Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6934/2024/1
Works approval holder	Golden Grove Operations Pty Ltd
ACN	114 868 325
Registered business address	Level 2 150 Collins Street MELBOURNE VIC 3000
DWER file number	DER2024/000148
Duration	09/09/2024 to 08/09/2027
Date of issue	09/09/2024
Premises details	Golden Grove Mine M59/89, M59/90, M59/363 and part of M59/3 YALGOO WA 6635

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	800,000 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 09 September 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2024.09.09 13:17:58 +08'00'

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

Works approval history

Date	Reference number	Summary of changes
09/09/2024	W6934/2024/1	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 infrastructure location,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure or equipment	Design and construction / installation requirements	Infrastructure location
1	TSF4 (non-critical containment infrastructure)	<u>Central Causeway</u> • Rock fill embankment approximately 530 m in length and with a maximum height of 10 m.	At the location shown in Schedule 1, Figures 2 and 3 as 'Tailings Deposition Causeway' As shown in Schedule 1, Figure 4
		<u>Tailings Distribution System</u> • Ring main system positioned at the head of the central causeway. • Ring main system feeding 12 individual valved outlets.	At the location shown in Schedule 1, Figures 2 and 3 as 'Tailings Deposition Tank' As shown in Schedule 1, Figure 5
		<u>Decant recovery system</u> • Skid mounted pump with a floating intake.	At the location shown in Schedule 1, Figures 2, 3 and 8 as 'Return water intake infrastructure'
2	Tailings and return water pipelines	• Containment bunding along pipe routes. • Pipelines predominately HDPE pipe. • Rubber lined steel pipes in localised areas. • Flow meters installed.	As shown in Schedule 1, Figure 6
3	Seepage Collection Pond	• 20 m x 20 m x 3.5 m deep. • Bottom 2.0 m lined with a HDPE liner. • Capacity to store 1,120 m^3 of water. • Self-priming pump with a dedicated HDPE pipe to transfer water back to Process Water Ponds 2 and 3.	At the location shown in Schedule 1, Figures 6 and 10

	Infrastructure or equipment	Design and construction / installation requirements	Infrastructure location

4	Thickener Plant	• Constructed within a concrete bunded containment facility, and comprise of the following:
		  ○ Drive in sump and sump pump
		  ○ Designated spoon drain directed to the Process Water Ponds 2 and 3.
		• Constructed and installed as per manufacturer's specifications.
		• Primary components include:
		  ○ Paste Thickener
		  ○ Underflow pump trains
		  ○ Flocculant Plant
		  ○ Switchroom
		  ○ Transformer.
			At the location shown in Schedule 1, Figure 6
			As shown in Schedule 1, Figure 7

5	Process Water Ponds 2 and 3	• 2x HDPE lined ponds. • Ponds hydraulically balanced and have a total 100% volume level (RL 361.35 m) storage capacity of 15,600 m^3 (inclusive of dead volume below pump suction level). • Process Water Pond 2 designed to spill over into Process Water Pond 3.	At the location shown in Schedule 1, Figure 1 As shown in Schedule 1, Figures 6 and 8
6	Stormwater diversion bund	• Constructed around the southeastern side of TSF4 and around the embankment to re-direct any surface runoff from the upstream catchment to a natural drainage path downstream.	As shown in Schedule 1, Figures 2 and 3

2. The works approval holder must:

(a) construct the critical containment infrastructure;

(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 or equipment	Design and construction requirements	Infrastructure location

1	TSF4	Perimeter embankment
		• Downstream raise construction method in two stages:
		  ○ Stage 1 crest elevation to RL 351.5 m
		  ○ Stage 2 crest elevation to RL 354.4 m
		• Earth filled zoned embankment approximately 1,585 m in length and with a maximum height of 8.0 m.
		• Majority of the embankment to comprise clayey silty sand (Zone 1A material) and sandy gravels and laterite (Zone 1B material).
			As shown in Schedule 1, Figures 2, 3 and 9

		Operational pond area (wet beach) • Two clay liner layers of 150 mm compacted thickness with a permeability of less than 1 x 10^{-9} m/s. • Clay liner compacted to more than 95% of the Modified Maximum Dry Density determined using AS 1289.5.2.1-2003 and AS 1289 5.4.2-2007. • Final surface of liner graded to achieve a minimum 1% fall along the natural drainage path to the perimeter embankment.	As shown in Schedule 1, Figure 2 and 3 as 'Clay Liner'
2	Underdrainage and seepage interception system	• Upstream toe drain extending the full length of the perimeter embankment. • Finger drains positioned at 100 m centres along the embankment alignment and embedded within the fill during construction. • Finger drains to direct water from the upstream toe drain to the downstream toe drain. • Downstream toe drain to report to the seepage collection pond. • Interception drain along the south-eastern embankment. • Cut off trench beneath the downstream toe of the embankment.	As shown in Schedule 1, Figures 9 and 10

Construction of monitoring and seepage recovery infrastructure

3. The works approval holder must design, construct, and install groundwater monitoring bores in accordance with the requirements specified in Table 3.

Table 3: Infrastructure requirements – groundwater monitoring bores

Infrastructure	Design, construction, and installation requirements	Monitoring bore location(s)	Timeframe
Groundwater monitoring bore(s)	<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*. 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.	As depicted in Schedule 1, Figure 11 as TP01 and One new bore to be installed (south-west of MB88) in the vicinity of the red dot as shown in Schedule 1, Figure 12	Must be constructed, developed (purged), and determined to be operational and suitable for use prior to the commencement of deposition into TSF4
	<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>Well construction log:</u> Bore construction details must be documented within a bore construction log to demonstrate compliance with *ASTM D5092/D5092M-16.* 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.		
	<u>Installation survey:</u> the vertical (top of casing) and horizontal position of each monitoring bore must be surveyed and subsequently mapped by a suitably qualified surveyor.		

Infrastructure	Design, construction, and installation requirements	Monitoring bore location(s)	Timeframe
	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.		
	Baseline data: Appropriate baseline data must be obtained to establish natural groundwater quality and variability in order to inform any potential contamination due to operation of TSF4. The length of the baseline monitoring of parameters identified in Table 8, and the frequency of sampling must be verified by a suitably qualified hydrogeologist.		At least one sampling event undertaken prior to commencement of deposition into TSF4

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

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

Table 4: Infrastructure requirements - seepage recovery infrastructure

Infrastructure	Design and construction requirement / installation requirement	Infrastructure location	Timeframe
Seepage collection bores	Appropriate location and number of bores to be assessed, identified and/or verified by suitably qualified hydrogeologist, supported by identification of key environmental receptors, interpretation of groundwater modelling and hydrogeological information available, including geological and geophysical assessments. A minimum of two bores need to be available for use.	Must be situated at locations targeted to recover seepage. As depicted in Schedule 1, Figure 11 as RB6 RB7	Must be constructed and determined to be operational / available for use prior to the commencement of deposition into TSF4

Compliance reporting

5. 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 conditions 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 geotechnical 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;

(c) photographic evidence of the installation of the 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.

Critical Containment Infrastructure reporting

7. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 2 being constructed and/or installed:

(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 geotechnical engineer that each item of critical containment infrastructure or component thereof, as specified in condition 2, has been built and installed in accordance with the 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 the 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 5 to 7, where an item of infrastructure or component of infrastructure has been certified as not being constructed, or does not comply with corresponding requirements, or contains material defects, the works approval holder must:

(a) correct the non-compliant or defective works, prior to re-certifying in accordance with conditions 6(a) and 8(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 6 and 8.

Compliance reporting – bore construction and baseline groundwater monitoring

10. The works approval holder must, within 30 calendar days of the monitoring bores and seepage collection bores in Tables 3 and 4 being constructed, submit to the CEO a bore construction report evidencing compliance with the requirements of conditions 3 and 4.

11. The works approval holder must within 30 days of the monitoring bores in Table 3 being constructed and prior to environmental commissioning of TSF4 conduct baseline sampling (at least one event) on the new bores (Table 3) and existing bores (Table 8) in accordance with Schedule B2 (Section 5.4 and 8.2.4) of the *Assessment of Site Contamination NEPM* for the 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 conditions 5 and 6 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 conditions 7 and 8 of this works approval; and

(b) the CEO has notified the works approval holder that the Critical Containment Infrastructure Report required by conditions 7 and 8 meets the requirements of the works approval.

14. Any environmental commissioning activities undertaken for an item of infrastructure 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	TSF4	• Subject to completing the requirements of conditions 7 and 8 for the perimeter embankment (Stage 1); operational pond area; and underdrainage and seepage interception system. • Subject to completing the requirements of conditions 3, 4 and 11.	For a period not exceeding 30 calendar days in aggregate
2	Tailings and return water pipelines	• Subject to TSF4 completing the requirements of row 1 of this table.	

	Infrastructure and equipment	Commissioning requirements	Authorised commissioning duration
		• Subject to completing the requirements of conditions 5 and 6 for this infrastructure. • Visual inspection of pipelines to check for leaks or any other issues. • All flow meters to be tested and calibrated in accordance with manufacturer's specifications.	
3	Tailings Distribution System	• Subject to TSF4 completing the requirements of row 1 of this table. • Subject to completing the requirements of conditions 5 and 6 for this infrastructure.	
4	Seepage Collection Pond	• Subject to completing the requirements of conditions 5 and 6 for this infrastructure.	
5	Thickener Plant	• Subject to completing the requirements of conditions 5 and 6 for this infrastructure.	
6	Process Water Ponds 2 and 3	• Subject to completing the requirements of conditions 5 and 6 for this infrastructure.	

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 point during environmental commissioning and time limited operations

Emission	Discharge point	Discharge point location
Thickened tailings	TSF4 via valved outlets / spigots from the ring main system	At the location shown in Schedule 1, Figures 2 and 3 as 'Tailings Deposition Tank'

Environmental commissioning reporting

16. 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.

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

(a) a summary of the environmental commissioning activities undertaken, including timeframes, volumes of tailings discharged into TSF4, tailings stream solid content and water returned to Process Water Ponds 2 and 3;

(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) commissioning of the infrastructure; and

(ii) testing of the infrastructure.

(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

18. 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 has been submitted by the works approval holder for that item of infrastructure; 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 conditions 16 and 17 has been submitted by the works approval holder.

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

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 18 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 19(a).

Time limited operations requirements

20. 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

Site infrastructure and equipment	Operational requirement	Infrastructure location
TSF4	• Maximum throughput of 800,000 tonnes per annual period (i.e. tailings discharge into TSF4). • To be maintained as per the design and construction / installation requirements in conditions 1 and 2. • Maintain a freeboard of 1 m along the perimeter	As shown in Schedule 1, Figures 1, 2 and 3

Site infrastructure and equipment	Operational requirement	Infrastructure location
	embankment. • Maintain a freeboard of 300 mm along the length of the causeway. • Sub-aerial deposition of tailings into TSF4. • Valved outlets operated in sequence to establish the design beach profile. • Supernatant pond maintained to its minimum extent. • Decant water removed by pumping and returned to the Process Water Ponds 2 and 3.	
Underdrainage and seepage interception system	• To be maintained as per the design and construction / installation requirements in condition 2. • Any water or seepage water in upstream toe drain to report to finger drains along the embankment alignment. • Finger drains to report to the downstream toe drain and then into the Seepage Collection Pond.	As shown in Schedule 1, Figures 9 and 10
Tailings and return water pipelines	• To be maintained as per the design and construction / installation requirements in condition 1.	As shown in Schedule 1, Figure 6
Seepage Collection Pond	• To be maintained as per the design and construction / installation requirements in condition 1. • Maintain a freeboard of 1 m. • Seepage water in the pond to be pumped to the Process Water Ponds 2 and 3.	As shown in Schedule 1, Figure 6
Thickener Plant	• Maintained and operated as per manufacturer's specifications. • Underflow to be pumped via 3 trains (duty/duty/standby) of 2 stage centrifugal pumps to ring main system via the tailings deposition pipeline. • Overflow water directed to the Process Water Ponds 2 and 3.	As shown in Schedule 1, Figures 2 and 3
Process Water Ponds 2 and 3	• To be maintained as per the design and construction / installation requirements in condition 1. • Maintain a 400 mm freeboard. • Process water returned back to the Scuddles Process Water Pond 1 or used for underflow pump flushing and for flocculant dilution.	As shown in Schedule 1, Figures 1 and 6

Monitoring during time limited operations

21. The works approval holder must monitor the groundwater during time limited operations in accordance with Table 8 and must not exceed the corresponding limit in that table.

Table 8: Groundwater monitoring during time limited operations[3]

Monitoring location	Parameter	Unit	Limit[2]	Frequency & Averaging period	Method
Monitoring bores: MB87 MB89 MB90 MB92 TP01 BH5 As depicted in Schedule 1, Figure 11 New bore[4] as depicted in Schedule 1, Figure 12 Seepage collection bores: RB6 RB7 As depicted in Schedule 1, Figure 11	Standing Water Level	mbgl	5	Monthly	Spot Sample AS/NZS 5667.1 AS/NZS 5667.11 By a NATA accredited laboratory
	Sulphate	mg/L	1,000		
	pH[1]	pH units	≥ 6.0 ≤ 9.0	Quarterly	
	Electrical Conductivity	µS/cm	-		
	Total Dissolved Solids	mg/L	5,000		
	Total acidity ($CaCO_3$)		40		
	Total hardness (as $CaCO_3$)		-		
	Total alkalinity (as $CaCO_3$)		-		
	Ammonia		-		
	Bicarbonate (HCO_3)		-		
	Calcium		1,000		
	Carbonate		-		
	Chloride		-		
	Magnesium		<600		
	Nitrate (as NO_3)		400		
	Nitrite		30		
	Phosphate		-		
	Potassium		-		
	Silica		-		
	Sodium		-		
	Aluminium		5.0		
	Antimony		-		

Monitoring location	Parameter	Unit	Limit[2]	Frequency & Averaging period	Method
	Arsenic		0.5		
	Beryllium		-		
	Bismuth		-		
	Cadmium		0.01		
	Chromium		1.0		
	Cobalt		1.0		
	Copper		0.4		
	Iron		-		
	Lead		0.1		
	Manganese		-		
	Mercury		0.02		
	Molybdenum		0.15		
	Nickel		1.0		
	Selenium		0.02		
	Silver		-		
	Thallium		-		
	Uranium		0.2		
	Zinc		20		
	Total Nitrogen (as N)		-		
	Total Phosphorus		-		

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Limits not applicable for RB6 and RB7.
Note 3: Level of detection is required to be sufficient to enable comparison with *ANZECC & ARMCANZ 2000* guidelines.
Note 4: Location of the new monitoring bore is subject to change.

22. The works approval holder must ensure that:

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

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

Water balance during time limited operations

23. The works approval holder must undertake a water balance for TSF4 each monthly period, and (as a minimum) record the following information:

(a) site rainfall;

(b) evaporation rate;

(c) decant water recovery volumes;

(d) seepage recovery volumes from seepage infrastructure;

(e) volume of tailings deposited;

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

(g) volume of water retained in tailings; and

(h) calculated seepage rates.

Inspections

24. The works approval holder must conduct visual inspections of the infrastructure during commissioning and time limited operations at the frequency specified in Table 9.

Table 9: Inspections of infrastructure

Infrastructure	Type of inspection	Frequency
TSF4 embankment / causeway freeboard and supernatant pond	To confirm required freeboard capacity is available	Daily
Seepage Collection Pond		
Process Water Ponds 2 and 3		
Tailings and return water pipelines	Integrity check / loss of containment	

Compliance reporting

25. 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.

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

(a) a summary of the time limited operations, including timeframes and amount of ore processed and tailings discharged into TSF4;

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

(c) interpretation of the water balance (condition 23), including seepage rates, and volumes of any seepage recovered;

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

(i) operations of the infrastructure; and

(ii) testing of the infrastructure.

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

(f) 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.

Notifications

27. The works approval holder must submit to the CEO a written report within 14 days of an exceedance where concentrations:

(a) at the monitoring locations listed in Table 10;

(b) for the corresponding parameter;

(c) exceed the corresponding trigger value,

when monitored in accordance with condition 21.

Table 10: Groundwater quality trigger values

Monitoring location	Parameter	Trigger value
MB87, MB89, MB90, MB92, TP01, BH5 and New bore	Sulphate	500 mg/L

28. The works approval holder must, in the event of a parameter in condition 27 exceeding the corresponding trigger value specified in that condition, undertake the management action that correspond with the relevant parameter and corresponding monitoring locations within the corresponding timeframe as specified in Table 11.

Table 11: Management actions required in the event of trigger value exceedance

Monitoring location	Parameter	Management action	Timeframe

MB87, MB89, MB90, MB92, TP01, BH5 and New bore	Sulphate	Upon receiving confirmatory sampling analysis results:
		• Investigate the cause(s) of the exceedance
		• Take relevant action(s) to minimise the likelihood of future exceedances of a similar nature
		• Notify the CEO in writing within 30 days and provide the following:
		  ○ Details and result of the investigation into the cause of the exceedance
		  ○ Action(s) that have been taken
		  ○ Action(s) to be taken including set timeframes
			Confirmatory sampling to be conducted immediately following detection.
			Management actions to commence once trigger value exceedance has been confirmed.

29. The works approval holder must, within 7 days of becoming aware of a 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;

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

(c) if any environmental impact 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 occurring again.

Records and reporting (general)

30. 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.

31. 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 and inspection programmes undertaken in accordance with condition 21 and 24; and

(d) complaints received under condition 30.

32. The books specified under condition 31 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 12 have the meanings defined.

Table 12: Definitions

Term	Definition
ACN	Australian Company Number.
AEP	Annual Exceedance Probability.
ANZECC & ARMCANZ 2000	means the most recent version and relevant parts of the *Australian and New Zealand guidelines for fresh and marine water quality – Volume 3 – Livestock drinking water guidelines* (Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australian and New Zealand) available at ANZECC & ARMCANZ (2000) guidelines (waterquality.gov.au).
Assessment of Site Contamination NEPM	means the *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended from time to time.
AS 1289.5.2.1-2003	means the Australian Standard, Methods of testing soils for engineering purposes *Method 5.2.1: Soil compaction and density tests-Determination of the dry density/moisture content relation of a soil using modified compactive effort*.
AS 1289.5.4.2-2007	means the Australian Standard, Methods of testing soils for engineering purposes *Method 5.4.2: Soil compaction and density tests – Compaction control test – Assignment of maximum dry density and optimum moisture content values.*
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.*
ASTM D5092/D5092M-16	means the ASTM international standard for *Standard practice for design and installation of groundwater monitoring wells* (Designation: ASTM D5092/D5092M-16), as amended from time to time.
averaging period	means the time over which a limit is measured or a monitoring result is obtained.
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 info@dwer.wa.gov.au
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.
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	high density polyethylene.
mbgl	metres below ground level.
m/s	metres per second.
µS/cm	micro Siemens per centimetre.
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

Term	Definition
	analysis.
premises	the premises to which this works approval applies, as specified at the front of this works approval 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.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
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, geology or equivalent and has a minimum of five 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.
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.
TSF4	means Tailings Storage Facility 4.
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).

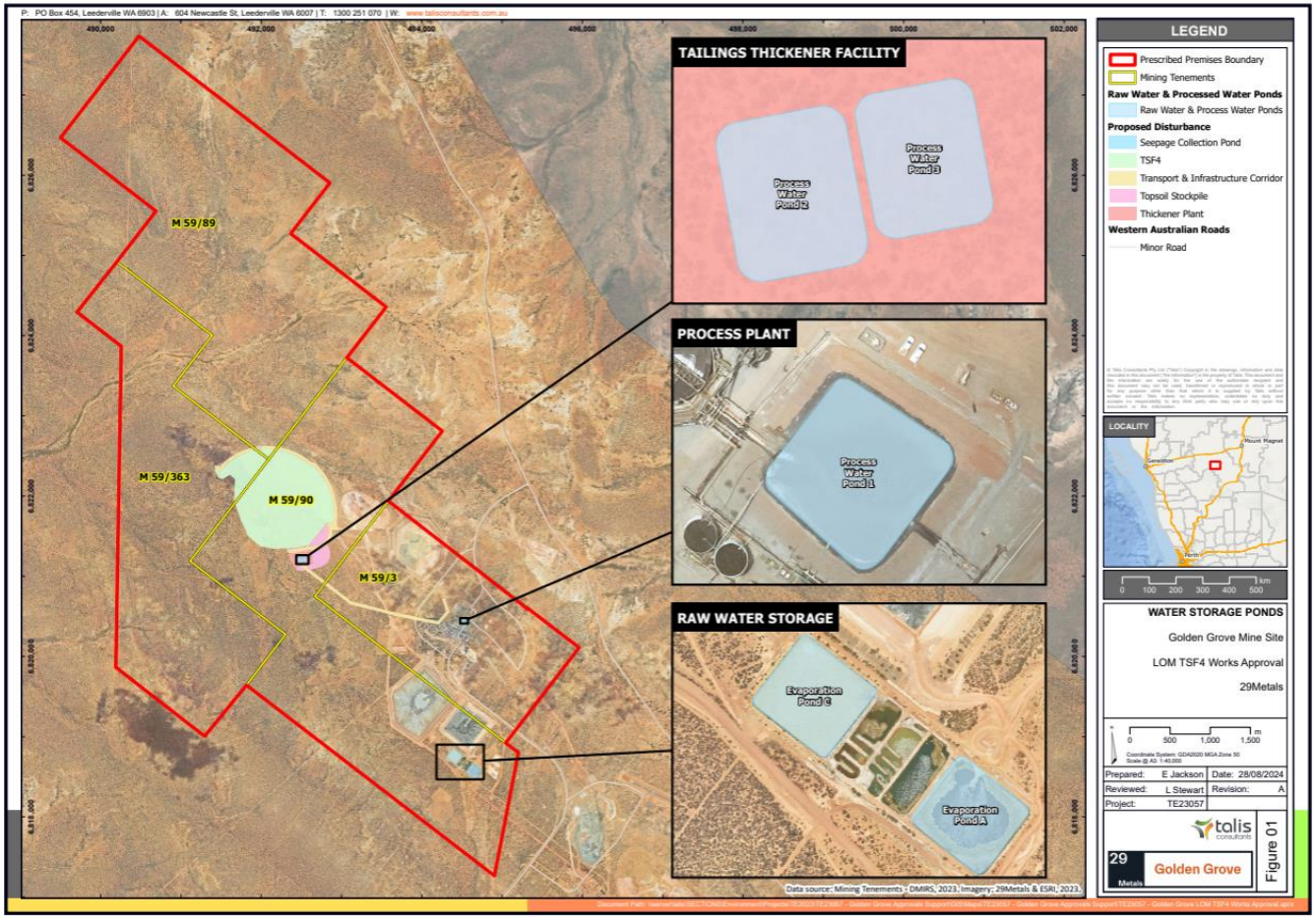

Figure 1: Map of the boundary of the prescribed premises

Infrastructure maps

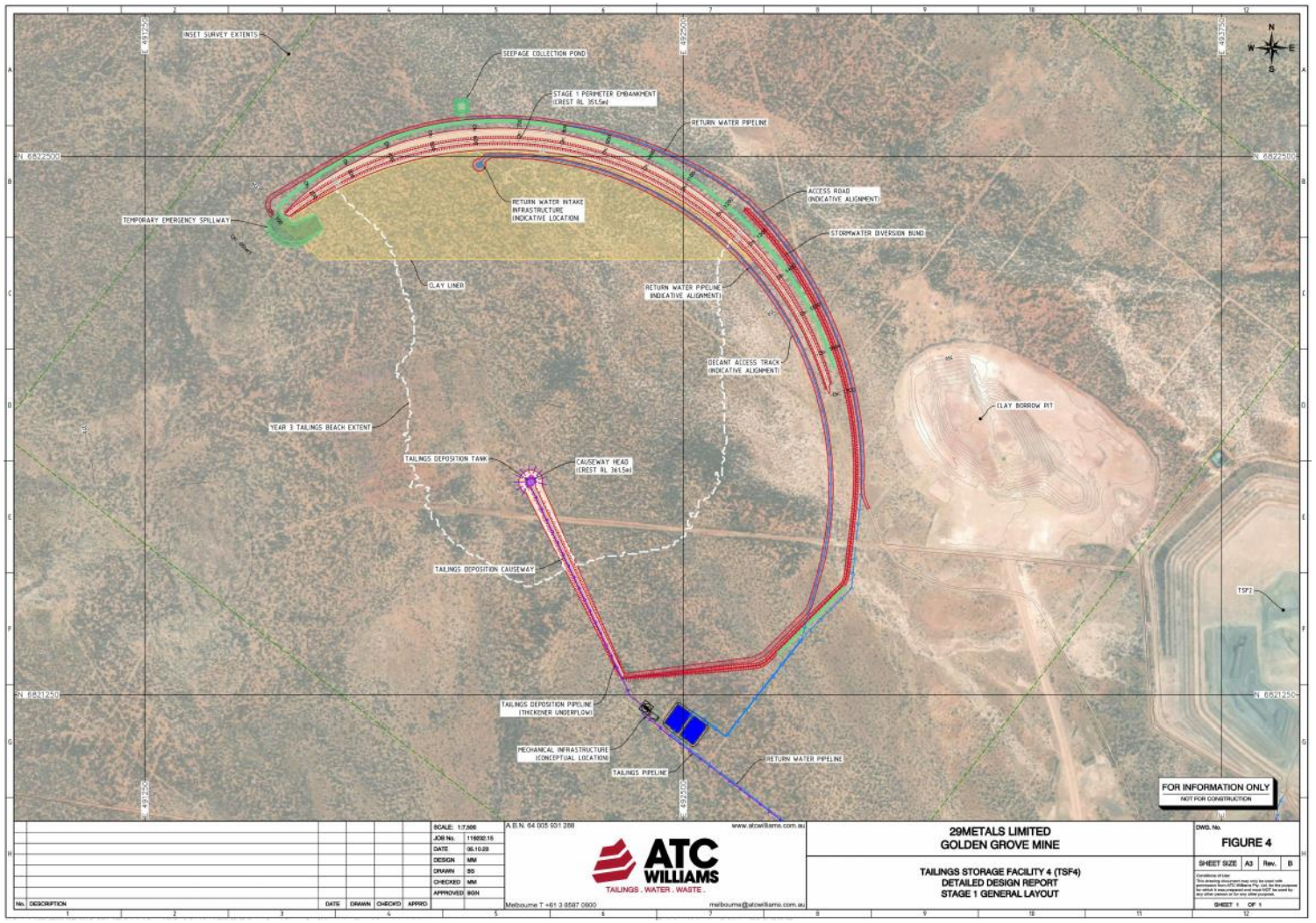

Figure 2: Stage 1 TSF4 design layout

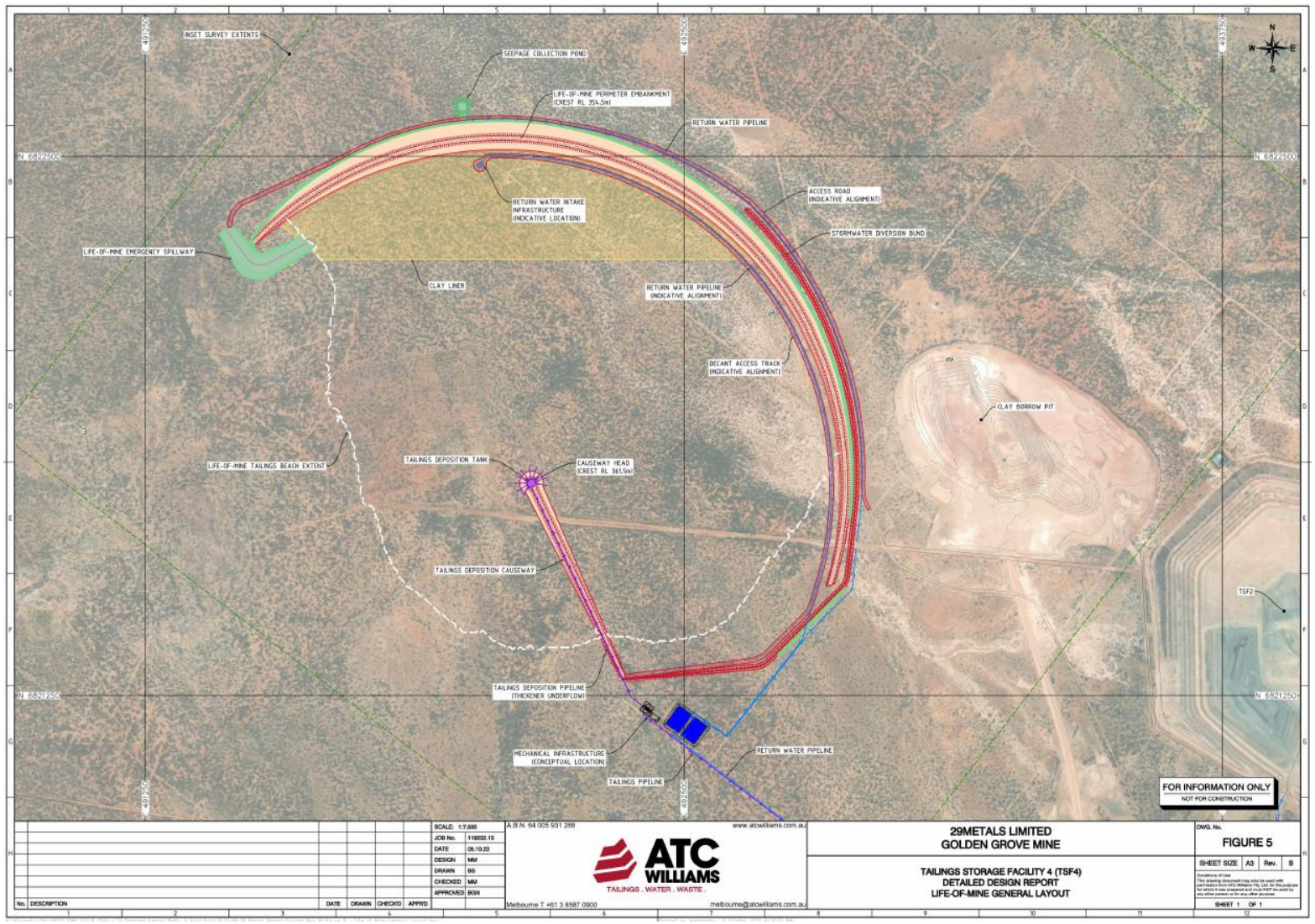

Figure 3: Stage 2 TSF4 design layout

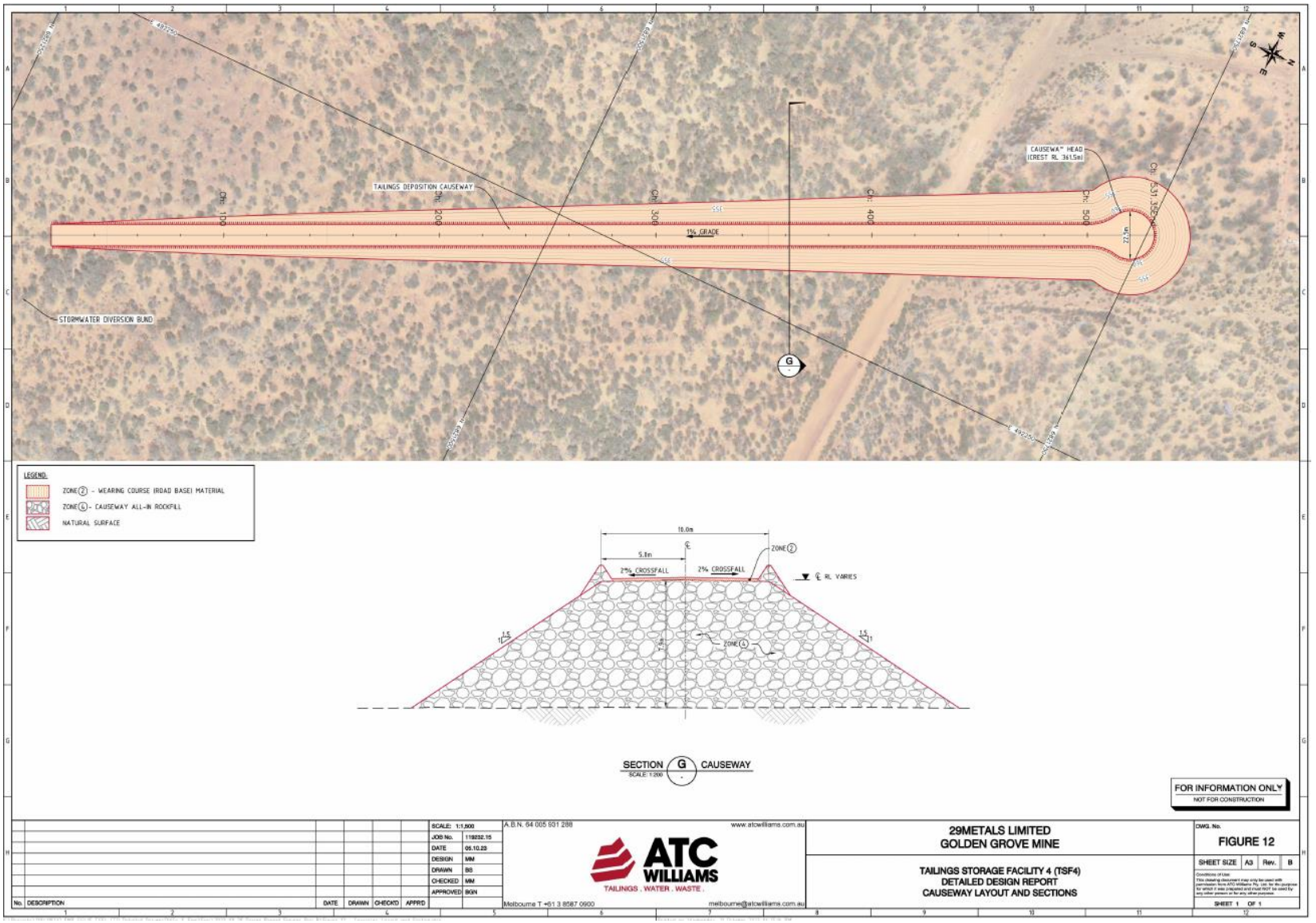

Figure 4: TSF4 causeway

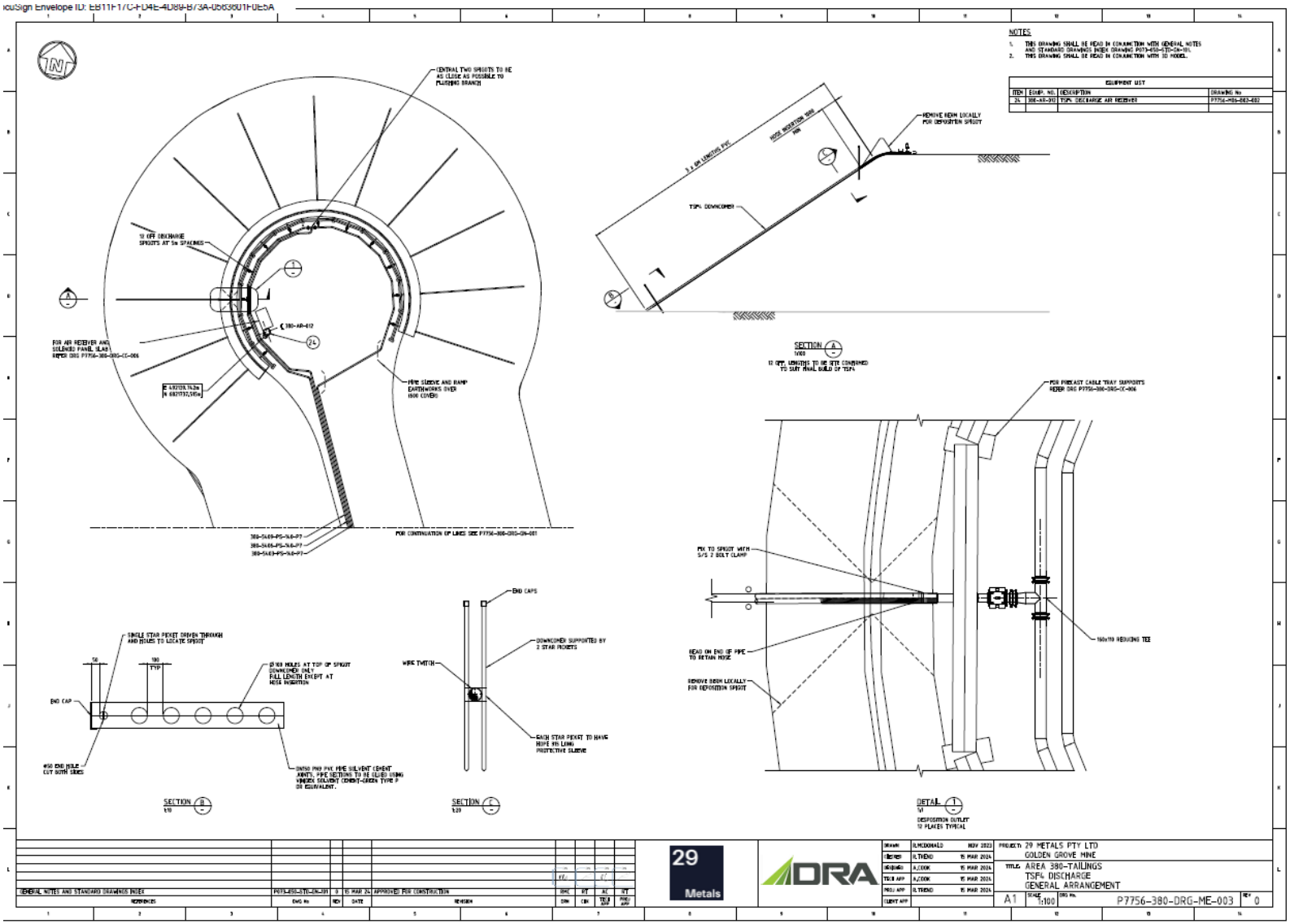

Figure 5: TSF4 discharge general arrangement

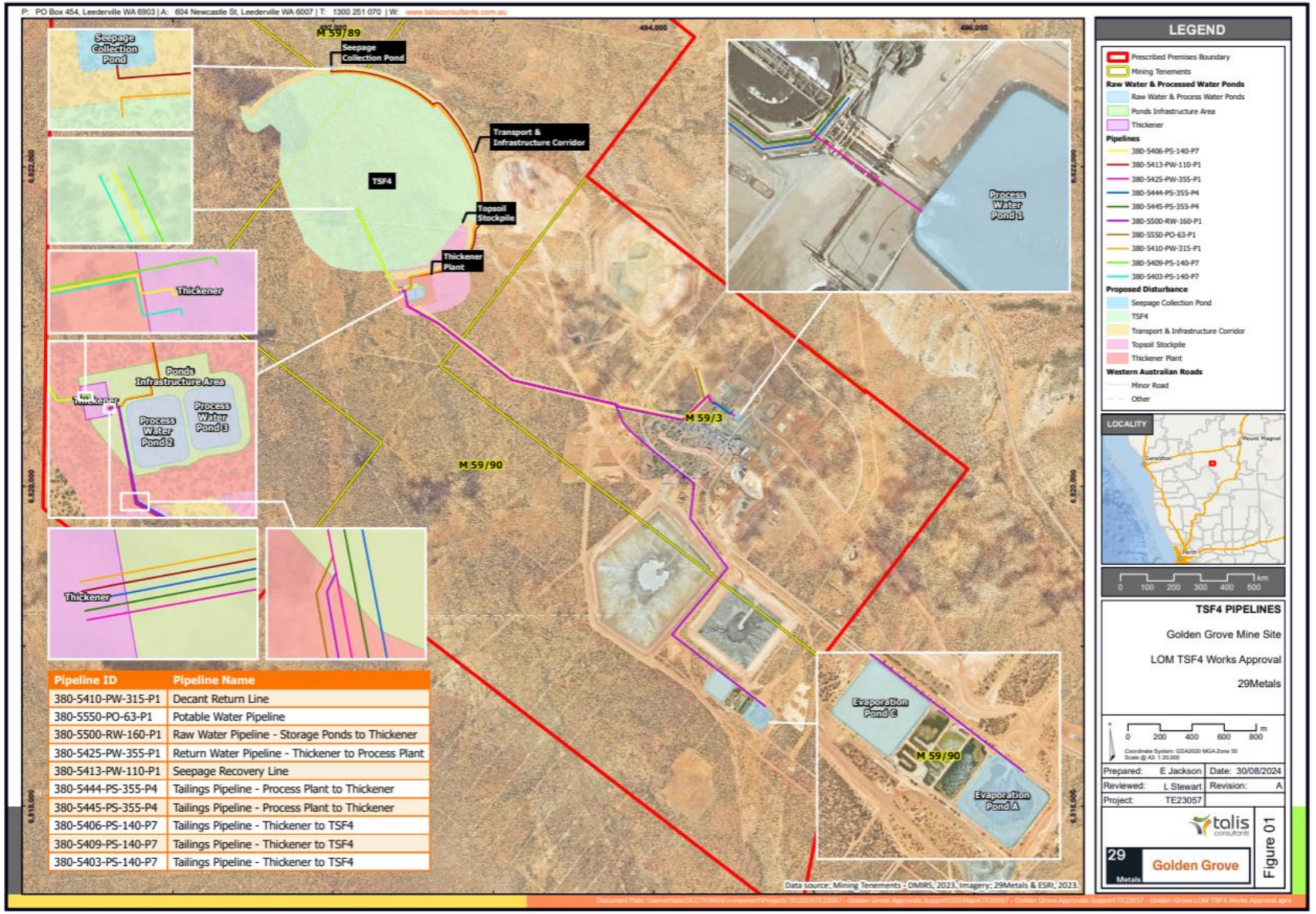

Figure 6: TSF4 pipelines

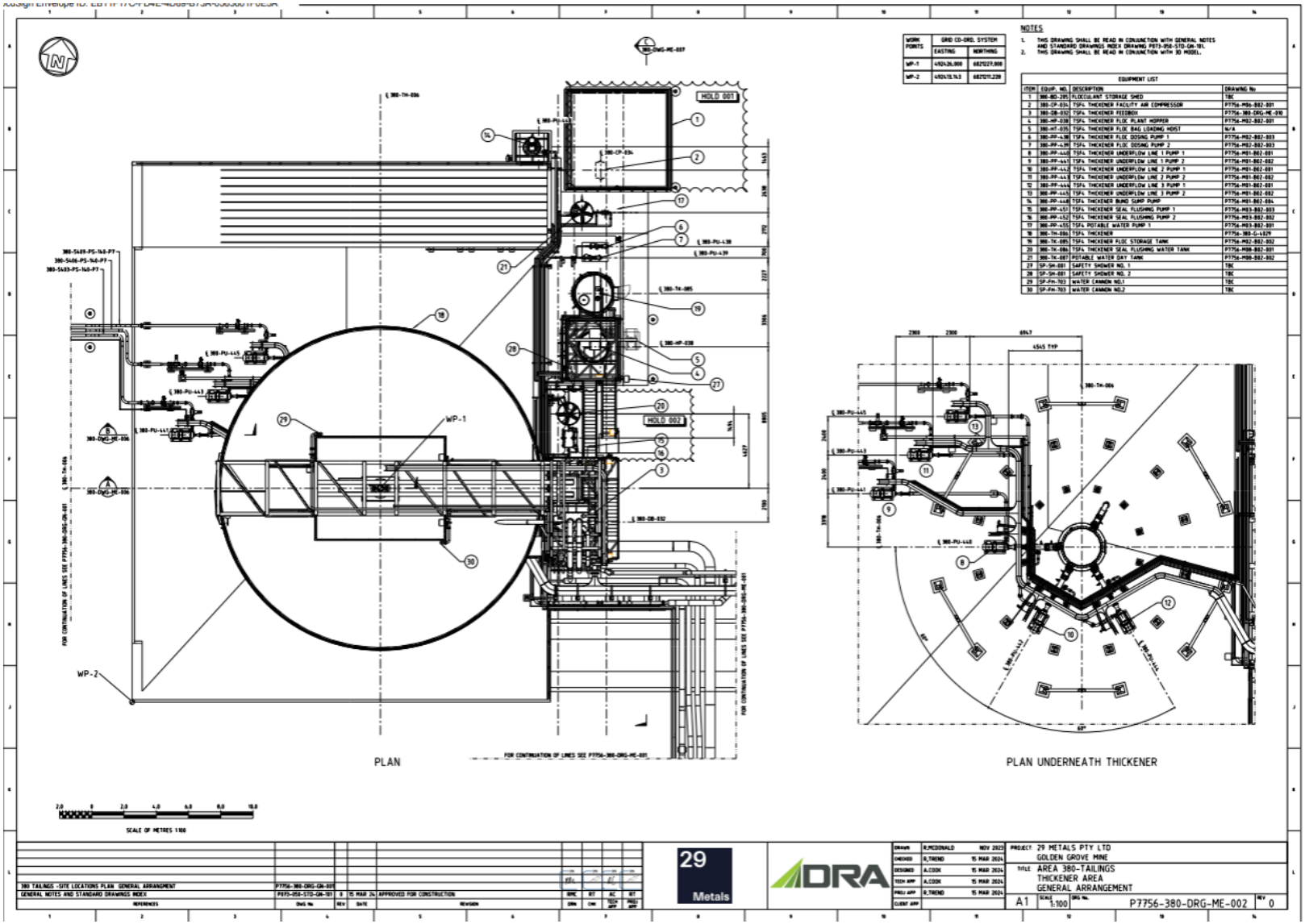

Figure 7: Thickener Plant layout

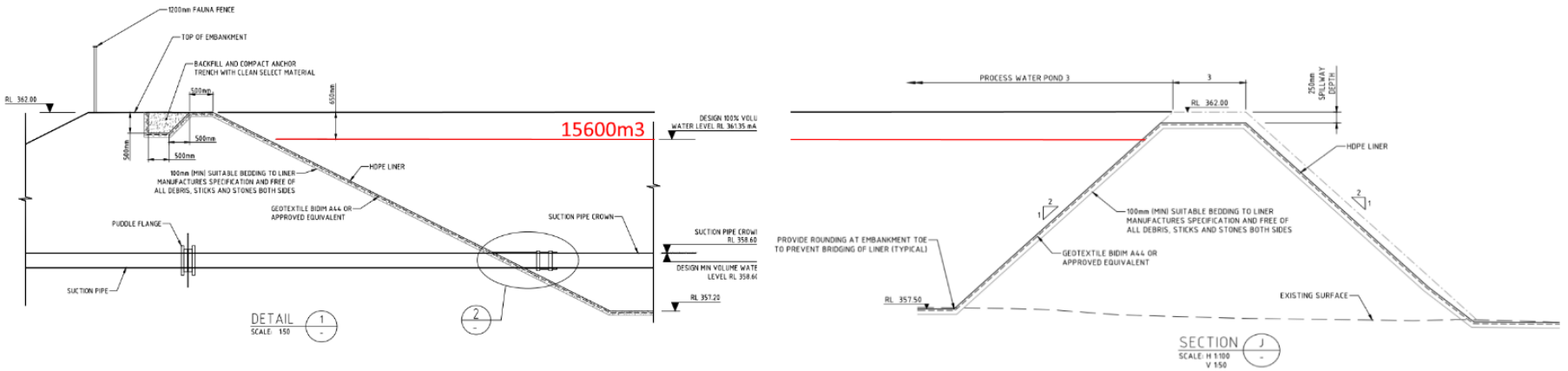

Figure 8: Process Water Ponds 2 and 3

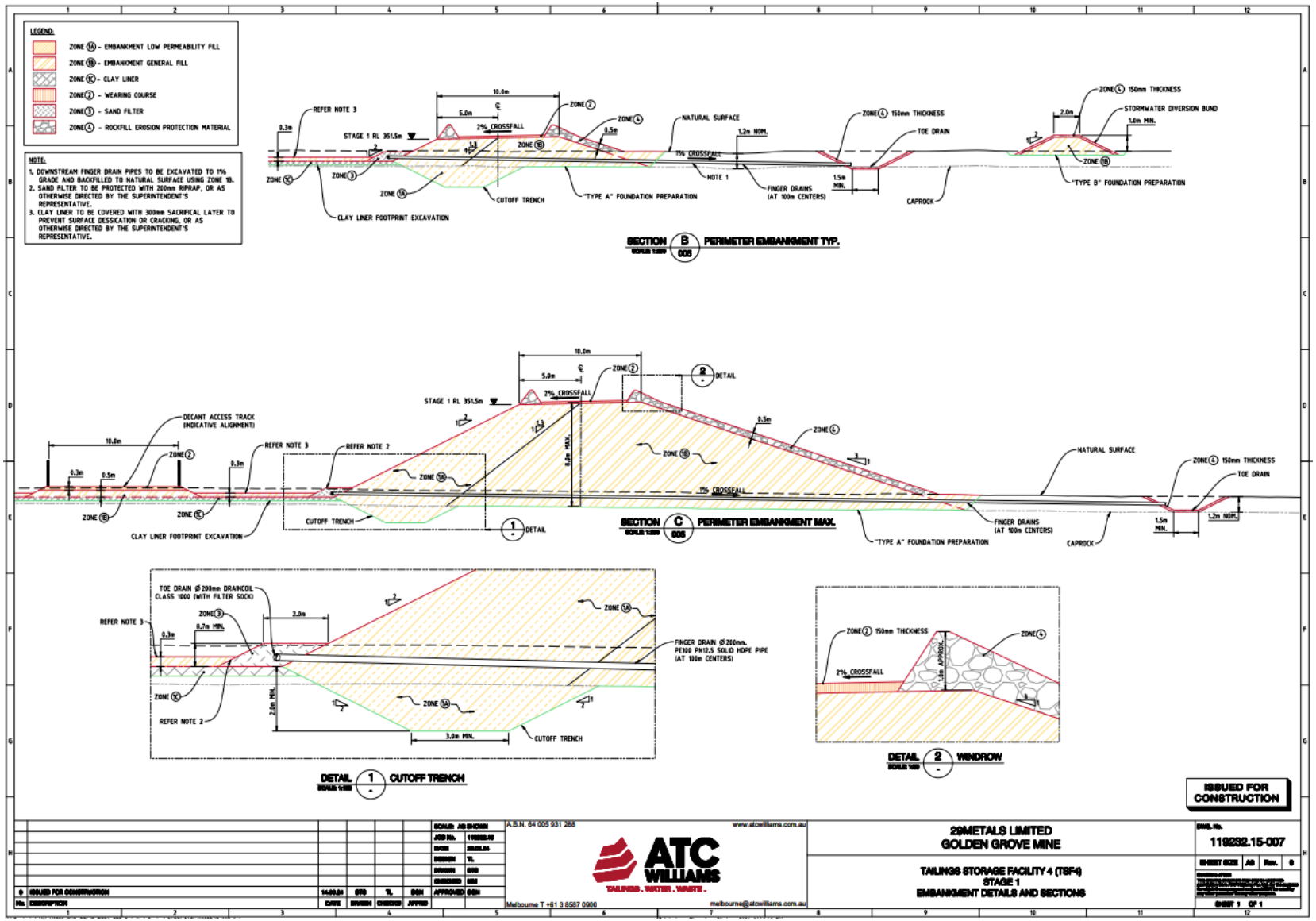

Figure 9: Design cross section of the TSF4 embankment

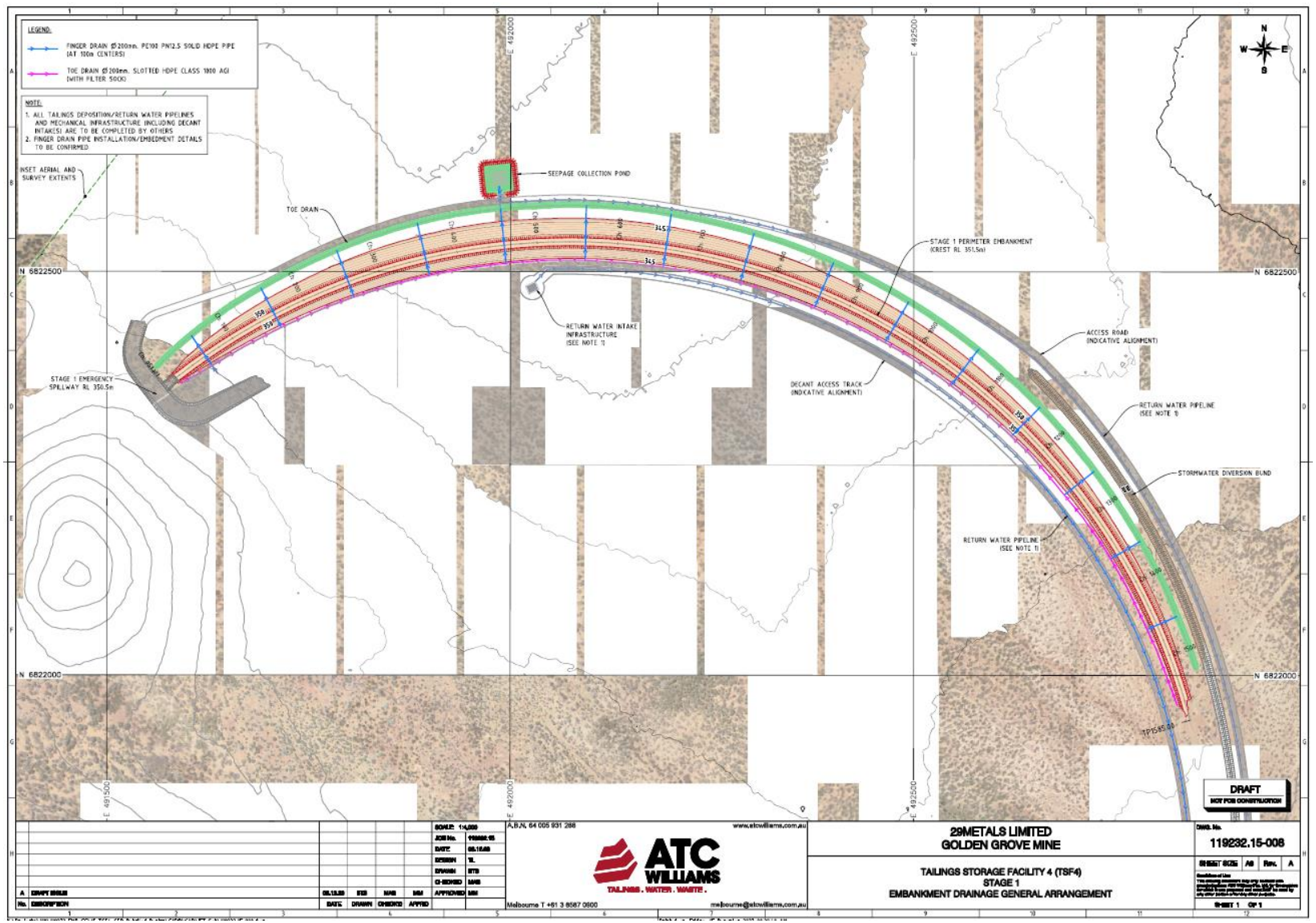

Figure 10: TSF4 embankment drainage

Monitoring and seepage collection bores

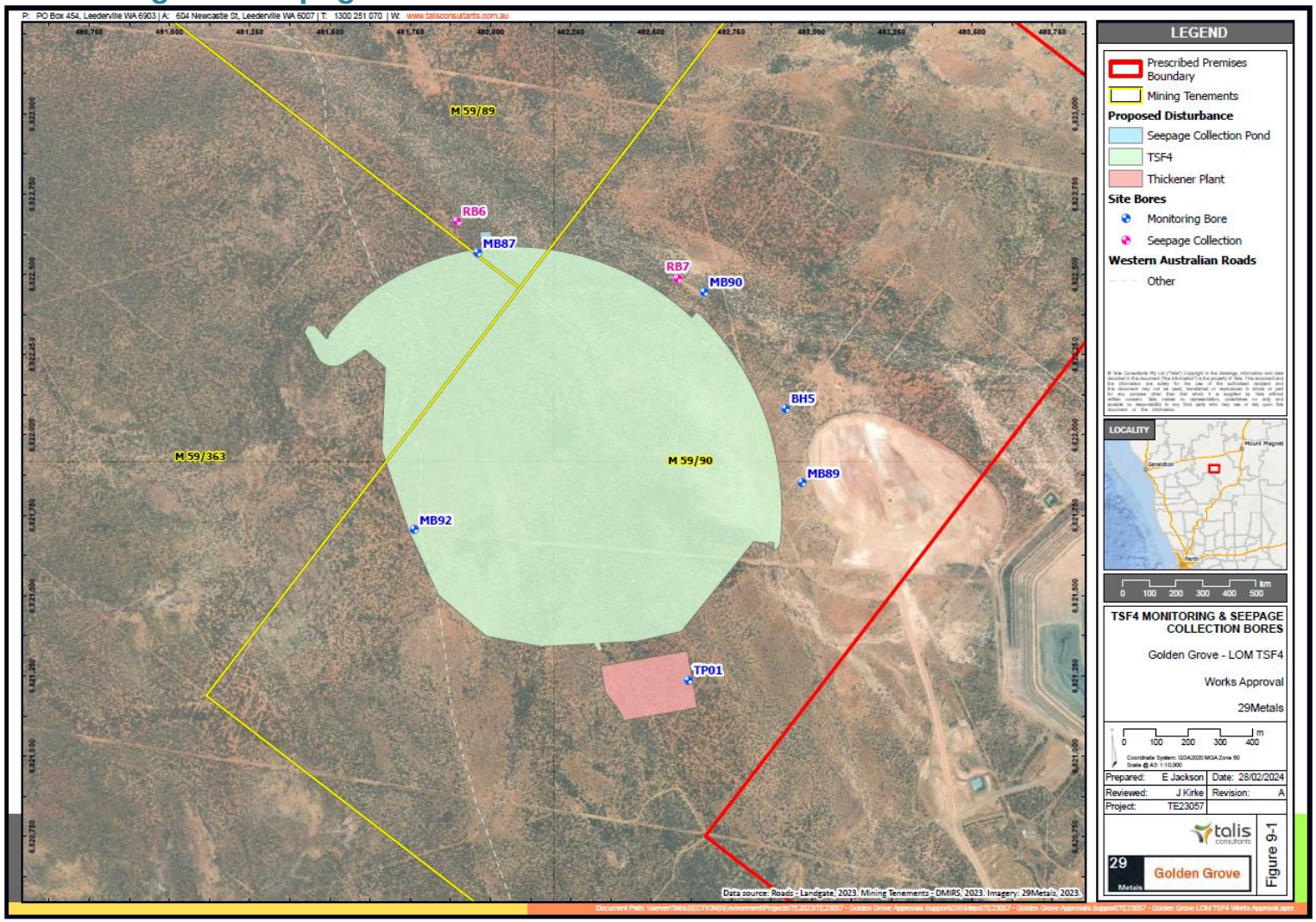

Figure 11: Groundwater monitoring and seepage collection bore locations

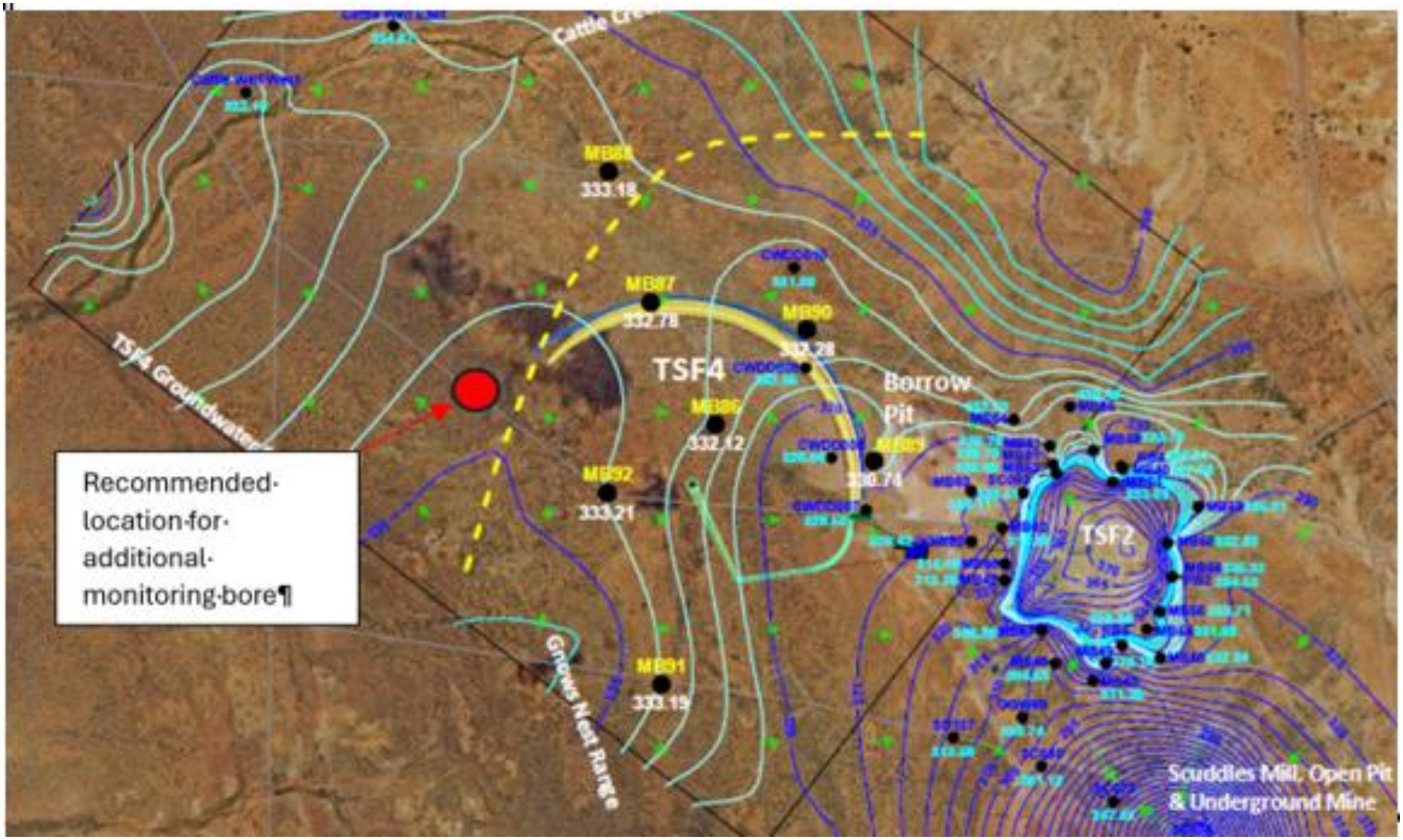

Figure 12: Recommended location (shown by red dot) for additional monitoring bore