Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6880/2024/1
Works approval holder	Big Bell Gold Operations Pty Ltd
ACN	090 642 809
Registered business address	Level 6, 200 St Georges Terrace PERTH WA 6000
DWER file number	DER2023/000797
Duration	10/05/2024 to 09/05/2030
Date of issue	10/05/2024
Premises details	Cue Gold Operations – Tuckabianna Project Legal description - Mining tenements M20/55, M20/108, M20/111, M20/176, M20/183, M20/195, M20/208, and M20/247. As defined by the premises maps in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,400,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 10 May 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2024.05.10 11:37:42 +08'00'

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
10/05/2024	W6880/2024/1	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 the infrastructure and / or equipment;

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

(c) at the corresponding location;

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure and equipment	Design and construction requirements	Infrastructure location
1.	TWTSF – Stage 1 and Stage 2	• layout and constructed as detailed in Schedule 1 maps: Figures 2, 3, 4, and 6; • storage design capacity of 5.8 Mm^3; • provide a total freeboard of a minimum of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m); • designed to contain a 1:100 AEP 72-hour rain event, while maintaining a total freeboard of a minimum of 0.5 m; • install and construct multiple spigots along the southern and northern side of TWTSF; • install a decant pump and associated infrastructure located at the pit central ramp from the northern wall of the TWTSF for the recovery of surface water prior to tailings deposition and to pump return water to the return water pond (if constructed) and Processing Plant; • decant pump must be stationed on a floating pontoon or similar; and • decant pumping capacity must not be less than 180 tph.	Schedule 1 maps: Figure 1
2.	Tailings discharge pipeline and return water pipelines	• constructed according to the Australian Standards AS/NZS 2033, 4129, 4130, and 4131 for polyethylene pipes; • equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or • equipped with automatic cut-outs in the event of a pipeline failure; or • provided with secondary containment sufficient to	Schedule 1 maps: Figure 4

	Infrastructure and equipment	Design and construction requirements	Infrastructure location
		contain any spill for a period equal to the time between routine inspections.	
3.	Return water pond (if required)	• layout and constructed as detailed in Schedule 1 maps: Figure 6; • storage design capacity of 5,000 m^3; • HDPE lined (≥ 1mm thickness); and • constructed to the dimensions of 40 m x 40 m x 4.5 m in depth.	Schedule 1 maps: Figure 4 and 5
4.	Turkey's nests	• layout and constructed as detailed in Schedule 1 maps: Figure 6; • storage design capacity of 175 m^3 ; • constructed to the dimensions of 11 m x 11 m x 1 m in depth; • construct and install earthen windrows around the perimeter; and • located at nominal 500 m intervals along the return water pipeline.	Schedule 1 maps: Figure 4 and 5

2. The works approval holder must:

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

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

(c) at the corresponding infrastructure location.

as set out in Table 2.

Table 2: Critical containment infrastructure design and construction requirements

	Infrastructure and equipment	Design and construction requirements	Infrastructure location
1.	TSF3 – Starter embankment / Stage 1	• layout and constructed as detailed in Schedule 1 maps: Figures 7, 8, 9 and 11; • storage design capacity of 1.9 Mm^3; • construction authorised to embankment height of 472.5 mRL; • foundation base to be roller compacted and moisture-conditioned composed of alluvial clayey gravelly sand with a permeability of no more than 5 x 10^{-8} m/s; • embankment constructed from waste rock or dried tailings; • embankment constructed with design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a minimum crest width of 6.0 m;	Schedule 1 maps: Figure 1

	Infrastructure and equipment	Design and construction requirements	Infrastructure location
		• construct within the upstream zone a cut-off trench of 0.5 m nominal depth within the overlying alluvium layer; • construction of an underdrainage system comprising of perforated pipe underdrainage lines grading to a sump at a minimum distance of 5.0 m from the upstream toe of embankment; • constructed to provide a total freeboard of a minimum of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m); • designed to contain a 1:100 AEP 72-hour rain event, while maintaining a total freeboard of a minimum of 0.5 m; • tailings to be discharged from the embankment via spigots with erosion protection placed beneath each spigot location; • spigots must be positioned nominally at 20 m intervals along the embankment; • maintain a decant tower at the centre of the TSF3 that is constructed from slotted reinforced concrete pipe segments surrounded by a waste rock filter; • decant accessway constructed with design slopes of 1(V):1.5(H) and a nominal crest width of 6.0 m; • decant tower to be fitted with pump/s for the recovery of return water prior to pumping back to the process water dam/pond at the Processing Plant; • decant pumping capacity must not be less than 180 tph; and • construction of a bund on the western edge of TSF3 to protect the walls of TSF3 against a PMF.	
2.	TSF3 – Stages 2, 3, and 4	• layout and constructed as detailed in Schedule 1 maps: Figures 7, 8, 9 and 12; • storage design capacity of 4.9 Mm^3; • construction authorised to embankment height of 475 mRL for Stage 2; • construction authorised to embankment height of 477.5 mRL for Stage 3; • construction authorised to embankment height of 480 mRL for Stage 4; • embankment constructed from waste rock or dried tailings; • embankment constructed with design slopes of 1(V):2(H) upstream and 1(V):3(H) downstream, with a minimum crest width of 6.0 m; • construct within the upstream zone a cut-off trench of 0.5 m nominal depth within the overlying alluvium layer;	Schedule 1 maps: Figure 1

	Infrastructure and equipment	Design and construction requirements	Infrastructure location
		• constructed to provide a total freeboard of a minimum of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m); • designed to contain a 1:100 AEP 72-hour rain event, while maintaining a total freeboard of a minimum of 0.5 m; • tailings to be discharged from the embankment via spigots with erosion protection placed beneath each spigot location; • spigots must be positioned nominally at 20 m intervals along the embankment; • maintain a decant tower at the centre of the TSF3 that is constructed from slotted reinforced concrete pipe segments surrounded by a waste rock filter; • decant accessway constructed with design slopes of 1(V):1.5(H) and a nominal crest width of 6.0 m; • decant tower to be fitted with pump/s for the recovery of return water prior to pumping back to the process water dam/pond at the Processing Plant; • decant pumping capacity must not be less than 180 tph; and • construction of a bund on the western edge of TSF3 to protect the walls of TSF3 against a PMF.	
3.	Vibrating wire piezometers (VWPs)	• installed on each perimeter embankment of the TSF3; and • constructed in accordance with VMP design specifications.	Schedule 1 maps: Figure 11
4.	Tailings discharge pipeline and return water pipelines	• constructed according to the Australian Standards AS/NZS 2033, 4129, 4130, and 4131 for polyethylene pipes; • equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or • equipped with automatic cut-outs in the event of a pipeline failure; or • provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.	Schedule 1 maps: Figure 5 and 11

3. The works approval holder is authorised to construct embankment raises for TSF3 to the embankment height specified in Table 3.

Table 3: Staged embankment heights for TSF3

Stages	TSF	Embankment height (mRL)
Starter embankment / 1	Zoned embankment with an upstream and downstream zone	472.5
2	Zoned embankment with an upstream and downstream zone raised at 2.5 m	475.0
3		477.5
4		480.0

4. The works approval holder must design, construct, and install groundwater monitoring bores in accordance with the requirements specified in Table 4.

Table 4: Infrastructure requirements – groundwater monitoring bores

Infrastructure	Design, construction, and installation requirements	Monitoring bore location(s)	Timeframe
TWTSF monitoring bores: TWMB01, TWMB02, TWMB03, TWMB04, TWMB05, and TDW5. TSF3 monitoring bores: TBS7, TBS8, TBS9, TBS10, TBS11, and TBS12.	Bore design and construction: Designed and constructed in accordance with *Minimum construction requirements for water bores in Australia 4th Ed. (National Uniform Drillers Licensing Committee (NUDLC), 2020).* Bore screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary / seasonal perched features are present, bores must be nested, and the perched features individually screened.	Schedule 1 maps: Figures 13 and 14	Must be constructed, developed (purged), and determined to be operational by no later than 30 calendar days prior to tailings deposition in TSF3 and TWTSF.
	Logging of borehole: 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 Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	Bore construction log: Bore construction details must be documented within a bore construction log to demonstrate compliance with NUDLC 2020. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-		

Infrastructure	Design, construction, and installation requirements	Monitoring bore location(s)	Timeframe
	level measurements, and the elevations of the ground surface protective installations.		
	Bore development: 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.		
	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.		

Note 1: Refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on bore screen depth and length.

Compliance reporting

5. The works approval holder must within 60 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.

6. The Environmental Compliance Report required by condition 5, must include as a minimum the following:

(a) certification by a suitably qualified person that the items of infrastructure or components 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.

Critical Containment Infrastructure reporting

7. The works approval holder must within 60 calendar days of an item of critical containment infrastructure or equipment required by condition 2 being constructed:

(a) undertake an audit of their compliance with the requirements of condition 2; 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 Engineer / geotechnical specialist that each item of critical containment infrastructure or component thereof, as specified in condition 2, have been constructed in accordance with the relevant requirements specified in condition 2;

(b) 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 2;

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

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

9. Subject to conditions 1 and 2, where an item of infrastructure or component of infrastructure has been certified as not being constructed, or does not comply with the corresponding requirements, or contains material defects, the works approval holder must:

(a) correct the non-compliant or defective works, prior to rec-certifying in accordance with conditions 1(a) and 2 (a); or

(b) provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 1 and/or Table 2 that do not require recertification and do not constitute a material defect along with the report required by conditions 1 and 2.

Compliance reporting – bore construction and ambient groundwater monitoring

10. The works approval holder must, within 60 calendar days of the monitoring bores being constructed, submit to the CEO a bore construction report evidencing compliance with the requirements of conditions 4 and 11.

11. The works approval holder must within 30 days of the monitoring bores in Table 4 being constructed, conduct baseline sampling in accordance with Section 7.2.3 of *Assessment of Site Contamination NEPM* for parameters outlined in Table 8.

Environmental commissioning phase

Environmental commissioning requirements

12. The works approval holder may only commence environmental commissioning of an item of infrastructure and / or equipment listed in Table 5 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 5 of this works approval.

13. The works approval holder may only commence environmental commissioning of an item of infrastructure and / or equipment identified in condition 2:

(a) once the Critical Containment Infrastructure Report has been submitted for that item of infrastructure in accordance with condition 8 of this works approval; and

(b) the CEO has notified the works approval holder that the Critical Containment Infrastructure Report required by condition 8 meets the requirements of the works approval.

14. Any environmental commissioning activities undertaken for an item of infrastructure and / or equipment specified in Table 5 may only be carried out:

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

(b) for the corresponding authorised commissioning duration.

Table 5: Environmental commissioning requirements

	Infrastructure and equipment	Commissioning requirements	Authorised commissioning duration
1.	Tailings discharge pipeline and return water pipelines for TWTSF and TSF3	• visual inspection of pipelines to check for leaks or other issues; • hydro-testing of pipelines; • all flow meters and pressure transmitters to be calibrated in accordance with manufacturer's specifications (if installed); and • monitor and adjust tailings discharge spigots (as required) into TWTSF and TSF3 to commence tailings beach formation and ensure water flows toward the central decant.	For a period not exceeding 90 calendar days in aggregate.

15. During environmental commissioning and time limited operations, the works approval holder must ensure that the emission(s) specified in Table 6, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 6: Authorised discharge points during environmental commissioning and time limited operations

Emission	Discharge point	Discharge point location
Tailings from the Processing Plant	TSF3 via multiple spigots located along the perimeter	Schedule 1 maps: Figures 11 and 12
	TWTSF via multiple spigots located along the perimeter	Schedule 1 maps: Figures 2 and 3

Monitoring during environmental commissioning

16. The works approval holder must monitor the ambient groundwater during environmental commissioning for concentrations of the identified parameters in accordance with Table 8.

Environmental commissioning reporting

17. 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 5.

18. The works approval holder must ensure the Environmental Commissioning Report

required by condition 17 of this works approval includes the following:

(a) a summary of the environmental commissioning activities undertaken, including timeframes and amount of tailings deposited;

(b) the ambient groundwater monitoring results recorded in accordance with condition 16;

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

(i) commissioning of the infrastructure; and
(ii) testing of the infrastructure.

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

(e) 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

19. The works approval holder may only commence time limited operations for an item of infrastructure identified in conditions 1 and 2:

(a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report and / or Critical Containment Infrastructure Report as required by conditions 5, 6, 7 and 8; and

(b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 14, the Environmental Commissioning Report for that item of infrastructure as required by condition 17 and 18 has been submitted by the works approval holder.

20. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 21:

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 19 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 20(a).

Time limited operations requirements

21. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 7 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 7.

Table 7: Infrastructure and equipment requirements during time limited operations

	Infrastructure and equipment	Operational requirements	Infrastructure location
TWTSF			
1.	Stage 1 and Stage 2	• production capacity not to exceed 1,400,000 tonnes per annual period; • maintain and operate a total freeboard of a minimum of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m) above the 1:100 AEP 72-hour event; • maintain and operate the spigots at the appropriate location; • decant pond maintained at the central ramp location from the northern wall of the TSF; • maintain and operate the decant pump and associated infrastructure / equipment; • decant water pumped via the return water pipeline to the return water pond (if constructed) and Processing Plant; • Stage 1 tailings deposition into the TSF from the southwestern end to a minimum of 405 mRL or to the saddle level between the southern and northern parts of the TSF; and • Stage 2 tailings deposition into the TSF from both the southwestern and northern ends to a minimum of 452 mRL.	Schedule 1 maps: Figures 1, 2, and 3
2.	Tailings discharge pipeline and return water pipelines	• maintain and operate the telemetry systems, pressure sensors and / or automatic cut-outs in the event of a pipe failure; and / or • maintain the integrity of the secondary containment to contain any spill for a period equal to the time between routine inspections.	Schedule 1 maps: Figure 4
3.	Return water pond (if required)	• storage capacity not to exceed 5,000 m^3; • maintain and operate a minimum freeboard of 0.5 m; and • maintain the integrity of HDPE liner.	Schedule 1 maps: Figure 4
4.	Turkey's nests	• storage capacity not to exceed 175 m^3.	Schedule 1 maps: Figure 4
TSF3			
5.	Starter embankment / Stages 1, 2, 3, and 4	• production capacity not to exceed 1,400,000 tonnes per annual period; • maintain and operate a total freeboard of a minimum	Schedule 1 maps: Figures 1, 11, and 12

	Infrastructure and equipment	Operational requirements	Infrastructure location
		of 0.5 m (minimum operational freeboard of 0.3 m and beach freeboard of 0.2 m); • maintain and operate the spigots at the appropriate location; • tailings deposition managed such that beach areas do not dry back for dust generation to occur; • in the event of dust occurrence, tailings beaches will be irrigated; • decant pond maintained at the centre of the TSF; • maintain and operate the decant pump and associated infrastructure / equipment; • decant water pumped via the return water pipeline to the Processing Plant; and • maintain the integrity of the bund on the western edge of the TSF3.	
6.	VWPs	• maintain and operate the VWPs to provide ongoing stability monitoring and prompt alerts in the event of seepage from the TSF3.	Schedule 1 maps: Figure 10
7.	Tailings discharge pipeline and return water pipelines	• maintain and operate the telemetry systems, pressure sensors and / or automatic cut-outs in the event of a pipe failure; and / or • maintain the integrity of the secondary containment to contain any spill for a period equal to the time between routine inspections.	Schedule 1 maps: Figures 4, 5, 11, and 12

Monitoring requirements

22. The works approval holder must ensure that all samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in relevant table.

23. Where specified in conditions, the works approval holder must ensure that:

(a) monthly monitoring is undertaken at least 15 days apart;

(b) quarterly monitoring is undertaken at least 45 days apart; and

(c) annual monitoring is undertaken at least 9 months apart.

24. The works approval holder must ensure that all monitoring equipment used on the premises to comply with the conditions of this works approval is calibrated in accordance with the manufacturer's specifications and the requirements of the works approval.

25. The works approval holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring theses issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

26. The works approval holder must record the results of all monitoring activity required

by conditions 16 and 27.

Monitoring during time limited operations

27. The works approval holder must monitor the groundwater during time limited operations for concentrations of the identified parameters in accordance with Table 8.

Table 8: Monitoring of ambient concentrations during time limited operations

Monitoring location(s)	Parameter	Trigger	Limit	Unit	Frequency	Averaging period	Method (Sampling and analysis)
TWTSF monitoring bores: TWMB01, TWMB02, TWMB03, TWMB04, TWMB05, and TDW5	SWL	12	9	mbgl	At least once prior to environmental commissioning. Monthly during environmental commissioning and time limited operations.	Spot sample	AS/NZS 5667.1 and AS/NZS 5667.11 In field non-NATA accredited analysis permitted
	pH	-	-	pH unit			
	EC	-	-	µS/cm			
TSF3 monitoring bores: TBS7, TBS8, TBS9, TBS10, TBS11, and TBS12.	TDS	-	-	mg/L			AS/NZS 5667.1 and AS/NZS 5667.11 By a NATA accredited laboratory
	Bicarbonate (HCO_3-)	-	-				
	Total acidity	-	-				
	Arsenic (As)	-	-				
	Antimony (Sb)	-	-				
	Cadmium (Cd)	-	-				
	Calcium (Ca)	-	-				
	Chloride (Cl)	-	-				
	Chromium (Cr)	-	-				
	Cobalt (Co)	-	-				
	Copper (Cu)	-	-				
	Lead (Pb)	-	-				
	Magnesium (Mg)	-	-				
	Mercury (Hg)	-	-				
	Molybendum (Mo)	-	-				
	Nickel (Ni)	-	-				
	Nitrate (NO_3)	-	-				
	Potassium	-	-				

Monitoring location(s)	Parameter	Trigger	Limit	Unit	Frequency	Averaging period	Method (Sampling and analysis)
	(K)						
	Sodium (Na)	-	-				
	Selenium (Se)	-	-				
	Sulphate (SO_4)	-	-				
	Vanadium (V)	-	-				
	Zinc (Zn)	-	-				
	WAD-Cyanide	-	-				

28. The works approval holder must undertake monitoring of the water balance for TSF3 and TWTSF each monthly period, and (as a minimum) record the following information:

(a) site rainfall;

(b) evaporation rate;

(c) decant water recovery volumes;

(d) volume of tailings deposited; and

(e) estimate of seepage losses.

Inspections

29. The works approval holder must

(a) undertake inspections during environmental commissioning and time limited operations as detailed in Table 9;

(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and

(c) maintain a record of all inspections undertaken.

Table 9: Inspections of infrastructure

Infrastructure	Type of inspection	Frequency
Tailings pipelines	Visual integrity	Daily
Return water pipelines		
Perimeter embankment		
Embankment freeboard	Visual to confirm required freeboard capacity is available	

Notifications

30. The works approval holder must ensure that the parameters listed in Table 10 are notified to the CEO in accordance with the notification requirements in Table 10.

Table 10: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
Condition 27	Breach of any limit specified in the works approval.	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable.	N1

Note 1: Notification requirements in the works approval must not negate the requirement to comply with s72 of the Act.
Note 2: Forms are in Schedule 2.

Compliance reporting

31. The works approval holder must submit to the CEO a report on the time limited operations with 60 calendar days of the completion date of time limited operations or 60 calendar days before the expiration date of the works approval, whichever is sooner.

32. The works approval holder must ensure the report by condition 31 includes the following:

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

(b) tailings density (solid vs water content);

(c) a summary of ambient groundwater monitoring results obtained during time limited operations under condition 27;

(d) interpretation and comparison of the results with the ANZG 2018 water quality default guideline values for livestock water supply, highlighting any exceedances;

(e) a summary of water balance results for TSF3 and TWTSF in accordance with condition 28;

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

(i) operations of the infrastructure; and
(ii) testing of the infrastructure.

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

(h) 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.

Records and reporting (general)

33. 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.

34. 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 conditions 1 and 2;

(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(s) 27 and 28; and

(d) complaints received under condition 33.

35. The books specified under condition 34 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 and abbreviations

In this works approval, the terms in Table 11 have the meanings defined.

Table 11: Definitions and abbreviations

Term / abbreviation	Definition
AEP	means Annual Exceedance Probability.
annual period	A 12-month period commencing from 1 January until 31 December in the same year.
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
Assessment of Site Contamination NEPM	means the *National Environment Protection (Assessment of Site Contamination) Measure 1999,* as amended from time and time.
AS1726	means the Australian Standard 1726:1993 *Geotechnical site investigations.*
AS/NZS 2033	means the Australian/New Zealand Standard 2033:2008 *Installation of polyethylene pipe systems.*
AS/NZS 4129	means the Australian/New Zealand Standard 4129:2008 *Fittings for polyethylene (PE) pipes for pressure applications.*
AS/NZS 4130	means the Australian/New Zealand Standard 4130:2009 *Polyethylene (PE) pipes for pressure applications.*
AS/NZS 4131	means the Australian/New Zealand Standard 4131:2010 *Polyethylene (PE) compounds for pressure pipes and fittings.*
AS/NZS 5667.1	means the Australian/New Zealand Standard 5667.1:1998 *Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.11	means the Australian/New Zealand Standard 5667.11:1998 *Water Quality – Sampling – Guidance on Sampling of Groundwaters*
averaging period	means the time over which a limit or target is measured or a monitoring result is obtained.
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

Term / abbreviation	Definition
critical containment infrastructure	means the items of infrastructure listed in condition 2.
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.
EC	means Electrical Conductivity.
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).
HDPE	means high-density polyethylene.
L/s	means litres per second.
m	means metres.
m^3	means cubic metres.
mbgl	means metres below ground level.
mg/L	means milligrams per litre.
Mm^3	means million cubic metres.
m RL	means metres at reduced level.
NATA	means National Association of Testing Authorities, Ausstralia.
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.

Term / abbreviation	Definition
NUDLC 2020	means the *National Uniform Drillers Licensing Committee, 2020, Minimum construction requirements for water bores in Australia 4th Ed.*
PMF	means probably maximum flood event.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
SWL	means Standing Water Level.
suitably qualified engineer / geotechnical specialist	means a person who: (a) holds a tertiary academic qualification in geotechnical science or engineering; and / or (b) is eligible for membership of the Institute of Engineers, Australia; and (c) has minimum of 5 years of experience working in the field of geoscience.
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.
TDS	means Total Dissolved Solids.
TSF3	means Tailings Storage Facility 3.
TWTSF	means Tuckabianna West In-pit Tailings Storage Facility.
µS/cm	means microsiemens per centimetre.
(X)V:(X)H	means vertical to horizontal ratio related to the design of a slope.
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 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

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

Figure 1: Map of the boundary of the prescribed premises and emission / discharge points

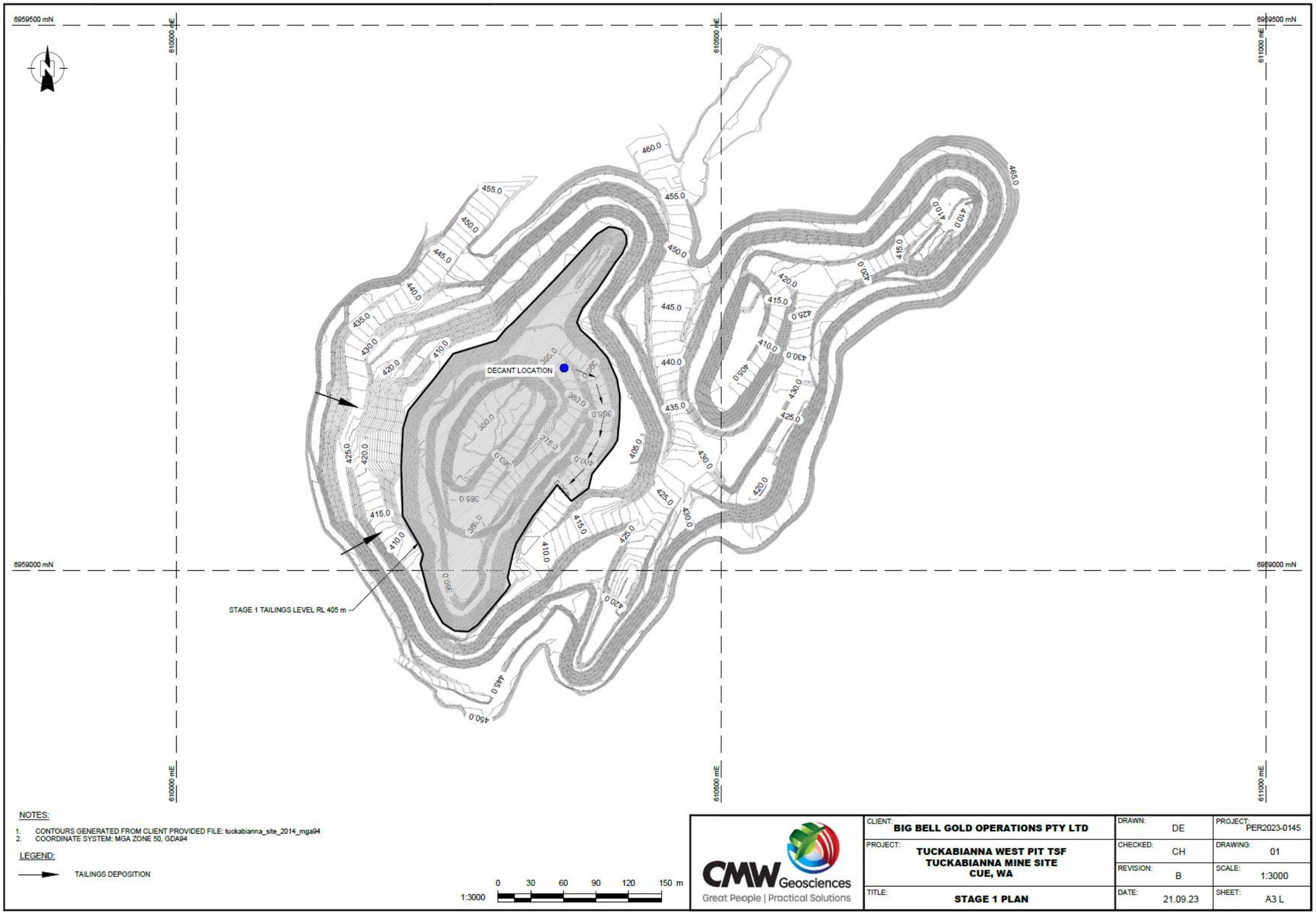


Figure 2: TWTSF Stage 1 plan and decant location

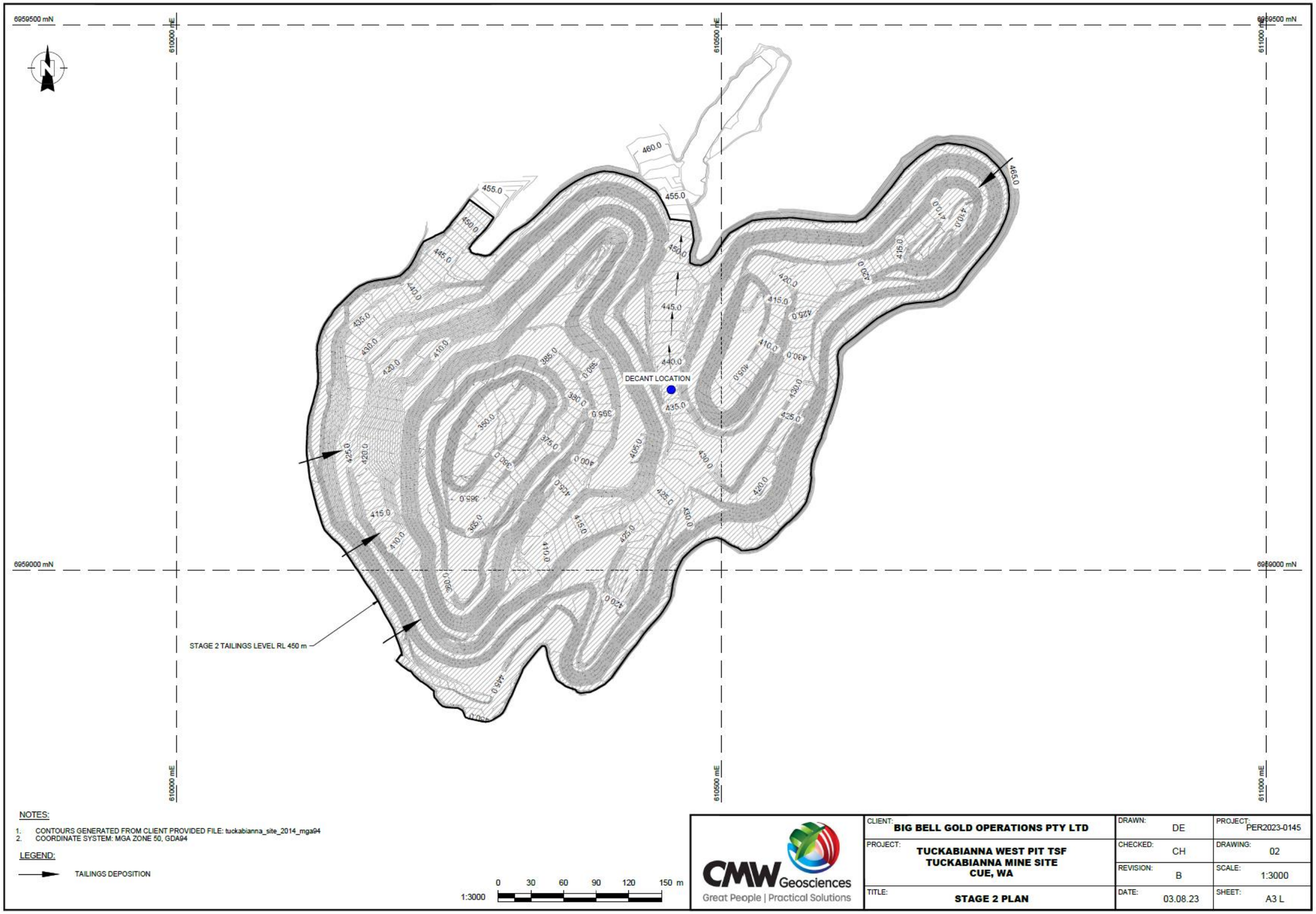


Figure 3: TWTSF Stage 2 plan and decant location

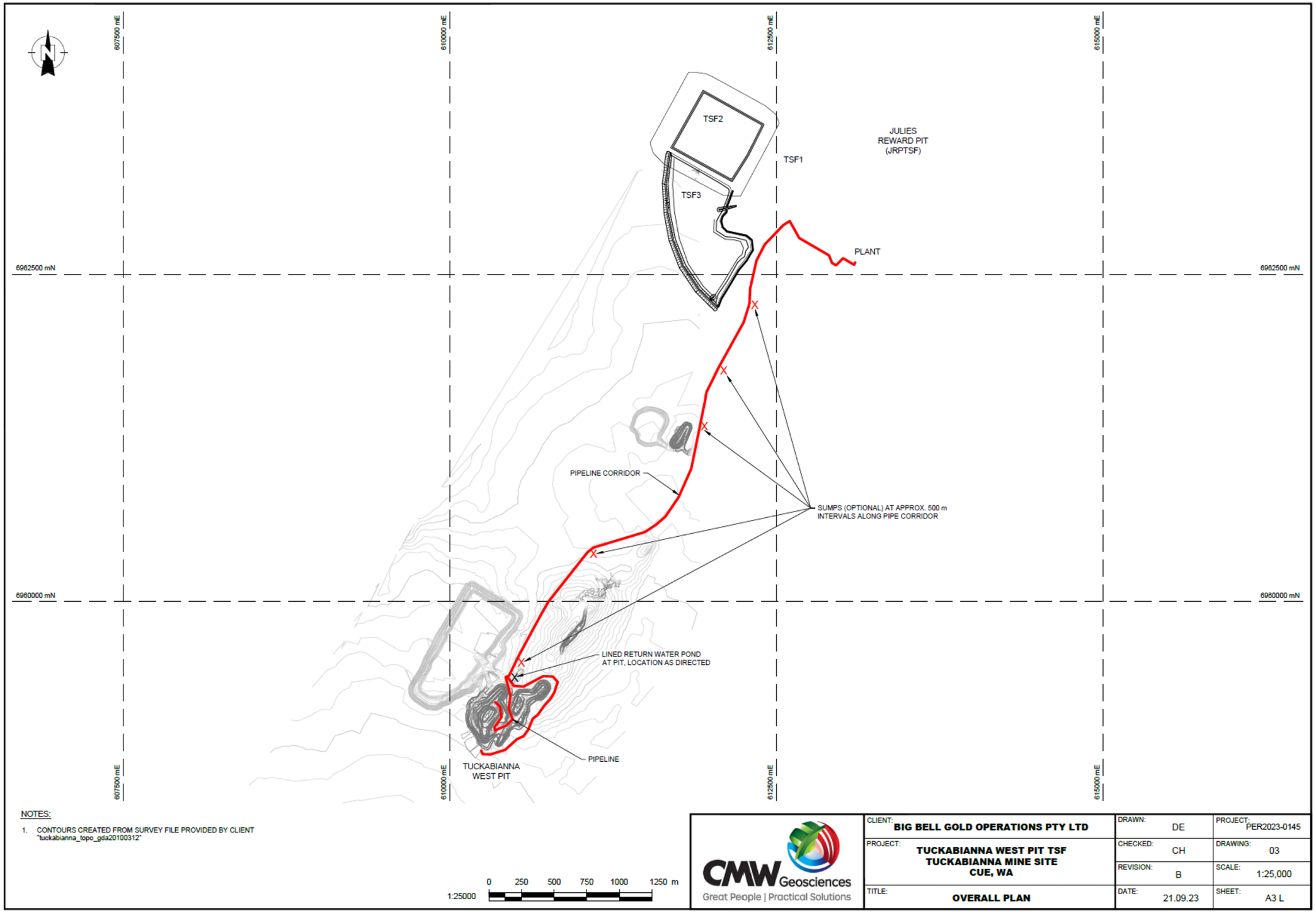
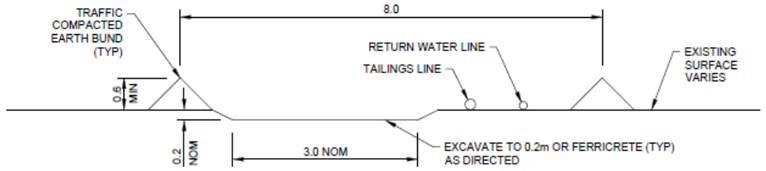
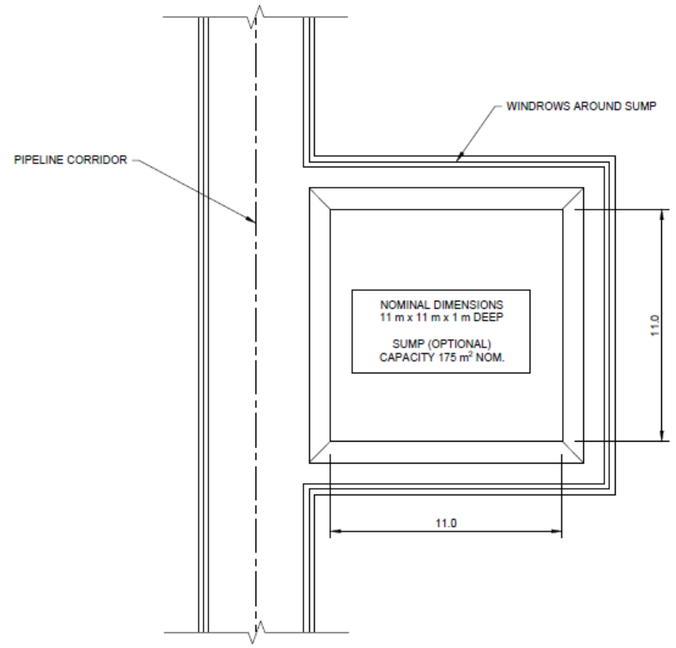


Figure 4: Tailings and return water pipelines, turkey's nests, and TWTSF return water pond site layout

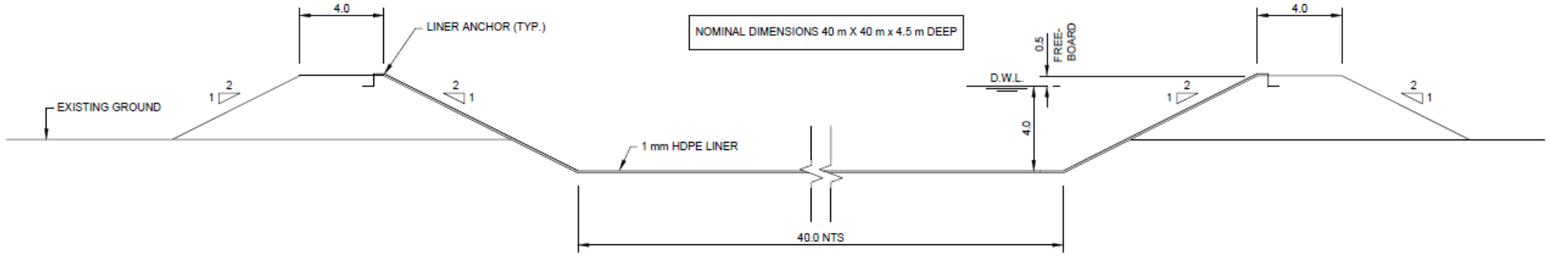
Figure 5: TSF3 indicative return water pipeline placement and process water pond



PIPELINE BUNDING - TYPICAL SECTION
1:100



PIPELINE CORRIDOR SUMP - PLAN
1:250



RETURN WATER POND - TYPICAL SECTION
1:250

NOTES:

1. ALL DIMENSIONS IN METRES UNLESS SPECIFIED

1:250 0 2.5 5 7.5 10 12.5 m

1:100 0 1 2 3 4 5 m

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CLIENT: BIG BELL GOLD OPERATIONS PTY LTD		DRAWN: DE	PROJECT: PER2023-0145
PROJECT: TUCKABIANNA WEST PIT TSF TUCKABIANNA MINE SITE CUE, WA		CHECKED: CH	DRAWING: 04
		REVISION: B	SCALE: AS SHOWN
TITLE: PIPELINE AND SUMP DETAILS		DATE: 21.09.23	SHEET: A3 L

Figure 6: As-constructed plans for pipeline bunding and corridor, turkey's nests, and TWTSF return water pond

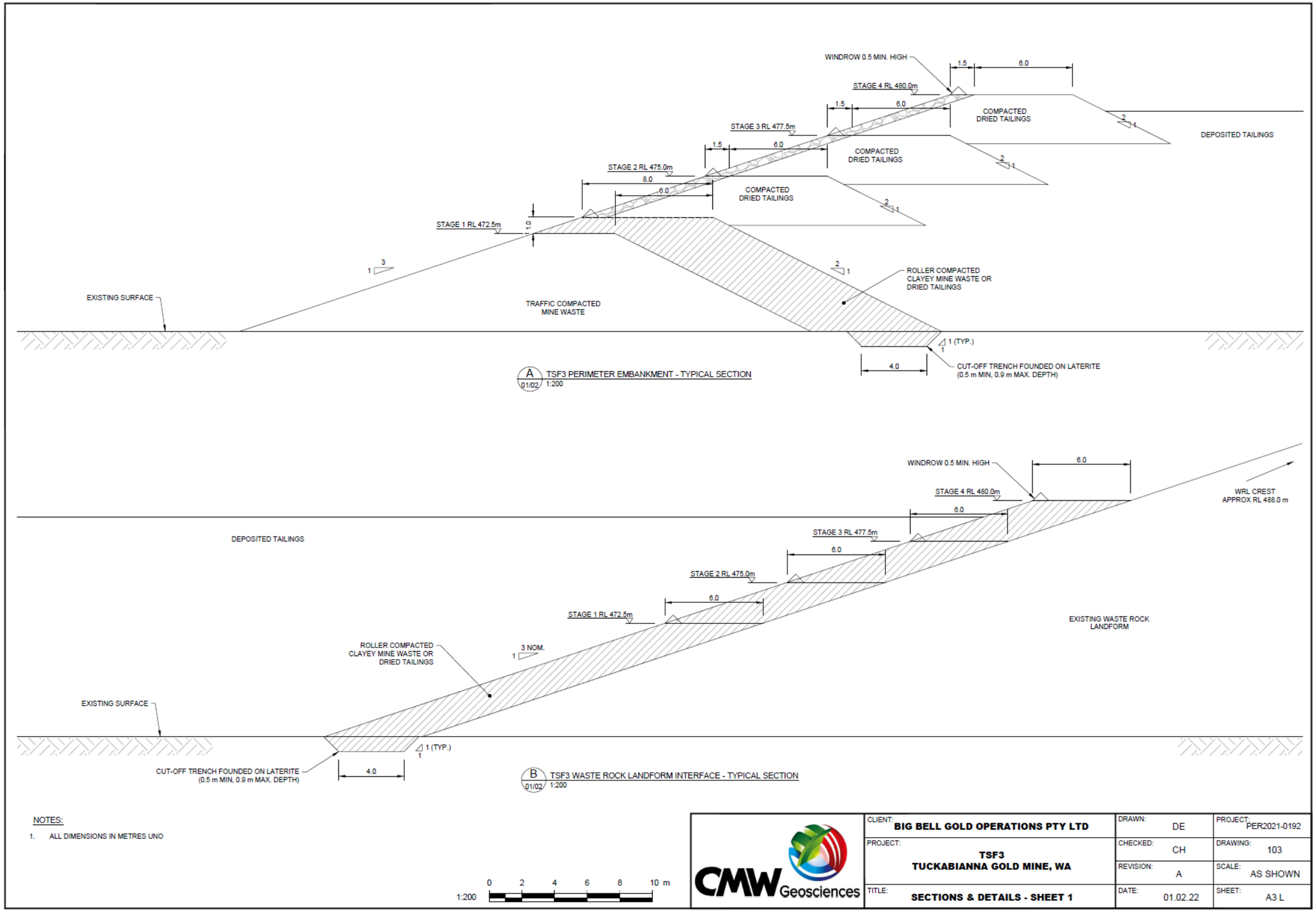
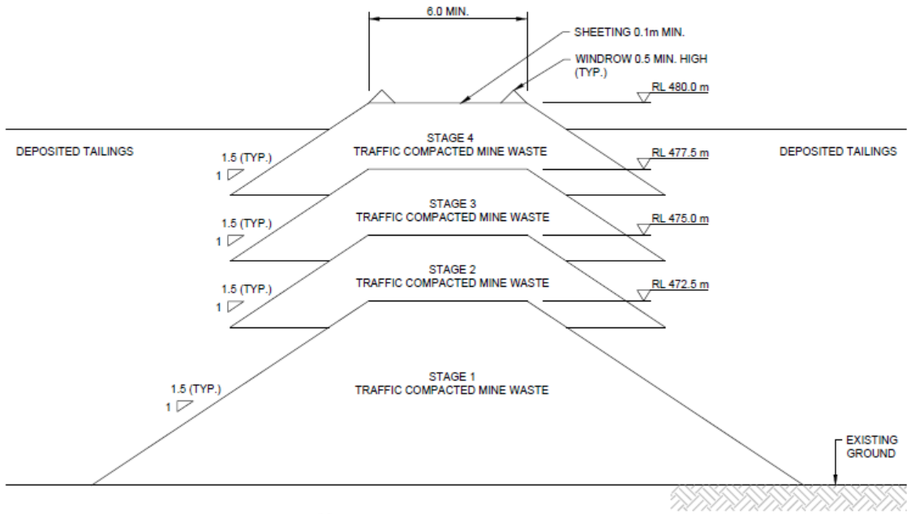
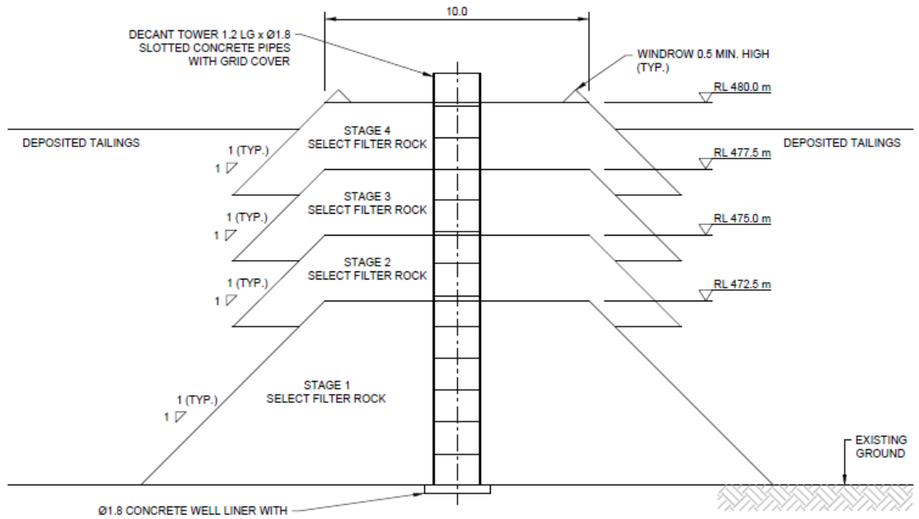


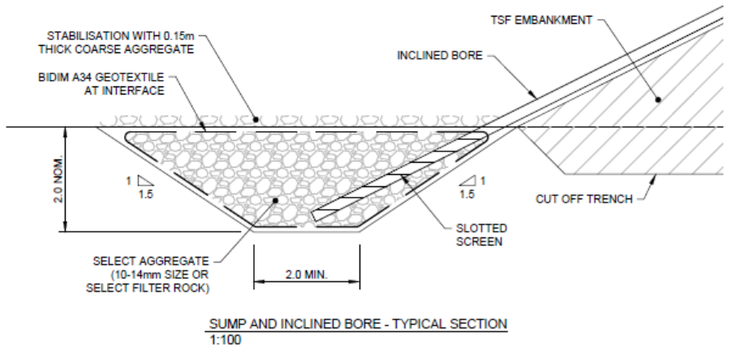
Figure 7: TSF3 embankments layout and cross section



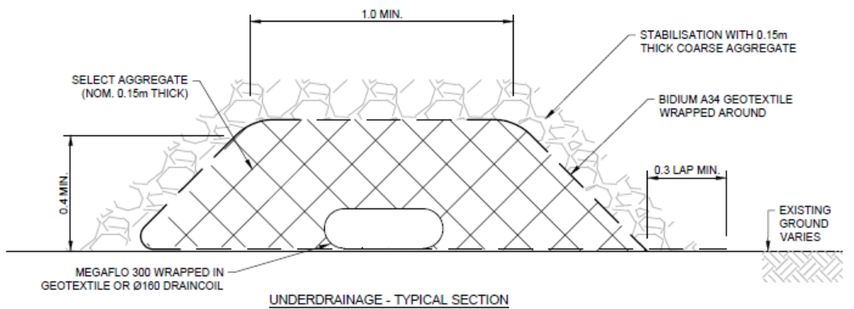
C 01/02 TSF DECANT ACCESSWAY - TYPICAL SECTION
1:200



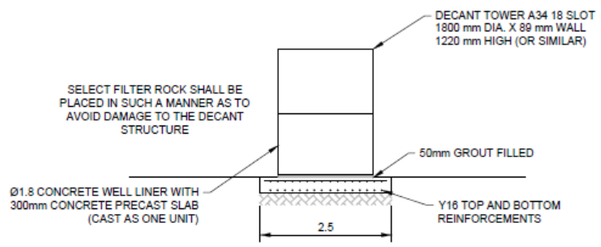
D 01/02 TSF DECANT - TYPICAL SECTION
1:200



SUMP AND INCLINED BORE - TYPICAL SECTION
1:100



UNDERDRAINAGE - TYPICAL SECTION
1:20



DECANT TOWER TO BE CAST INTO EXCAVATION ON COMPETENT MATERIAL AS APPROVED BY THE ENGINEER. AVOID OVER EXCAVATION LATERALLY. PROVIDE 50mm BLINDING CONCRETE LAYER AT THE BASE OF THE EXCAVATION.

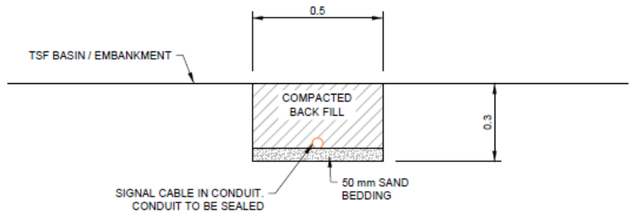
DECANT TOWER FOUNDATION - TYPICAL DETAIL
1:100

1:200 0 2 4 6 8 10 m

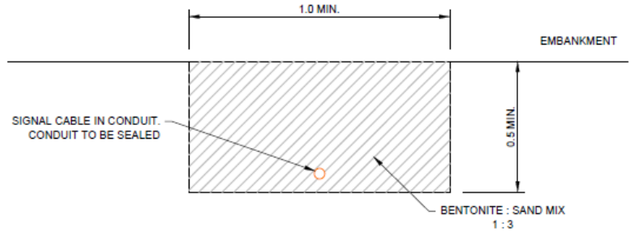
NOTES:
1. ALL DIMENSION IN METRES UNLESS SPECIFIED.

CMW Geosciences	CLIENT: BIG BELL GOLD OPERATIONS PTY LTD	DRAWN: DE	PROJECT: PER2021-0192
	PROJECT: TSF3 TUCKABIANNA GOLD MINE, WA	CHECKED: CH	DRAWING: 104
		REVISION: A	SCALE: AS SHOWN
	TITLE: SECTIONS & DETAILS SHEET 2	DATE: 01.02.22	SHEET: A3 L

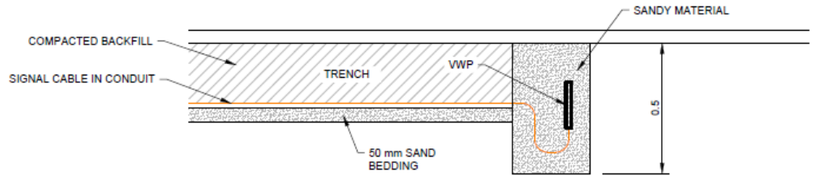
Figure 8: TSF3 embankments layout and detail including sump and include bore, decant tower and underdrainage



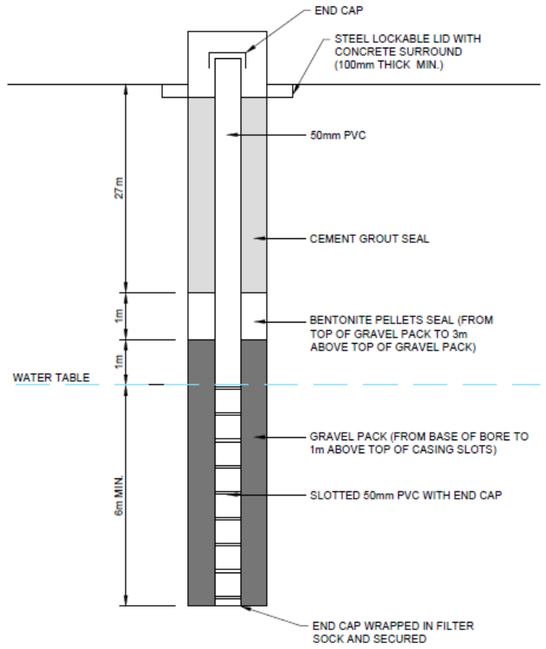
VWP TRENCH - TYPICAL DETAIL
1:20



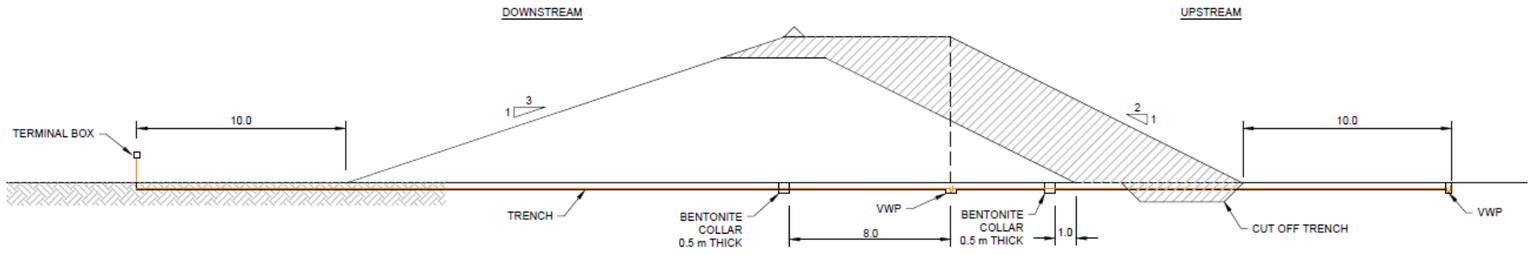
BENTONITE COLLAR - TYPICAL DETAIL
1:20



VIBRATING WIRE PIEZOMETER - TYPICAL DETAIL
1:20



MONITORING BORE - TYPICAL DETAIL
NTS



STAGE 1 EMBANKMENT - TYPICAL SECTION
1:250

NOTES:

1. VIBRATING WIRE PIEZOMETER REFERS TO 3.5 BAR (50 PSI) PIEZOMETER MODEL NO. 52610520 BY DGSI
2. SIGNAL CABLE MODEL NO. 50613824 BY DGSI
3. ALL DIMENSION 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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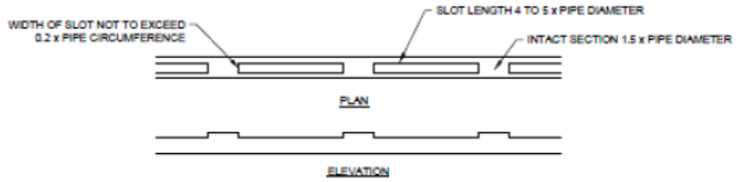
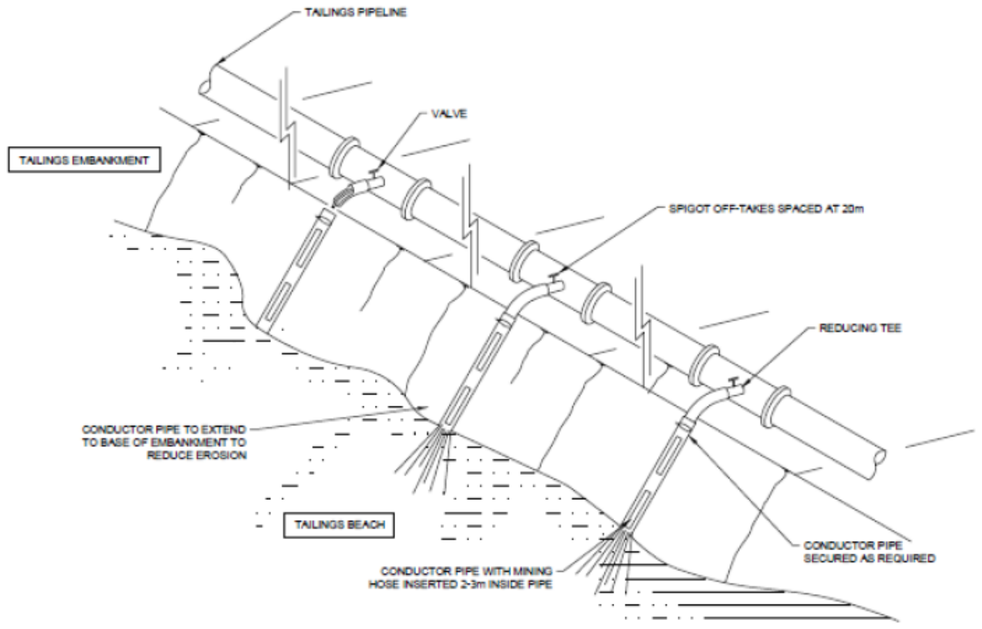
CLIENT: BIG BELL GOLD OPERATIONS PTY LTD		DRAWN: DE	PROJECT: PER2021-0192
PROJECT: TSF3 TUCKABIANNA GOLD MINE, WA		CHECKED: CH	DRAWING: 105
		REVISION: A	SCALE: AS SHOWN
TITLE: INSTRUMENTATION DETAILS		DATE: 01.02.22	SHEET: A3 L

Figure 9: TSF3 instrumentation detail including VWP, bentonite collar, monitoring bore and Stage 1 embankment

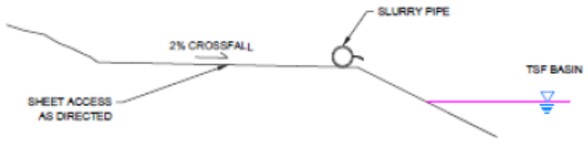
PIPELINE BUNDING - TYPICAL SECTION
1:100



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



PROPOSED SPIGOT ARRANGEMENT
ISOMETRIC VIEW (NTS)



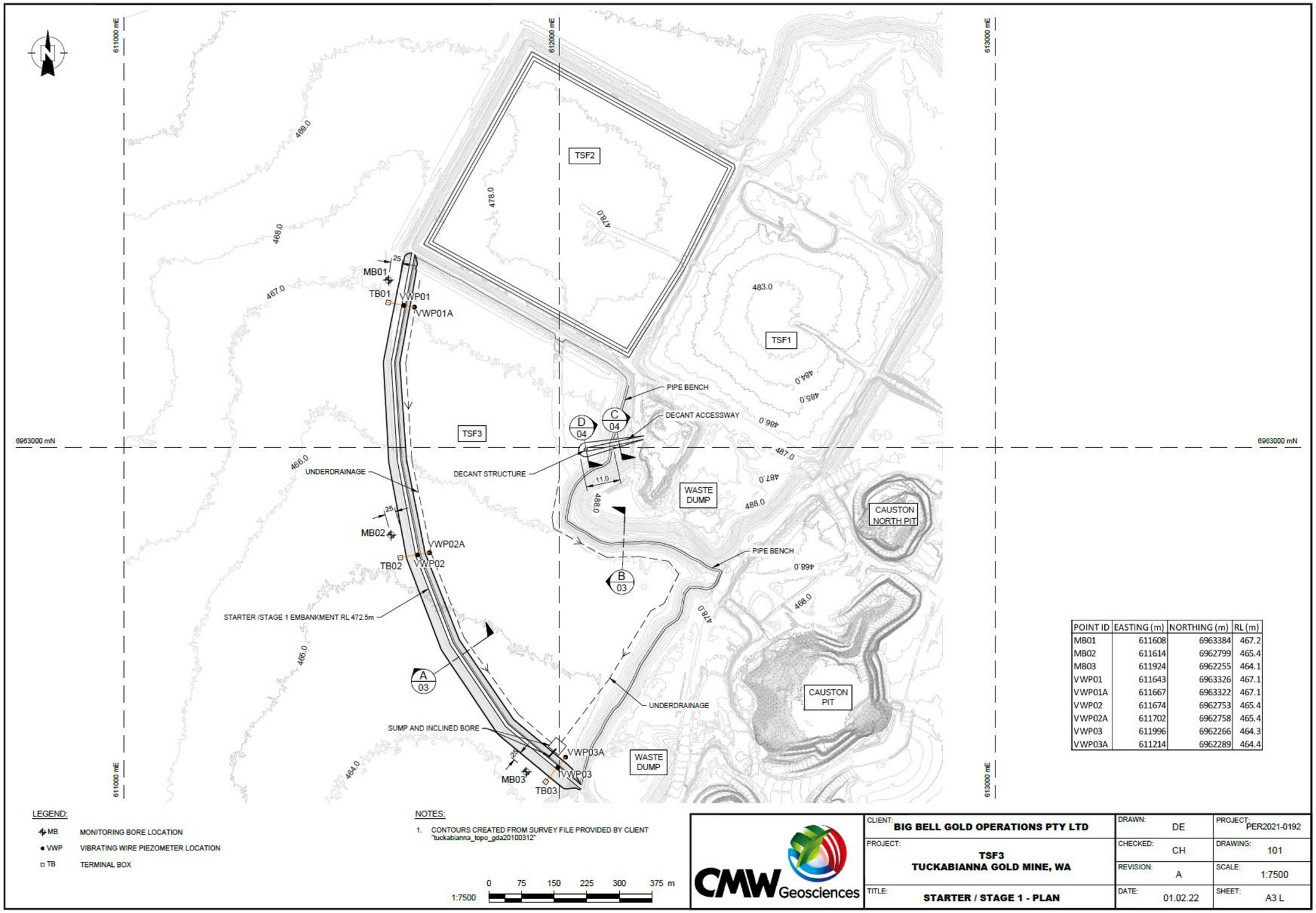
PIPE BENCH
SECTION VIEW (NTS)

NOTES:

1. ALL DIMENSIONS IN METRES UNLESS SPECIFIED

CMW Geosciences	CLIENT: BIG BELL GOLD OPERATIONS PTY LTD	DRAWN: PA	PROJECT: PER2021-0192AH
	PROJECT: TSF3 TUCKABIANNA GOLD MINE, WA	CHECKED: CH	FIGURE: 03
		REVISION: A	SCALE: NTS
	TITLE: PIPELINE & SPIGOT DETAILS	DATE: 25.01.22	SHEET: A3 L

Figure 10: TSF3 pipeline and spigot details



POINT ID	EASTING (m)	NORTHING (m)	RL (m)
MB01	611608	6963384	467.2
MB02	611614	6962799	465.4
MB03	611924	6962255	464.1
VWP01	611643	6963326	467.1
VWP01A	611667	6963322	467.1
VWP02	611674	6962753	465.4
VWP02A	611702	6962758	465.4
VWP03	611996	6962266	464.3
VWP03A	611214	6962289	464.4

Figure 11: Map of TSF3 Starter embankment / Stage 1 plan including decant system, VWPs, and monitoring bore locations

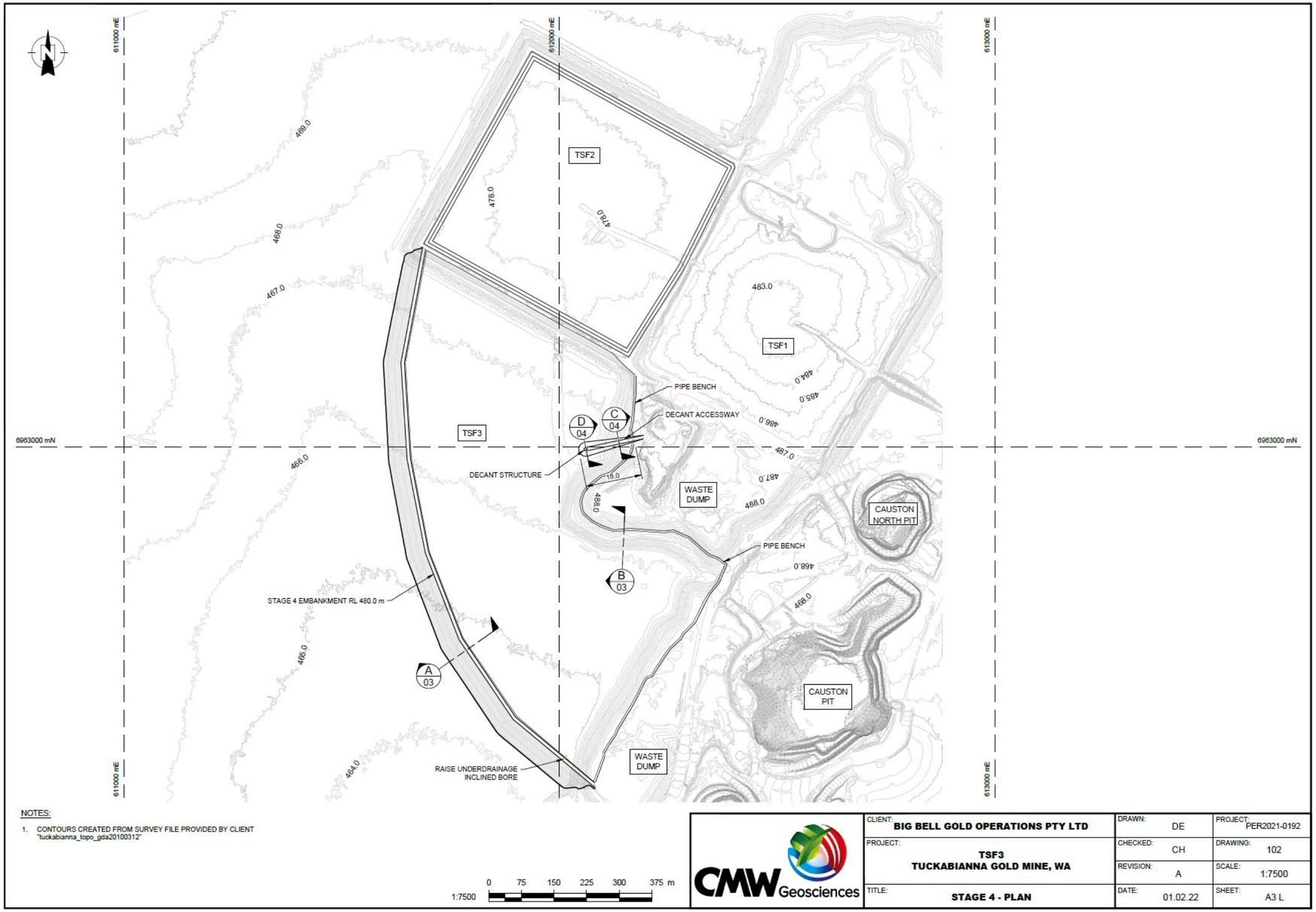


Figure 12: Map of TSF3 Stage 4 plan

Figure 13: TWTSF monitoring bore locations

Figure 14: TSF3 monitoring bore locations including existing monitoring bore TBS2

Schedule 2: Form

Works approval:	Works approval holder:
Form: N1	Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Works approval number	
Name of operator	
Location of premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of works approval holder	
Date	