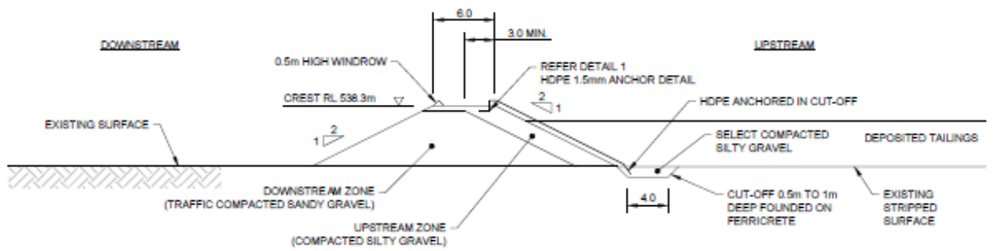
Site plan 1 – Process plant and TSF areas



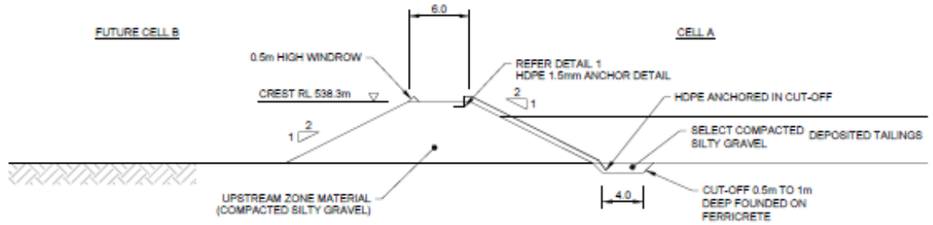
Site plan 2 – Detailed process plant area



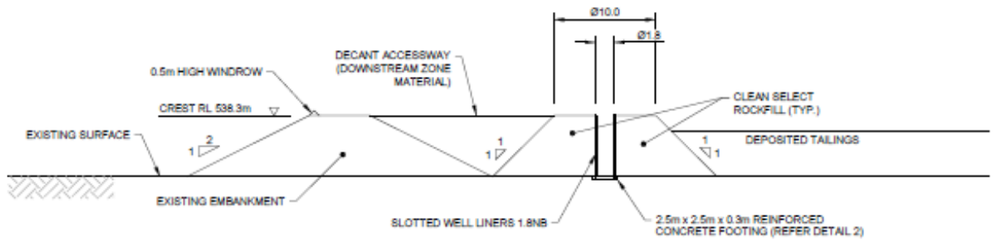
Site plan 3 – TSF Cell A section detail



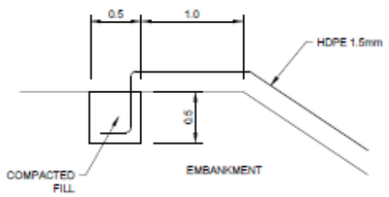
A 06 TYPICAL SECTION - EMBANKMENT
1:500



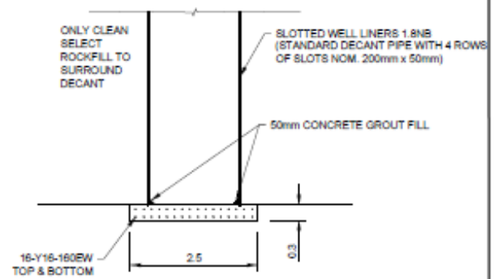
C 06 TYPICAL SECTION - DIVIDING WALL
1:500



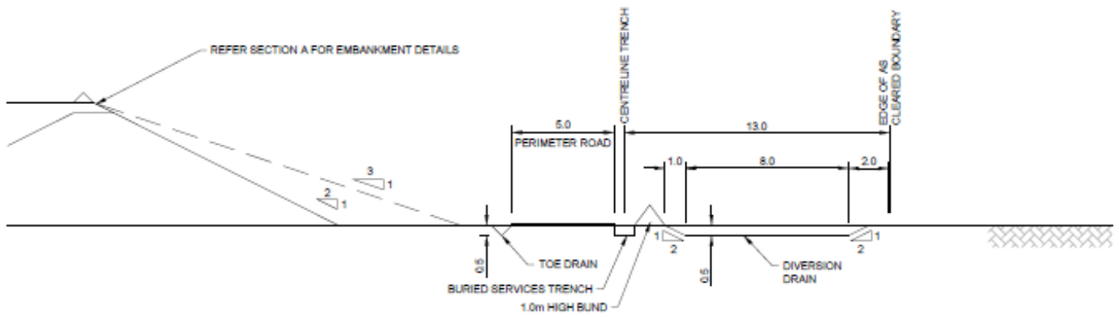
B 06 TYPICAL SECTION - DECANT STRUCTURE
1:500



1 - HDPE ANCHOR DETAIL
1:50



2 - DETAIL - DECANT STRUCTURE
1:100



D 06 TYPICAL SECTION - DRAINAGE DIVERSION
1:250

NOTES:

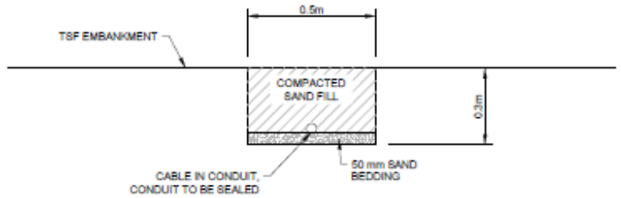
1. ALL CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - CONCRETE CLASS N50
   - MAXIMUM SLUMP 80mm
   - MAXIMUM NOMINAL AGGREGATE SIZE 20mm
2. MINIMUM CONCRETE COVER OVER STEEL 75mm
3. ALL DIMENSIONS IN METRES UNO

1:500 0 5 10 15 20 25 m

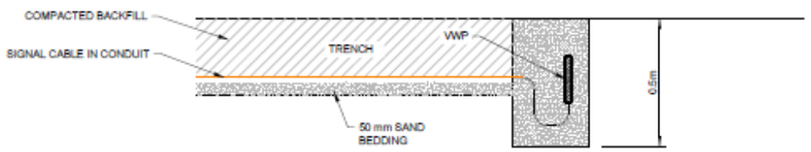
CMW Geosciences

CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2022-0252
PROJECT: CONSTRUCTION OF TSF CELL A ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 02
		REVISION: A	SCALE: AS SHOWN
TITLE: TYPICAL SECTIONS		DATE: 14.12.22	SHEET: A3 L

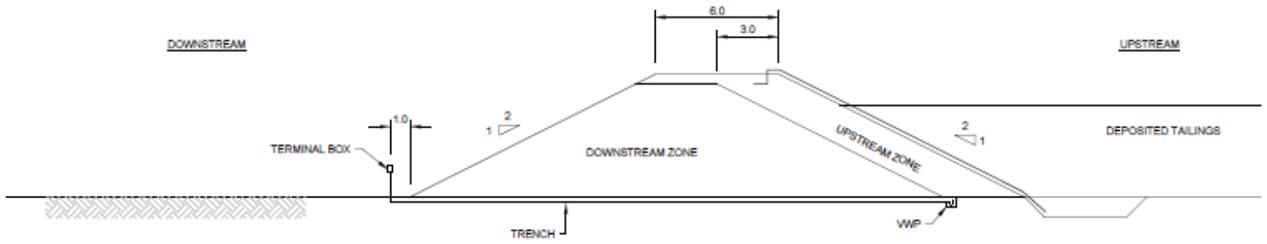
Site plan 4 – TSF Cell A instrumentation details



VWP TRENCH - TYPICAL DETAIL
1:20



VIBRATING WIRE PIEZOMETER - TYPICAL DETAIL
1:20



TYPICAL SECTION - MINI CELL EMBANKMENT
1:250

NOTES:

1. THE INSTRUMENTATION SHOULD BE INSTALLED AT THE FOUNDATION STAGE. THE PIEZOMETERS SHOULD BE HEAVY DUTY VIBRATING WIRE PIEZOMETERS AS SUPPLIED BY DGSI SLOPE INDICATOR.
   - 3.5 BAR (50 PSI) PIEZOMETERS (MODEL NO. 52610520)
   - SIGNAL CABLES (MODEL NO. 50613824)
2. ALL DIMENSIONS IN METRES UNO

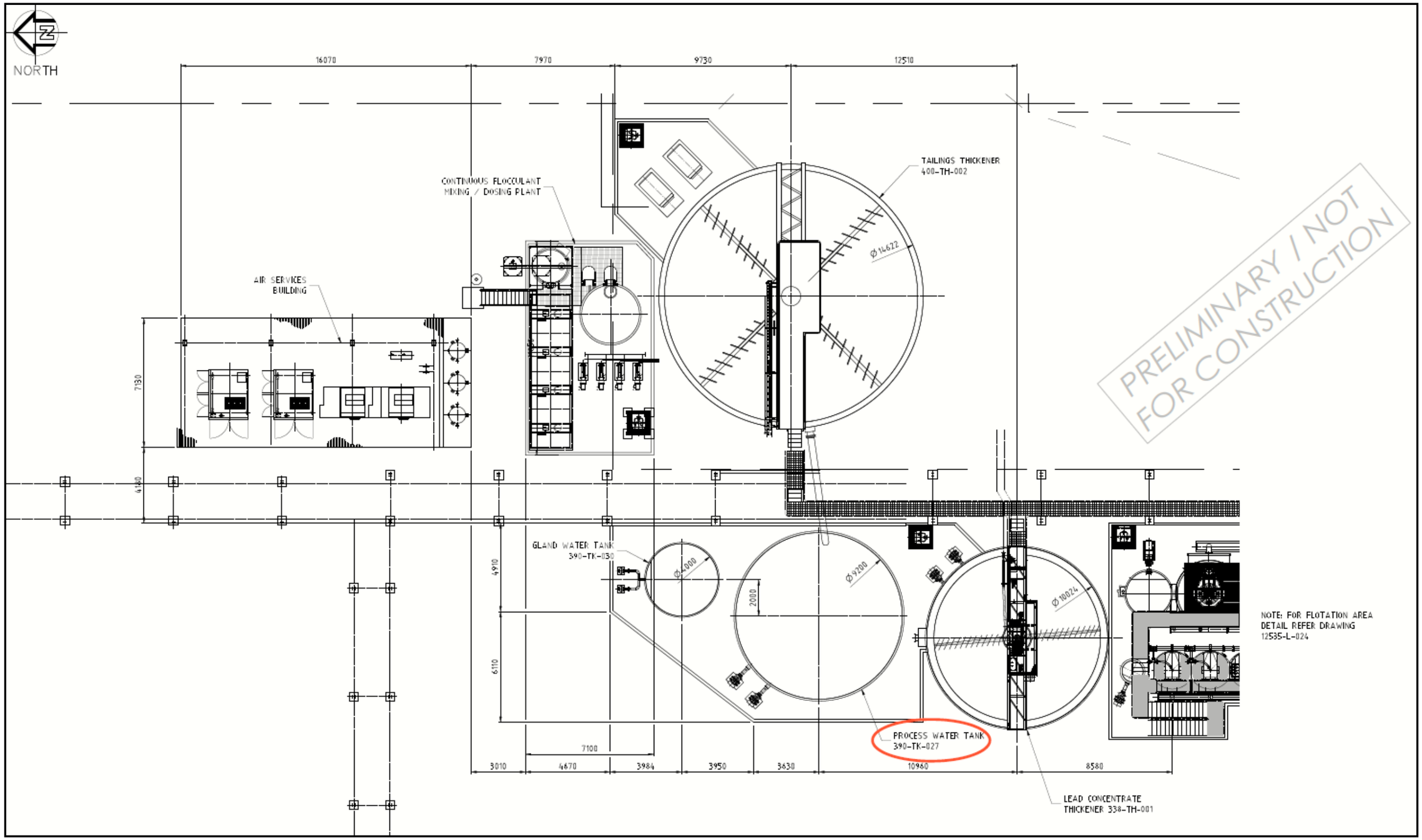
1:20 0 0.2 0.4 0.6 0.8 1.0 m

1:250 0 2.5 5 7.5 10 12.5 m

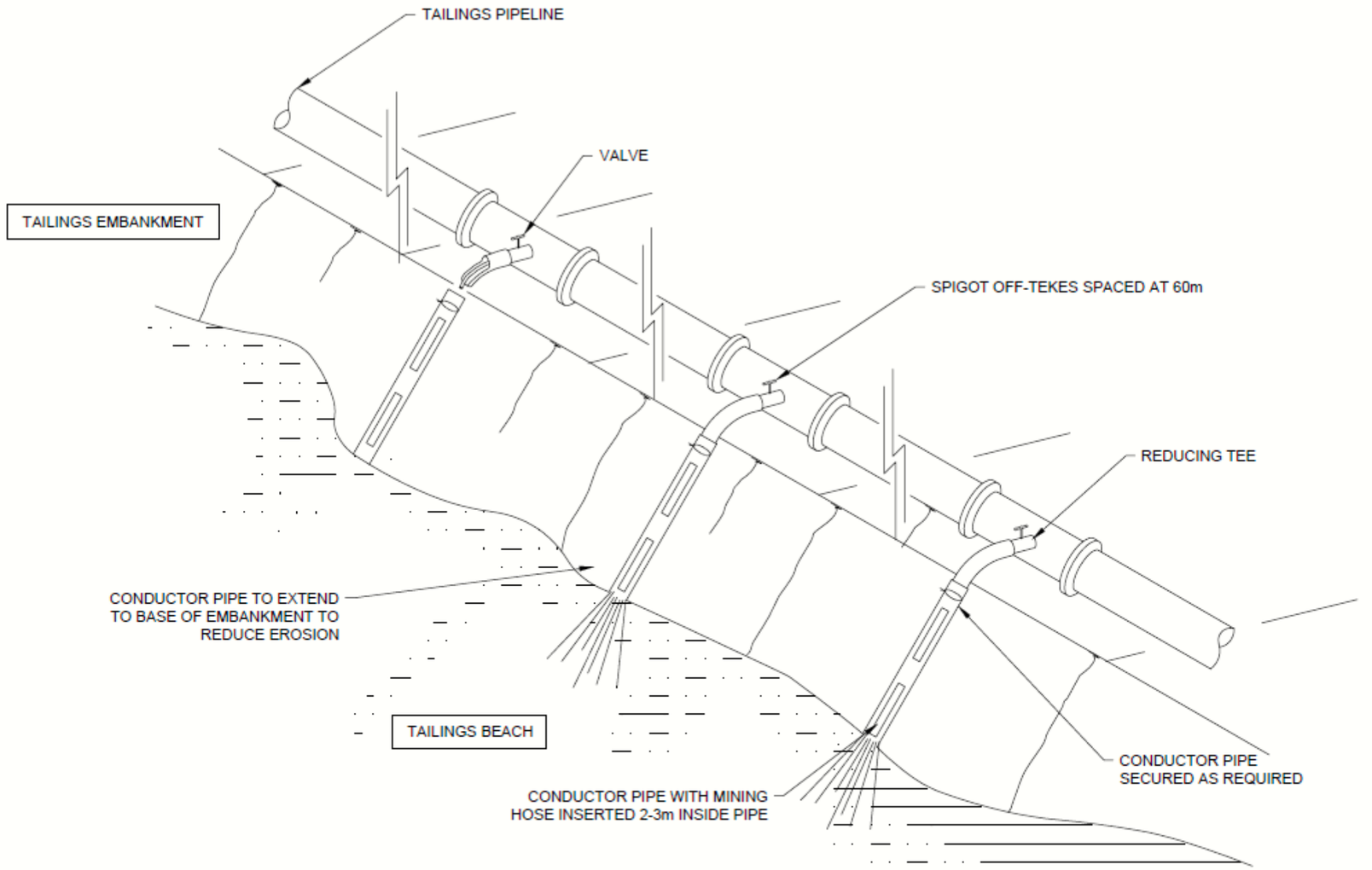
CMW Geosciences

CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2022-0252
PROJECT: CONSTRUCTION OF TSF CELL A ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 03
		REVISION: A	SCALE: AS SHOWN
TITLE: INSTRUMENTATION DETAILS		DATE: 14.12.22	SHEET: A3 L

Site plan 5 – Tailings thickener and process water tank locations



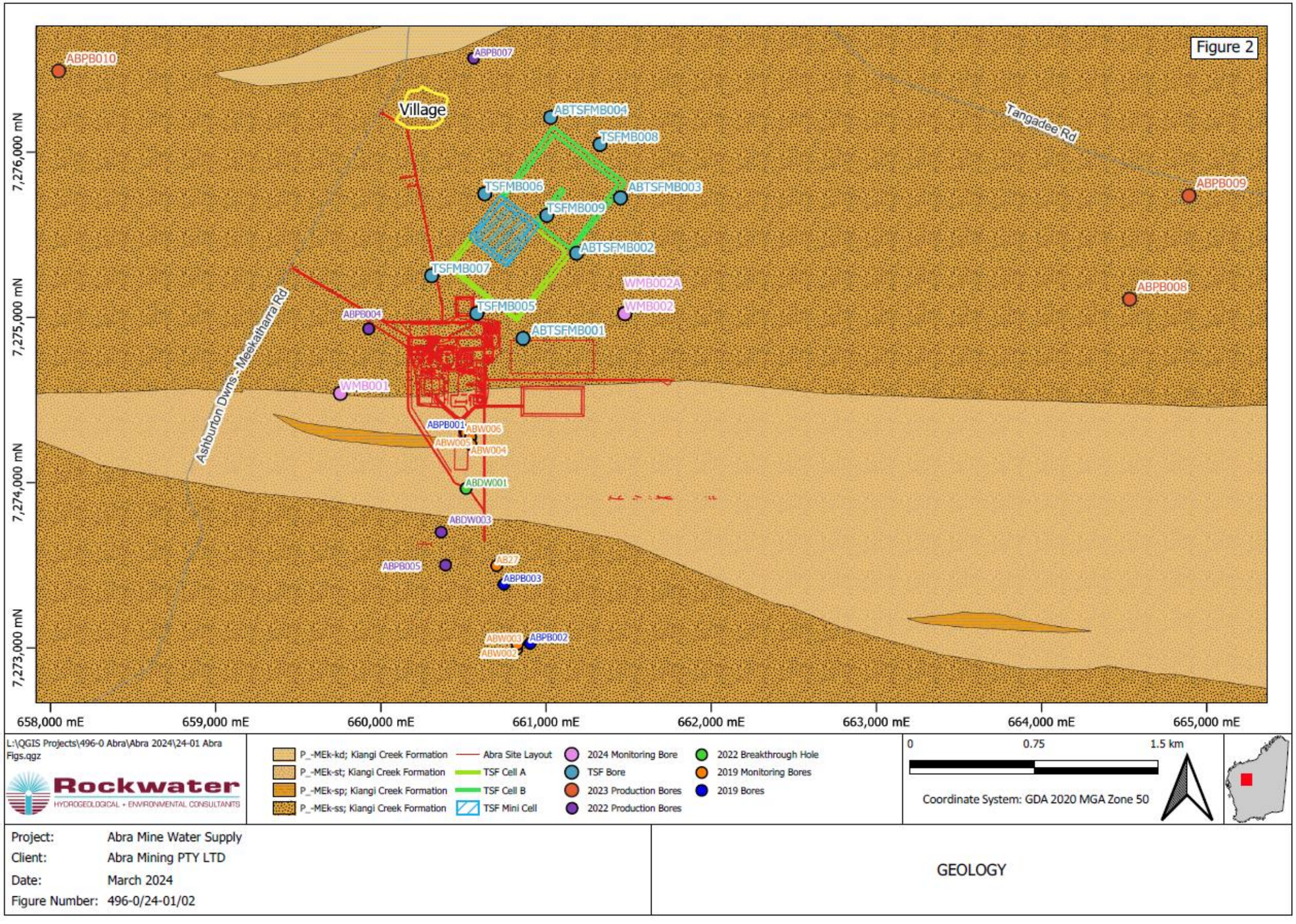
Site plan 6 – TSF spigot arrangement



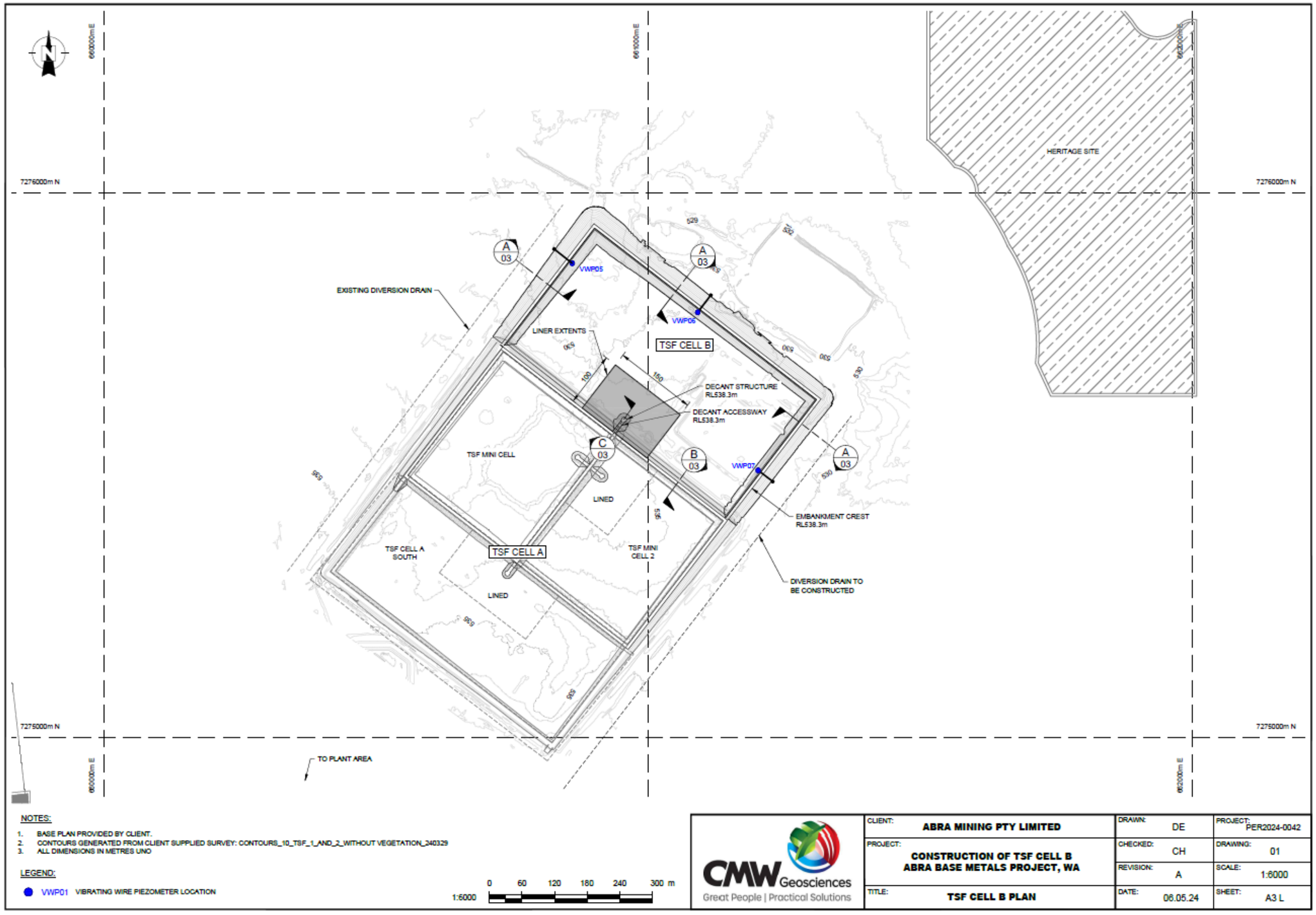
PROPOSED SPIGOT ARRANGEMENT
ISOMETRIC VIEW (NTS)

CMW Geosciences	CLIENT: GALENA MINING LIMITED	DRAWN: DE	PROJECT: PER2018-0128
	PROJECT: ABRA BASE METALS PROJECT TAILINGS STORAGE FACILITY	CHECKED: CH	FIGURE: 02
		REVISION: 0	SCALE: NTS
	TITLE: SPIGOT ARRANGEMENT	DATE: 18.10.18	SHEET: A4 L

Site plan 7 – Groundwater monitoring bore locations



Site plan 8 – TSF Cell B site plan



NOTES:

1. BASE PLAN PROVIDED BY CLIENT.
2. CONTOURS GENERATED FROM CLIENT SUPPLIED SURVEY: CONTOURS_10_TSF_1_AND_2_WITHOUT VEGETATION_240329
3. ALL DIMENSIONS IN METRES UNO

LEGEND:

VWP01 VIBRATING WIRE PIEZOMETER LOCATION

1:6000 0 60 120 180 240 300 m

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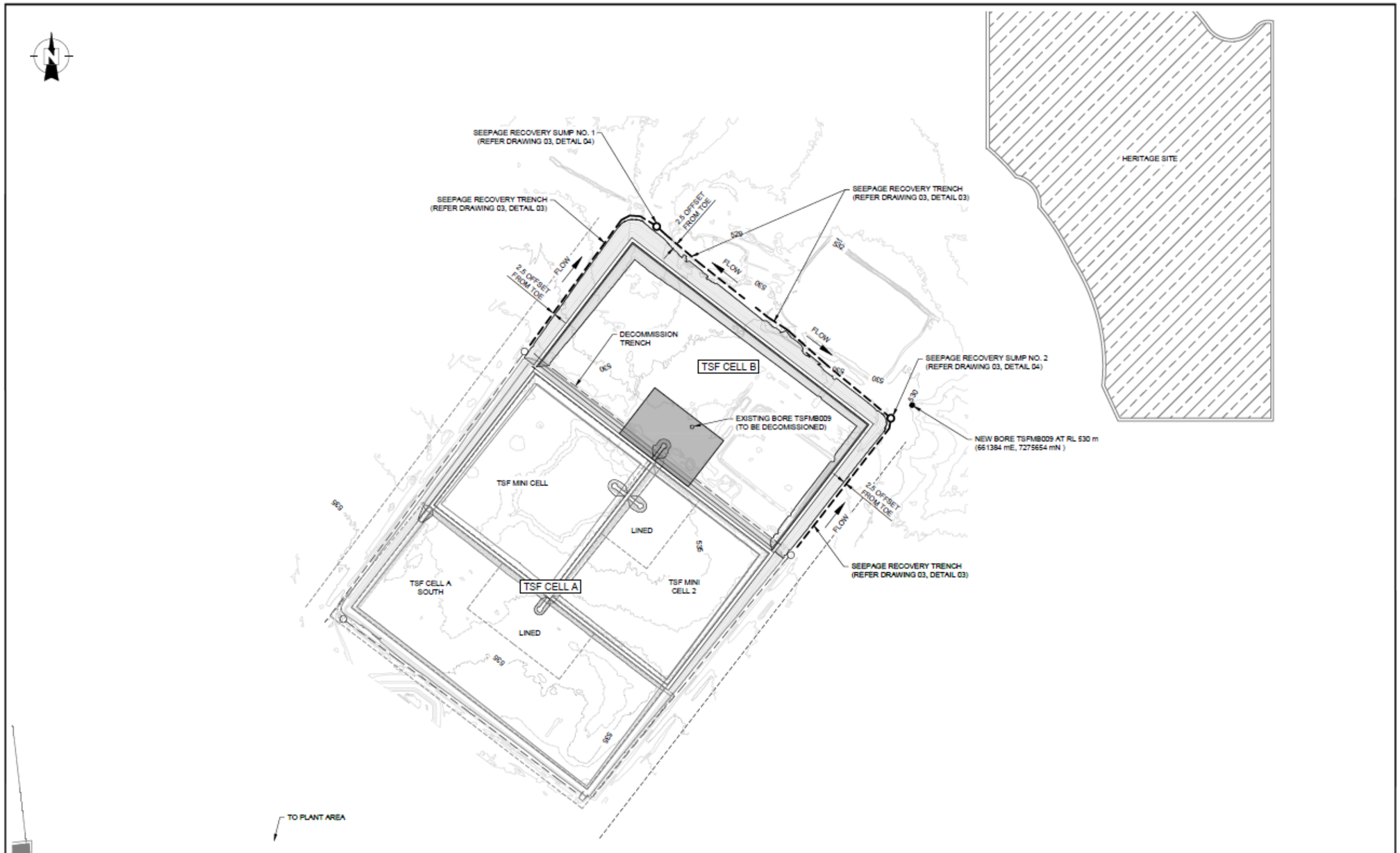
CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2024-0042
PROJECT: CONSTRUCTION OF TSF CELL B ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 01
		REVISION: A	SCALE: 1:6000
TITLE: TSF CELL B PLAN		DATE: 06.05.24	SHEET: A3 L

Site plan 9 – TSF Cell B seepage recovery plan



NOTES:

1. BASE PLAN PROVIDED BY CLIENT.
2. CONTOURS GENERATED FROM CLIENT SUPPLIED SURVEY: CONTOURS_10_TSF_1_AND_2_WITHOUT VEGETATION_240329
3. ALL DIMENSIONS IN METRES UNO

1:6000 0 60 120 180 240 300 m

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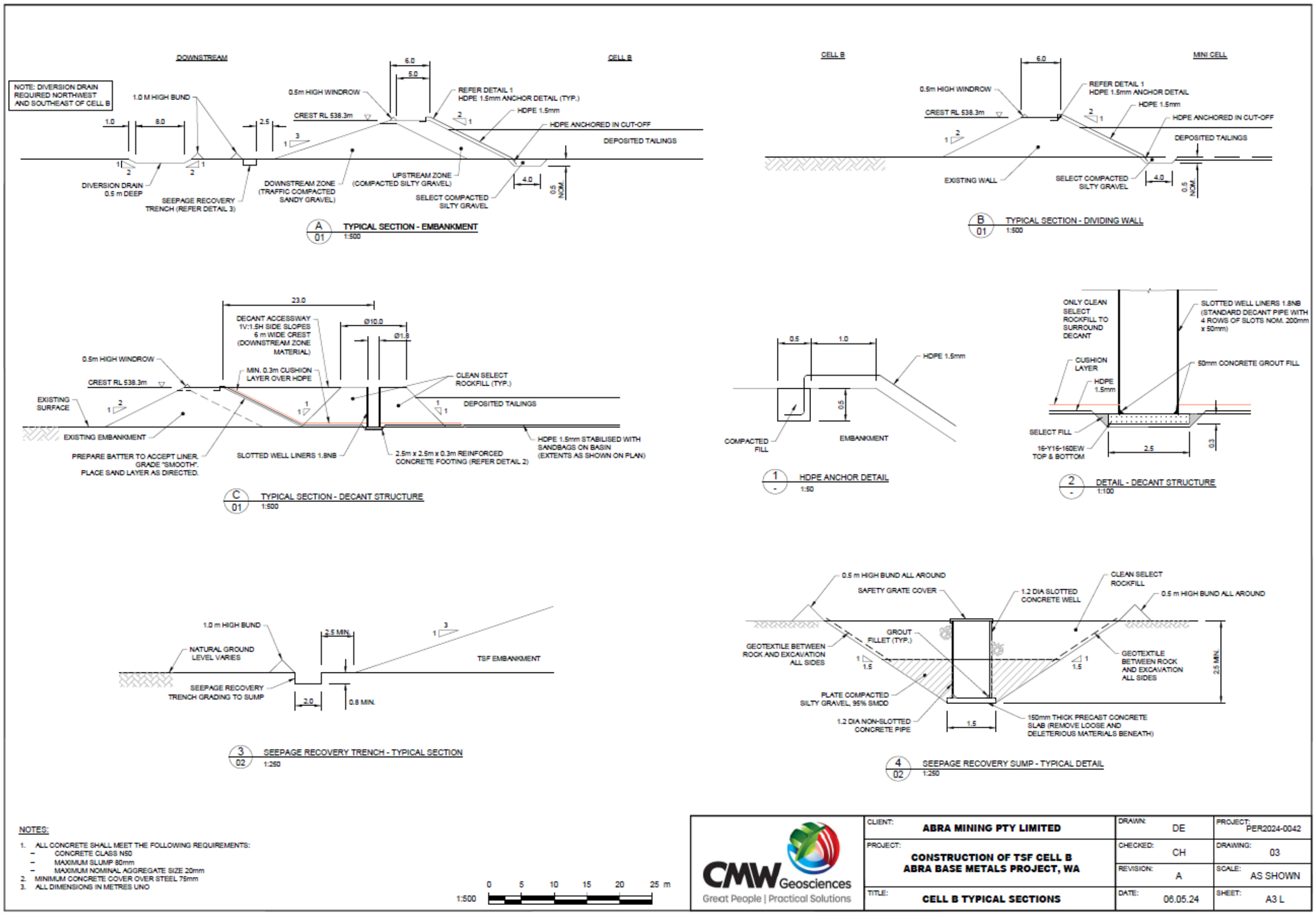
CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2024-0042
PROJECT: CONSTRUCTION OF TSF CELL B ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 02
		REVISION: A	SCALE: 1:6000
TITLE: TSF SEEPAGE RECOVERY PLAN		DATE: 06.05.24	SHEET: A3 L

Site plan 10 – TSF Cell B section details



NOTES:

1. ALL CONCRETE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - CONCRETE CLASS N50
   - MAXIMUM SLUMP 80mm
   - MAXIMUM NOMINAL AGGREGATE SIZE 20mm
2. MINIMUM CONCRETE COVER OVER STEEL 75mm
3. ALL DIMENSIONS IN METRES UNO

1:500 0 5 10 15 20 25 m

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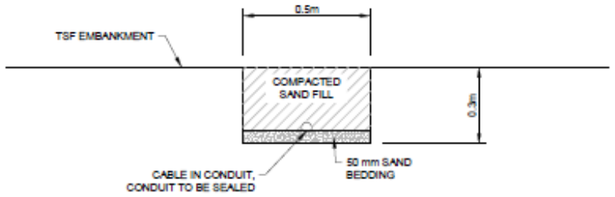
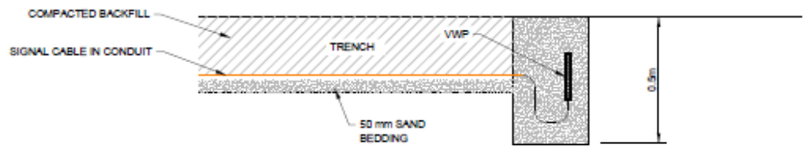
CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2024-0042
PROJECT: CONSTRUCTION OF TSF CELL B ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 03
		REVISION: A	SCALE: AS SHOWN
TITLE: CELL B TYPICAL SECTIONS		DATE: 06.05.24	SHEET: A3 L

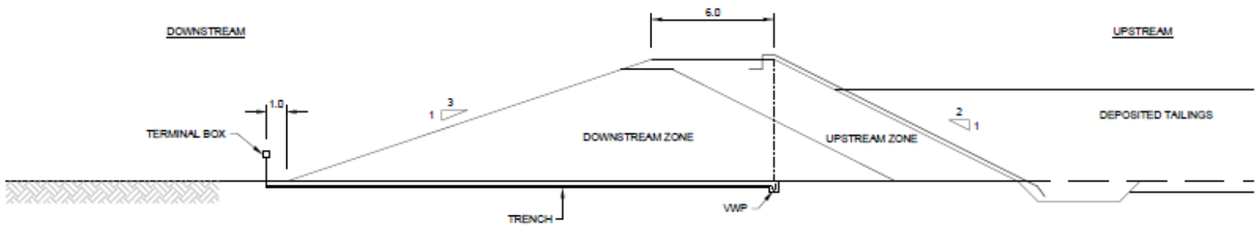
Site 11 – TSF Cell B typical sections



VWP TRENCH - TYPICAL DETAIL
1:20



VIBRATING WIRE PIEZOMETER - TYPICAL DETAIL
1:20



TYPICAL SECTION - CELL B EMBANKMENT
1:250

NOTES:

1. THE INSTRUMENTATION SHOULD BE INSTALLED AT THE FOUNDATION STAGE. THE PIEZOMETERS SHOULD BE HEAVY DUTY VIBRATING WIRE PIEZOMETERS AS SUPPLIED BY DGSI SLOPE INDICATOR.
   - 3.5 BAR (50 PSI) PIEZOMETERS (MODEL NO. 52610520)
   - SIGNAL CABLES (MODEL NO. 50613824)
2. ALL DIMENSIONS IN METRES UNO

1:20 — 0 0.2 0.4 0.6 0.8 1.0 m

1:250 — 0 2.5 5 7.5 10 12.5 m

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CLIENT: ABRA MINING PTY LIMITED		DRAWN: DE	PROJECT: PER2024-0042
PROJECT: CONSTRUCTION OF TSF CELL B ABRA BASE METALS PROJECT, WA		CHECKED: CH	DRAWING: 04
		REVISION: A	SCALE: AS SHOWN
TITLE: INSTRUMENTATION DETAILS		DATE: 06.05.24	SHEET: A3 L

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 6.

Table 6: Premises boundary coordinates

Easting	Northing
661707	7275605
661395	7275605
661395	7275095
661992	7275095
661992	7274222
659521	7274263
660223	7276795
661508	7276495
661508	7276095
661535	7276069
661560	7276042
661568	7276040
661580	7276034
661588	7276026
661594	7276016
661596	7276005
661596	7275994
661620	7275962
661639	7275932
661656	7275899
661673	7275869
661688	7275836
661700	7275795
661706	7275759
661708	7275723
661707	7275682