Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W2961/2025/1
Applicant	Aragon Resources Pty Ltd
ACN	114 714 662
File number	APP-0028381
Premises	Fortnum Gold Operations L52/172, M52/5, M52/6, M52/95, M52/96, M52/98, M52/99, M52/125, M52/132 and M52/133 PEAK HILL WA 6642 As defined by the premises maps attached to the issued works approval
Date of report	26/08/2025 **(FINAL)**
Proposed Decision	Intent to grant works approval

Table of Contents

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W2961/2025/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary and overview of premises

Aragon Resources Pty Ltd (applicant), a wholly owned subsidiary of Westgold Resources Limited, operates the Fortnum Gold Operations (Premises) encompassing the Fortnum and Horseshoe Projects. The Premises is approximately 150 km north-west of Meekatharra.

On 10 April 2025, the applicant submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is for the following:

- Tailings Storage Facility (TSF) 2 raise from 520 metres (m) Reduced Level (RL) to RL525m via staged lifts.
- Construction and operation of the new Callies In-Pit TSF (CPTSF) within the existing Callies pit.

The premises relates to category 5 and the assessed design capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which is defined in works approval W2961/2025/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W2961/2025/1.

2.2.1 Overview of Premises TSFs

Seven (7) TSFs are approved at the Premises as shown in Figure 1:

1. Nathan's TSF (decommissioned and rehabilitated);
2. TSF1 (decommissioned and rehabilitated);
3. TSF2 (currently active with 22 months remaining capacity);
4. Nathans In-pit TSF (NPTSF) (approved but not constructed);
5. Tom's In-pit TSF (decommissioned);
6. El Dorado In-pit TSF (decommissioned); and
7. TSF3 (approved but not constructed).

The new CPTSF, the subject of this report, will be the eighth.

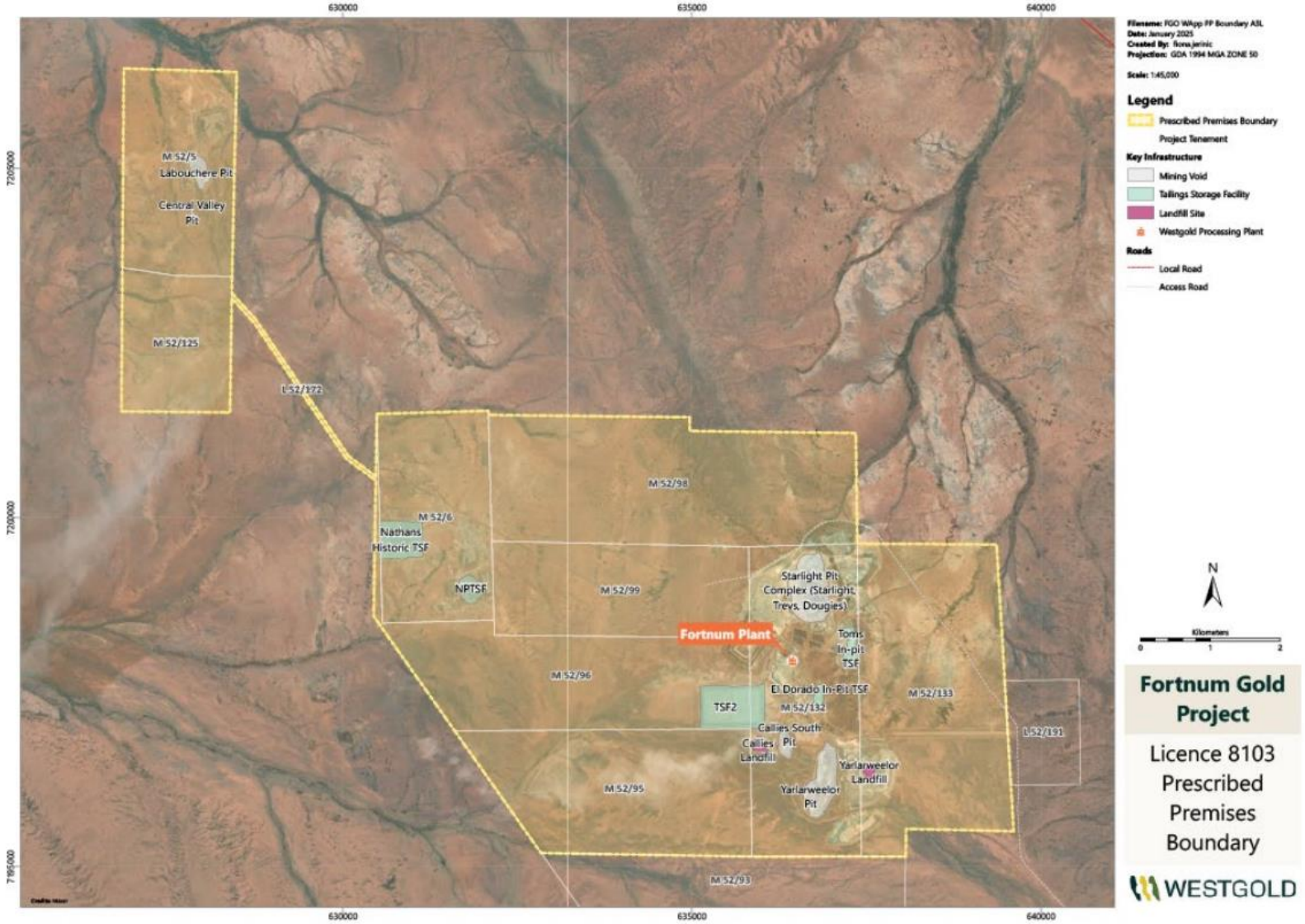

Figure 1: Location of the TSF2 and CPTSF (shown as Callies South Pit)

2.2.2 TSF2

TSF2 operates as the active TSF at the Premises and is located approximately 1 km south-west of the processing plant (labelled as Fortnum Plant in Figure 1).

The current layout of TSF2 is shown in Figure 2 and comprises Cell 1 and Cell 2.

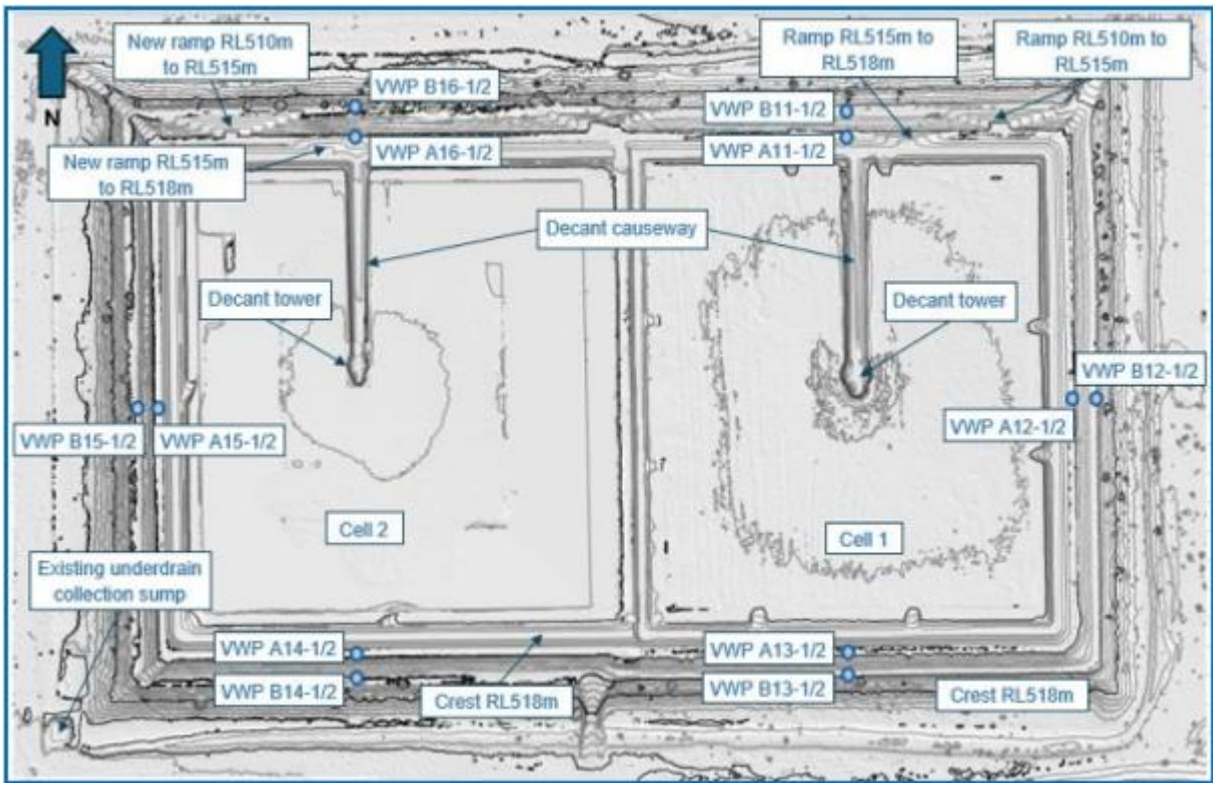

Figure 2: TSF2 current layout

TSF2 raises

The applicant has approval under existing Licence L8103/1989/3 to complete upstream lifts to TSF2 Cell 1 and Cell 2 to RL520m and is seeking approval to increase the final height to RL525m (this report).

TSF2 is scheduled to reach capacity in December 2026 at the current approved final height of RL520m. With the proposed increase of final height to RL525m, it is anticipated that TSF2 will not reach capacity until 2028.

The proposed staged raises of TSF2 to RL525m will have a cumulative storage capacity of 2.4 million tonnes (Mt), to accommodate an annual tailings deposition rate of 850,000 tonnes per annum (tpa) at a dry density of 1.4 tonnes per cubic metre (t/m^3).

The applicant is proposing to raise TSF2 in stages as shown in Table 1 using mechanically compacted dry tailings. While deposition in Cell 2 continues the applicant will raise the Cell 1 wall by an additional 1.5 m. Cell 2 wall will then be raised by 3.5 m. Thereafter, again alternately staging deposition and raising of the cell embankments a final 3.5 m to a final height of RL525m.

Table 1: Proposed construction timeframe for TSF2 raises

Stage	Cell & Raise Description	Construction Period	Commissioning Target
Stage 1B	Cell 1 embankment raise by 1.5 m from RL520m to RL521.5m	December 2025	February 2026
Stage 2	Cell 2 embankment raise by 3.5 m from RL518m to RL521.5m	May 2026 – August 2026	November 2026
Stage 3	Cell 1 embankment raise by 3.5 m from RL521.5m to RL525m	March 2027 – June 2027	September 2027
Stage 4	Cell 2 embankment raise by 3.5 m from RL521.5m to RL525m	October 2027 – January 2028	April 2028

Perimeter embankments of the further raises will have a tentative geometry comprising a flattened downstream slope of 1V:4.5H, and upstream slope of 1V:2H and a minimum crest width of 6 m. This configuration will maintain an overall slope of 1V:4H on the facility for the final landform.

Selected mine waste rock (Rip-Rap) will be used to provide an erosion protection capping on the downstream slope of the perimeter embankments.

Tailings deposition (spigots); tailings delivery and return water pipelines

Tailings are conveyed to TSF2 via a high-density polyethylene (HDPE) pipeline with deposition occurring to one cell at a time. Tailings are deposited via multiple spigot points around the embankment crest, forming beaches with an approximate 1% slope.

As each raise is constructed, the spigot system will require raising to maintain appropriate discharge height and functionality. The existing spigot points and pipe system will be removed and reinstalled after each TSF2 raise (Westgold 2025b).

The tailings and return water pipelines for TSF2 are existing and will be reused following construction of the TSF2 raises. Tailings delivery and return water pipelines will utilise the existing dewatering pipeline corridor. All flow meters are in place and working correctly.

Current tailings delivery and return water pipelines will need to be adjusted (e.g. repositioned or elevated) as the TSF2 embankments are raised. Only localised modifications will occur at the discharge points to TSF2, no change to the existing pipeline corridor for the tailings and return water line is expected (Westgold 2025b).

The return water line from TSF2 will be connected to the HDPE lined process water pond to be used within the processing plant.

Decant facility

The existing decant causeway is to be centreline raised with each lift, including raising the existing decant tower with mine waste rock material.

Currently Cell 1 uses a central decant facility, while Cell 2 is operating with a turret intake system. The applicant is proposing with the next raise of Cell 2 to remove the turret system and convert it to a central decant facility. This change is expected to improve water quality of the decant water received from Cell 2 (Westgold 2025b).

Underdrainage system

TSF2 has an existing underdrainage system, comprising an upstream toe drain and filter material. The underdrainage network is gravity driven with outfalls connected to an external recovery sump located to the southwest of Cell 2. Any seepage water is then pumped back to

the process water ponds via the decant facility to be reused through the processing plant.

2.2.3 Existing Callies Pit

The current layout of Callies pit is shown in Figure 3. All planned mining works in Callies pit has been completed and no further mining will be carried out. The pit has been mined to a depth of approximately 55 m below ground level (mbgl) or RL445m. The water level in Callies pit is at approximately RL470m (roughly 30 m below the pit rim level). Callies pit is currently being used as a water storage facility with approximately 223,960 kilolitres (kL) of water in the pit.

The applicant has stated that prior to construction and discharge activities at the CPTSF, this stored water will be pumped to the process water pond for use in the processing facility. There will be no discharge to the environment.

Figure 3: Callies pit current layout

2.2.4 CPTSF

The CPTSF will serve as secondary tailings storage for the processing plant along with NPTSF when capacity in TSF2 is reached.

CPTSF will be built within the existing Callies pit and cover approximately 11.40 hectares (ha) and reach a maximum height of RL500m. CPTSF will be a below ground facility with no perimeter embankments. With a projected storage capacity of 2 Mt, the CPTSF will accommodate tailings for 2.4 years based on an annual ore processing rate of 850,000 tpa and an in-situ tailings density of 1.4 t/m^3.

The CPTSF is located approximately 1.2 km south of the processing plant. Tailings will be transported from the processing plant to the CPTSF via a reinforced HDPE pipeline. The tailings deposition method will be subaqueous initially, converting to sub-aerial deposition once the tailings level is higher than the infiltration water level in the pit. Tailings will be deposited via four spigots around the CPTSF rim to optimise deposition and facilitate controlled discharge. Water will be recovered from the decant pond and returned to the process water pond via the decant facility and return water pipeline for recycling within the processing circuit.

2.2.5 Tailings Characterisation

Westgold 2020 states *"Acid-base accounting results indicate that all of the tailings samples were classified as Non-Acid Forming (NAF)."*

Key test results and analysis of tailings have indicated that (Westgold 2020):

- Total Sulphur content ranged from 0.04 to 0.68% with a median of 0.22%;
- Acid Neutralising Capacity (ANC) ranged from 1.6 to 69 kg Sulfuric acid (H_2SO_4), indicating that tailings has buffering capacity;
- Net Acid Producing Potential (NAPP) values were negative, indicating that tailings have sufficient buffering capacity to neutralise any acid production;
- Net Acid Generation pH (NAG pH) test results indicated that under strongly-oxidising conditions of NAG-test work, samples did not acidify;
- Total metal analysis (on the Global Abundance Index (GAI)) revealed Mercury, Bismuth, Molybdenum and Selenium to be significantly enriched;
- Total metal analysis identified Chromium, Iron, Arsenic, Cobalt, Copper and Lead to be slightly enriched;
- Leach testing results showed all metals to be below *ANZECC & ARMCANZ 2000* Livestock Drinking Water limits; and
- When compared to *ASC NEPM* limits, only copper exceeds the Ecological Investigation Limit (EIL) but it does not exceed the Health-based Investigation Limit (HIL).

A representative process solution water sample from the Premises was collected in February 2024. The water quality characteristics as shown in Table 2 are typical of the tailings water expected within the CPTSF and TSF2.

Table 2: Premises tailings solution water quality

Analyte Name	Units	Result
pH**	pH Units	10.8
Conductivity @ 25 C	µS/cm	3300
Total Dissolved Solids Dried at 175-185°C	mg/L	2100
Arsenic	µg/L	8
Antimony	µg/L	5
Boron	µg/L	640
Cadmium	µg/L	0.2
Chromium	µg/L	1
Cobalt	µg/L	44
Copper	µg/L	16000
Iron	µg/L	190
Lead	µg/L	<1
Manganese	µg/L	<1
Nickel	µg/L	65
Selenium	µg/L	86
Thallium	µg/L	<1
Zinc	µg/L	110
Mercury	mg/L	<0.00005
Sodium, Na	mg/L	580
Potassium, K	mg/L	35
Calcium, Ca	mg/L	24
Magnesium, Mg	mg/L	<0.1
Total Hardness by Calculation	mg CaCO3/L	59
Carbonate Alkalinity as CO3	mg/L	83
Bicarbonate Alkalinity as HCO3	mg/L	<5
Sulphate, SO4	mg/L	380
Chloride, Cl	mg/L	520
Nitrate Nitrogen, NO_3 as N	mg/L	18
Nitrite, NO_2 as NO_2	mg/L	2.6
Nitrate, NO_3 as NO_3	mg/L	81
Total Cyanide	mg/L	98
Weak Acid Dissociable Cyanide (WADCN)	mg/L	91
Hexavalent Chromium, Cr6+	mg/L	0.011

The analysis indicates an alkaline pH, brackish total dissolved solids (TDS), and low levels of heavy metals across all measured parameters (Westgold 2025a).

2.2.6 Seepage

TSF2

Westgold 2025a states groundwater seepage from TSF2 is predicted to be low, with any seepage plumes expected to be slow moving with velocities on the order of 1 m per year to 10 m per year.

TSF2 has an existing underdrainage system – refer to section 2.2.2.

CPTSF

Westgold 2025a states that seepage is expected to be minimal, primarily occurring during the initial operational phase while the tailings level is below the water table. Initially there will be low seepage rates (less than 350 m^3/day) during active tailings deposition due to the low

permeability of the pit walls. As the tailings deposition progresses, the sealing of water -bearing fractures will further reduce seepage. Once tailings deposition ceases, groundwater levels will gradually return to pre-mining conditions.

2.3 Department of Mines, Petroleum and Exploration (DMPE)

The current Fortnum Gold Operations Mining Proposal, Revision 8.2 (Registration ID 126920) was approved by the previous Department of Energy, Mines, Industry and Safety (DEMIRS) on 17 January 2025.

The department (DWER) referred this application to DEMIRS on 05 June 2025 for advice on the geotechnical aspects of the proposed CPTSF and proposed lifts to TSF2.

On 03 July 2025, the newly formed DMPE provided the following:

- DMPE do not have any specific comments on the works approval (W2961/2025/1).
- The works described are consistent with the Mining Proposal that is currently under assessment (Registration ID 500572 Revision 9).
- As part of the Mining Proposal assessment, a DMPE Geotechnical Engineer will review the Tailings Storage Facility Design Report and ensure it is appropriate.

The applicant must ensure that CPTSF and TSF2 final raise height to RL525m, is approved by DMPE (Registration ID 500572 Revision 9) prior to the initiation of construction and discharge activities associated with this infrastructure.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and commissioning / operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction activities associated with CPTSF infrastructure Earthworks associated with TSF2 raises Vehicle movement	Air / windborne pathway	• Water cart will be on-site for dust suppression.
Sediment laden stormwater		Overland runoff	• An abandonment bund wall exists around the CPTSF to prevent stormwater ingress. • Surface water diversion bunds, waste rock dumps and the pit abandonment bund will serve as a barrier to surface water flow across the CPTSF and TSF2 footprint.
Operation of TSF2			
Dust from TSF surfaces	Tailings surface and embankment walls	Air / windborne pathway	• On-going monitoring conducted.
Tailings supernatant containing dissolved solids, metals and metalloids	Deposition of tailings into TSF2	Seepage	• Water is recovered from the decant pond formed around the central decant ring. • Decant pond located centrally and at least 50 m away from the embankments. • Existing underdrainage on the western wall to capture seepage that flows into the seepage pond. • Seven existing monitoring bores (Creek Bore, Junction Bore, MB1, MB2, MB3, MB4 and MB5) installed around TSF2 (as shown in Figure 4).
Tailings and contaminated water		Discharges to land / overtopping of TSF2	• Multiple spigot points (constructed of HDPE) around the perimeter embankment crest to allow controlled tailing deposition and formation of tailings beaches with an approximate 1% slope. • Tailings deposition occurs from all cardinal directions in a clockwise sequence containing the water around the central decant. • A central decant facility to recover supernatant water for recycling at the processing facility. • The decant facility equipped with a pump. The pump to be fixed within a central decant ring. The anticipated return water flow is 1,600 m^3 to 2,400 m^3

Emission	Sources	Potential pathways	Proposed controls
			per day. • Provision of a minimum of 0.5 m 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 for the 1% Annual Exceedance Probability (AEP) 72-hour event of 210 mm, for a total freeboard of 0.5 m. • Regular visual inspections of freeboard levels and perimeter embankments. • An annual technical review will assess infrastructure integrity for signs of settling, cracking or erosion. • High-resolution surveys using an unmanned aerial vehicle conducted to monitor surface conditions of the TSF.
Tailings and return water	Tailings delivery and return water pipelines	Discharges to land	• HDPE tailings delivery and return water pipelines. • Tailings delivery and return water pipelines to utilise the existing dewatering pipeline and pipeline corridor. • Pipelines constructed within a v-drain, which will act as primary containment. • Flowmeters installed on both tailings delivery and return water pipelines. • Flowmeters regularly tested and calibrated in accordance with manufacturer's instructions. • Daily inspections conducted on pipelines, pumps, valves and equipment to identify any operational issues, leaks, or wear.
Commissioning and Operation of CPTSF			
Dust from TSF surfaces	Tailings surface and embankment walls	Air / windborne pathway	On-going monitoring conducted.
Tailings supernatant containing dissolved solids, metals and metalloids	Deposition of tailings into CPTSF	Seepage	• Water is to be recovered from the decant pond. • Maintain a small decant pond (target maximum 10% of CPTSF surface area) located at the decant pump. • Four monitoring bores (CMB1, CMB2,

Emission	Sources	Potential pathways	Proposed controls
			CMB3 and CMB4) proposed to be installed around the CPTSF perimeter (as shown in Figure 4).
Tailings and contaminated water		Discharges to land / overtopping of CPTSF	• Tailings deposited via four spigot points (constructed of HDPE) around the pit rim to allow controlled tailing deposition and formation of tailings beaches with an approximate 1% slope. • Initially, tailings will be deposited from the south spigot to establish a decant pond near the access ramp. • Subsequently, a clockwise rotation of spigot usage will be employed to distribute tailings evenly and gradually displace the decant pond along the access ramp as the pit fills. • A decant facility comprising of a floating shallow water suction intake (such as a Turret) that connects to a pump arrangement installed to extract water from the supernatant within the CPTSF decant pond for return to the processing facility. The anticipated return water flow is 1,500 m^3 to 2,400 m^3 per day. • As tailings levels increase, the pump will be repositioned along the access ramp. • Provision of a minimum of 0.5 m 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 for the 1% AEP 72-hour event of 210 mm, for a total freeboard of 0.5 m. • Regular visual inspections of freeboard levels and perimeter embankments.
Tailings and return water	Tailings delivery and return water pipelines	Discharges to land	• HDPE tailings delivery and return water pipelines. • Tailings delivery and return water pipelines to utilise existing dewatering pipeline corridor. • Pipelines constructed within a v-drain, which will act as primary containment. • Scour pits installed as required at strategic locations along the pipeline route to provide secondary containment. • Scour pits designed to hold any accumulated spill volume sufficient for a

Emission	Sources	Potential pathways	Proposed controls
			period prior to detection during routine inspections. • Flowmeters installed on both tailings delivery and return water pipelines to record the volume of water discharged to and returned from the CPTSF, data will be received via wireless telemetry and loss of flow will trigger inspection of infrastructure. • Flowmeters regularly tested and calibrated in accordance with manufacturer's instructions. • Daily inspections conducted on pipelines, pumps, valves and equipment to identify any operational issues, leaks, or wear.

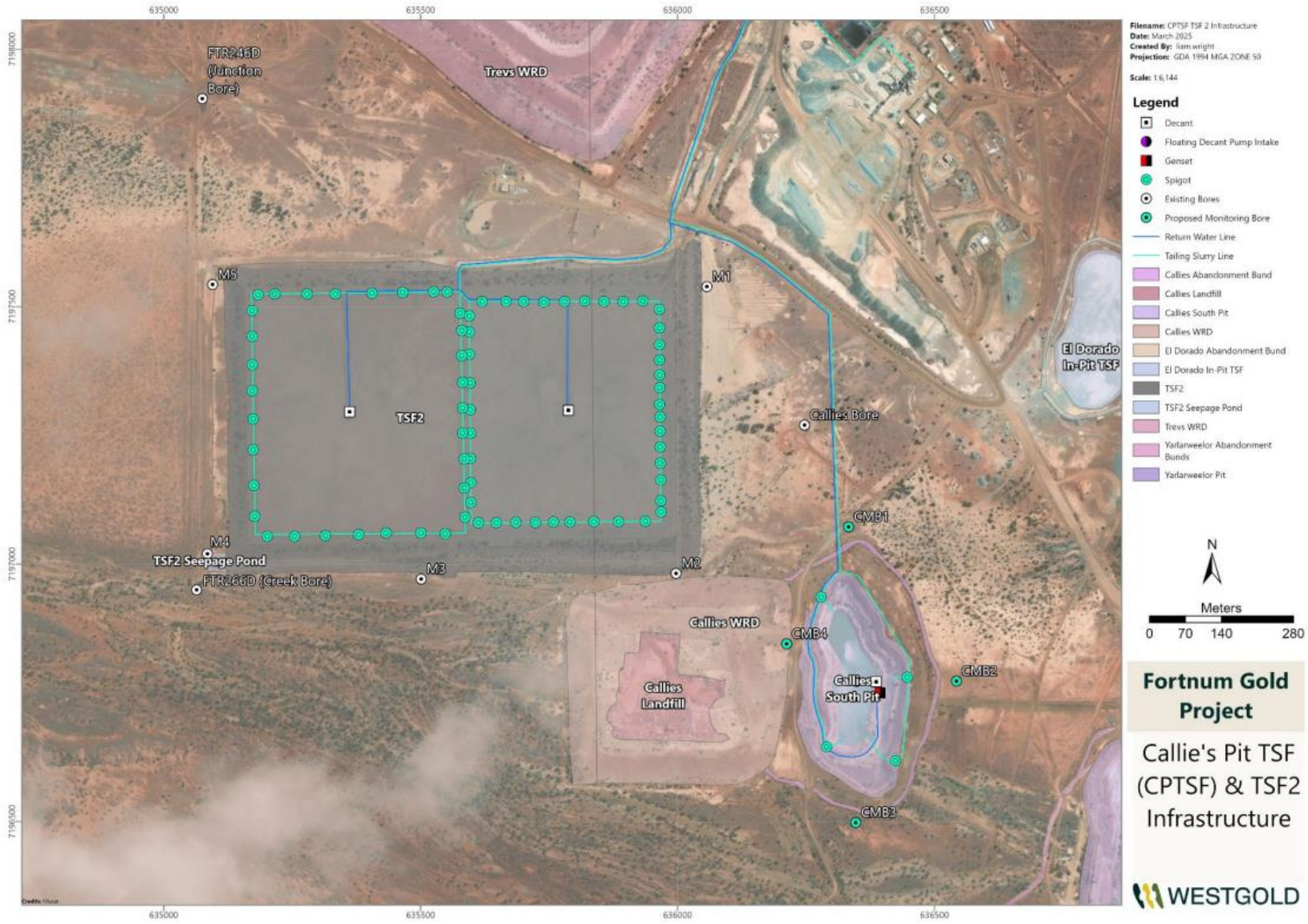

Figure 4: TSF2 existing monitoring bores and CPTSF proposed monitoring bore locations

3.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4, Figure 5 and Figure 6 below provides a summary of potential environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 4: Environmental receptors and distance from prescribed activity

Environmental receptors	Distance from prescribed activity
Rights in Water and Irrigation Act 1914 Proclaimed East Murchison Groundwater Area. Proclaimed Gascoyne River and Tributaries Surface Water Area.	Overlays the Premises boundary.
Groundwater Groundwater in the Premises area is primarily hosted within fractured rock aquifers exhibiting low hydraulic conductivity. Groundwater flow in the vicinity of the Premises generally moves northward towards the Gascoyne River. Refer also to section 3.1.3.	CPTSF pit rim elevation of RL500.5m and a current depth of 443 mbgl. The water level in CPTSF is currently at approximately RL470m. During discharge / dewatering activities, water levels in Callies pit have remained consistent at approximately RL470m. In April 2024, groundwater levels at M1 and M2 (around TSF2) were measured at approximately RL484.5m and RL474.6m respectively. These values correlate to the Callies pit water level of approximately RL470m (December 2024).
Surface water bodies Yarlarweelor Creek and tributaries. The Premises is situated with the upper reaches of the Gascoyne River catchment. Regional surface water drainage flows northward and westward towards the Gascoyne River and Yarlarweelor Creek, respectively. The Premises is characterised by ephemeral creek lines with shallow, discontinuous channels primarily dominated by mulga vegetation. *Westgold 2025* states the following: • Callies pit is located on a relatively flat, elevated terrain within the central mining area, within this area there are no drainage lines that could significantly impact pits and associated infrastructure. • TSF2 is located on a relatively flat elevated terrain, drainage within the area is characterised	250 m south of CPTSF. 200 m south of TSF2.

Environmental receptors	Distance from prescribed activity
as wide sheet flow. Hydrological analysis indicates that a 1-in-100-year flood event would not impact TSF2.	
Priority Ecological Community Priority 1 Robinson Range vegetation complexes (banded iron formation).	1.6 km north of TSF2.
Aboriginal heritage site Mt Labouchere Ritual/Ceremonial; Creation/Dreaming Narrative.	2 km north of TSF2. 2.5 km north of CPTSF.

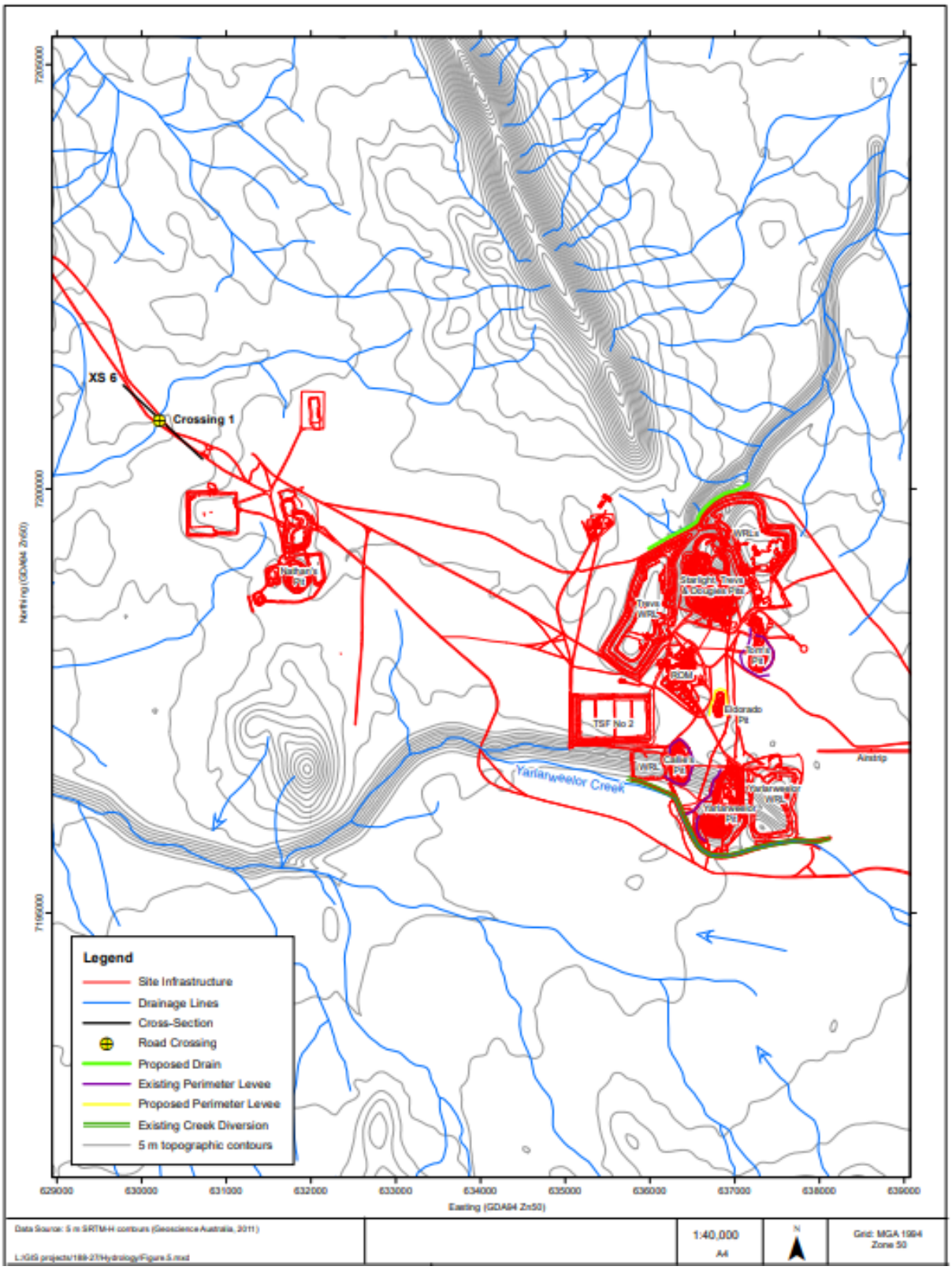

Figure 5: Premises layout and drainage lines

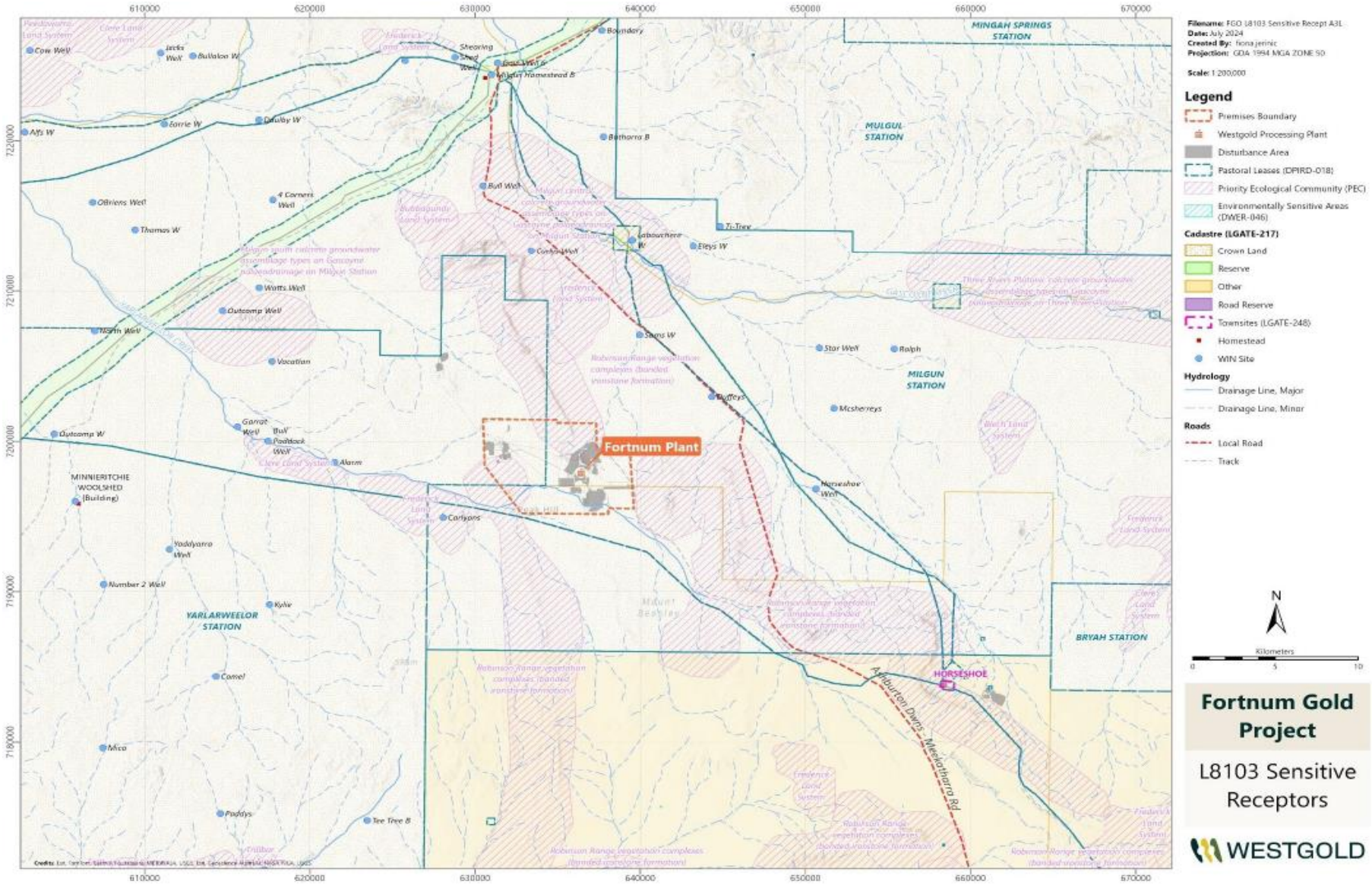

Figure 6: Sensitive Receptors

3.1.3 Hydrogeology

Water samples collected from existing monitoring bores at TSF2 in November 2024 are shown in Table 5. *Westgold 2025a* states that the results indicate a pH ranging from fresh to slightly alkaline, with TDS ranging from fresh to potable quality at Creek and Junction Bores, with brackish to not suitable for human or cattle consumption at other sites. Heavy metal concentrations were low.

Table 6 shows the water quality characteristics observed in the Callies pit. The results indicate a sodium-chloride water type with a moderately alkaline pH; TDS levels are classified as brackish, but suitable for cattle consumption; and heavy metal concentrations are low.

Water samples collected from existing monitoring bore Callies Bore in November 2024 are shown in Table 7. *Westgold 2025a* states that the results indicate a pH ranging from fresh to slightly alkaline, with TDS classified as fresh suitable for human consumption; and heavy metal concentrations were low.

For Table 5, Table 6 and Table 7, the applicant has stated that these water quality characteristics are representative of natural groundwater conditions in the area (Westgold 2025a).

Table 5: TSF2 existing bore groundwater quality

Analyte	Units	M1	M2	M3	M4	M5	Creek Bore	Junction Bore
Alkalinity (Total) (as CaCO3)	mg/L	820	98	150	810		270	270
Alkalinity Bicarbonate as HCO3	mg/L	100	61	210	110		190	190
Alkalinity Carbonate as CO3	mg/L	<1	<1	<1	<1		<1	<1
Antimony (Dissolved) as Sb	µg/L	<1	<1	<1	<1		<1	<1
Arsenic (Dissolved) as As	µg/L	0.9	<0.5	<0.5	3.4		5.1	4.4
Boron (Dissolved) as Bo	µg/L	860	310	1100	930		670	670
Cadmium (Dissolved) as Cd	µg/L	<0.05	<0.05	<0.05	0.06		<0.05	<0.06
Calcium (Dissolved) as Ca	mg/L	160	18	26	160		46	46
Chloride (Dissolved) as Cl	mg/L	410	110	89	570		220	220
Chromium (Dissolved) as Cr	µg/L	1.4	1.0	`150	0.9		3.1	4.1
Chromium Hexavalent as Cr6+	mg/L	<0.001	<0.001	0.14	<0.001		0.002	0.004
Cobalt (Dissolved) as Co	µg/L	400	1.9	33	680		2.6	2.3
Conductivity (@ 25 C, Lab)	µS/cm	2700	360	970	3400		1300	1300
Copper (Dissolved) as Cu	µg/L	0.8	2.7	0.8	2.2		2.1	<0.5
Cyanide (WAD)	mg/L	0.006	<0.004	<0.004	<0.004		<0.004	<0.004
Cyanide (Total)	mg/L	0.12	0.006	0.016	0.18	DRY	<0.004	<0.004
Iron (Dissolved) as Fe	µg/L	28	6	6	77		10	10
Lead (Dissolved) as Pb	µg/L	0.5	<0.5	<0.5	<0.5		0.8	<0.5
Magnesium (Dissolved) as Mg	mg/L	99	13	20	100		38	39
Manganese (Dissolved) as Mn	µg/L	22	20	11	31		3	4
Mercury (Dissolved) as Hg	mg/L	<0.00005	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005
Nickel (Dissolved) as Ni	µg/L	<1	<1	<1	<1		<1	<1
Nitrate as N	mg/L	7.3	7.6	11	55		17	17
Nitrate as NO_3	µg/L	32	33	49	240		<0.2	<0.2
Nitrite as NO_2	mg/L	<0.2	<0.2	<0.2	<0.2		76	76
pH (Lab)	pH Units	8	7.9	8.1	7.8		7.9	7.6
Potassium (Dissolved) as K	mg/L	29	10	16	29		17	17
Selenium (Dissolved) as Se	µg/L	3	3	3	19		4	4
Sodium (Dissolved) as Na	mg/L	250	66	130	400		150	150
Thallium	µg/L	<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
Total Dissolved Solids		1900	360	630	2500		800	790
Zinc	µg/L	5	4	2	9		8	3

Table 6: Callies Pit groundwater quality

Analyte	31/01/2016	19/07/2017	14/10/2018	10/10/2019	13/10/2020	14/10/2021	23/10/2022	17/10/2023	20/10/2024	12/01/2025
Alkalinity (Total) (mg CaCO3/L)	140	---	120	140	---	---	---	---	---	---
Alkalinity Bicarbonate as HCO3 (mg/L)	170	180	130	83	58	120	120	5	120	97
Alkalinity Carbonate as CO3 (mg/L)	1	1	4	44	1	1	1	1	1	1
Aluminium (Dissolved) as Al (mg/L)	---	---	---	0.005	---	---	---	---	---	---
Ammonia/Ammonium as NH3 (mg/L)	---	---	---	---	---	---	---	---	---	---
Antimony (Dissolved) as Sb (mg/L)	---	---	0.001	---	0.001	0.002	0.002	0.002	0.002	0.001
Arsenic (Dissolved) as As (mg/L)	---	---	0.001	0.001	0.001	0.001	0.001	0.001	0.0013	0.001
Benzene (µg/L)	---	---	---	---	---	0.001	0.001	0.5	1	1
Boron (Dissolved) as Bo (mg/L)	---	---	---	---	0.32	0.79	0.62	0.61	0.53	0.45
Cadmium (Dissolved) as Cd (mg/L)	---	---	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.00005
Calcium (Dissolved) as Ca (mg/L)	34	40	31	27	35	99	74	70	75	61
Chloride (Dissolved) as Cl (mg/L)	140	140	200	320	99	240	210	160	200	160
Chromium (Dissolved) as Cr (mg/L)	---	---	0.008	0.013	0.001	0.001	0.001	0.001	0.0009	0.0007
Chromium Hexavalent as Cr6+ (mg/L)	<0.001	0.001	---	---	0.001	0.011	0.002	0.001	0.001	0.001
Cobalt (Dissolved) as Co (mg/L)	---	---	0.003	0.001	0.001	0.001	0.001	0.001	0.0005	0.0005
Conductivity (@ 25 C, Lab) (µS/cm)	862	---	1100	1900	920	2100	1700	1100	1600	1300
Copper (Dissolved) as Cu (mg/L)	0.001	---	0.001	0.005	0.005	0.007	0.001	<0.004	<0.0012	<0.002
Cyanide (WAD) (mg/L)	---	---	---	---	---	---	---	<0.004	<0.004	<0.004
Cyanide (Total) (mg/L)	---	---	---	---	---	---	---	<0.004	<0.004	<0.004
Iron (Dissolved) as Fe (mg/L)	---	---	0.005	0.005	0.046	0.005	0.005	0.005	0.017	0.006
Lead (Dissolved) as Pb (mg/L)	<0.001	---	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005
Magnesium (Dissolved) as Mg (mg/L)	26	28	34	56	17	44	36	35	34	26
Manganese (Dissolved) as Mn (mg/L)	---	---	---	0.001	0.029	0.036	0.046	0.007	0.033	0.016
Mercury (Dissolved) as Hg (mg/L)	---	---	---	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
Nickel (Dissolved) as Ni (mg/L)	0.001	---	0.001	<0.001	<0.001	<0.005	<0.003	<0.002	<0.002	<0.002
Nitrate as N (mg/L)	---	---	---	---	36	---	260	1.5	45	36
Nitrate as NO_3 (mg/L)	---	---	45	100	160	81	260	6.6	200	160
Nitrite as NO_2 (mg/L)	---	---	0.3	1	3.1	5.2	5	7.5	3.5	4.9
pH (Lab) (units)	8	8	8.4	9.2	7.8	8.1	8	8.1	8.2	8.2
Potassium (Dissolved) as K (mg/L)	16	16	17	23	10	24	19	19	19	15
Selenium (Dissolved) as Se (mg/L)	---	---	0.003	0.009	0.003	0.005	0.005	0.008	0.006	0.005
Sodium (Dissolved) as Na (mg/L)	97	110	120	220	80	190	160	180	170	130
Sulphate as SO4 (mg/L)	120	110	130	210	100	250	220	150	240	200
Thallium (Dissolved) as Tl (mg/L)	---	---	---	---	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005
ZINCCC										

Table 7: Callies existing bore groundwater quality

Analyte	Units	Callies Bore
		20/10/24
Alkalinity (Total) (as CaCO3)	mg/L	230
Alkalinity Bicarbonate as HCO3	mg/L	170
Alkalinity Carbonate as CO3	mg/L	<1
Antimony (Dissolved) as Sb	µg/L	<1
Arsenic (Dissolved) as As	µg/L	<0.5
Boron (Dissolved) as Bo	µg/L	660
Cadmium (Dissolved) as Cd	µg/L	0.42
Calcium (Dissolved) as Ca	mg/L	43
Chloride (Dissolved) as Cl	mg/L	170
Chromium (Dissolved) as Cr	mg/L	<0.5
Chromium Hexavalent as Cr6+	µg/L	<0.001
Cobalt (Dissolved) as Co	µg/L	0.8
Conductivity (@ 25 C, Lab)	µS/cm	1100
Copper (Dissolved) as Cu	µg/L	8
Cyanide (WAD)	mg/L	<0.004
Cyanide (Total)	mg/L	<0.004
Iron (Dissolved) as Fe	µg/L	59
Lead (Dissolved) as Pb	µg/L	<0.5
Magnesium (Dissolved) as Mg	mg/L	30
Manganese (Dissolved) as Mn	µg/L	190
Mercury (Dissolved) as Hg	mg/L	<0.00005
Nickel (Dissolved) as Ni	µg/L	1
Nitrate as N	mg/L	7.9
Nitrate as NO_3	µg/L	<0.2
Nitrite as NO_2	mg/L	36
pH (Lab)	pH Units	7.7
Potassium (Dissolved) as K	mg/L	16
Selenium (Dissolved) as Se	µg/L	140
Sodium (Dissolved) as Na	mg/L	130
Sulphate as SO4	mg/L	160
Thallium (Dissolved) as Tl	µg/L	<0.5
Total Dissolved Solids	mg/L	670
Zinc		

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 8.

Works approval W2961/2025/1 that accompanies this decision report authorises construction, commissioning and time-limited operations. The conditions in the issued works approval, as outlined in Table 8 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

An amendment to Licence L8103/1989/13 is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence application.

Table 8: Risk assessment of potential emissions and discharges from the premises during construction, commissioning and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction								
Construction activities associated with CPTSF infrastructure Earthworks associated with TSF2 raises Vehicle movements	Dust	Air / windborne pathway causing impacts to vegetation health	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Possible **Low Risk**	Y	No conditions imposed The general provisions of the EP Act apply	N/A
	Sediment laden stormwater	Overland runoff causing sedimentation of surface water drainage	Surrounding vegetation Surface water drainage lines	Refer to Section 3.1	C = Minor L = Unlikely **Medium Risk**	Y	No conditions imposed The *Environmental Protection (Unauthorised Discharges) Regulations 2004* applies	N/A
TSF2 - Operation (including time-limited operation)								
Tailings surface and embankment walls	Dust from TSF surface	Air / windborne pathway causing impacts to vegetation health	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y	No conditions imposed The general provisions of the EP Act apply	N/A
Deposition of tailings into TSF2	Tailings supernatant containing dissolved solids, metals and metalloids	Seepage causing contamination and waterlogging of soil Impacting on vegetation health and groundwater quality Groundwater mounding	Soil and vegetation in vicinity of TSF2 Groundwater	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	N	Condition 1 – Design and construction requirements Condition 15 – Operational requirements **Condition 20** – Water balance Condition 1 of the existing Licence L8103/1989/3 has quarterly ambient groundwater monitoring requirements for the existing TSF2 monitoring bores. Based on this, no ambient groundwater monitoring requirements have been included on this works approval for TSF2	**Refer to section 3.3** As part of a subsequent licence amendment process, the following conditions of existing Licence L8103/1989/3 should be amended to include the operation of TSF2 and its associated infrastructure: • Condition 4 – Inclusion of a requirement for a water balance over the TSF2 • Condition 10 – Infrastructure and controls table

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
								including tailings deposition & decant return; inspections; and freeboard requirement
	Tailings and contaminated water	Discharges to land from overtopping of TSF2 Impacting vegetation health and contamination of surrounding soils	Soils and vegetation in vicinity of TSF2 Surface water drainage lines	Refer to Section 3.1	C = Moderate L = Rare **Medium Risk**	N	Condition 1 – Design and construction requirements Condition 15 – Operational requirements Condition 16 – Authorised discharge points during time limited operation **Condition 20** – Water balance Condition 21 – Inspection of infrastructure	**Refer to section 3.3** As part of a subsequent licence amendment process, the following conditions of existing Licence L8103/1989/3 will be amended to include the operation of TSF2 and its associated infrastructure: • Condition 4 – Inclusion of a requirement for a water balance over the TSF2 • Condition 10 – Infrastructure and controls table including tailings deposition & decant return; inspections; and freeboard requirement
Tailings delivery and return water pipelines	Tailings and return water	Discharges to land and infiltration from leaks, pipeline ruptures or failure causing soil and groundwater contamination	Soil and vegetation along pipeline route Groundwater Surface water drainage lines	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1 – Design and construction requirements Condition 15 – Operational requirements Condition 21 – Inspection of infrastructure	Condition 10 of existing Licence L8103/1989/3 has operational requirements for the tailings slurry and return water pipelines These requirements have been applied through Condition 15 of this works approval

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
CPTSF - Commissioning and Operation (including time-limited operation)								
Tailings surface and embankment walls	Dust from TSF surface	Air / windborne pathway causing impacts to vegetation health	Surrounding vegetation	Refer to Section 3.1	C = Slight L = Rare **Low Risk**	Y	No conditions imposed The general provisions of the EP Act apply	N/A
Deposition of tailings into CPTSF	Tailings supernatant containing dissolved solids, metals and metalloids	Seepage causing contamination and waterlogging of soil Impacting on vegetation health and groundwater quality Groundwater mounding	Soil and vegetation in vicinity of CPTSF Groundwater	Refer to Section 3.1	C = Moderate L = Possible **Medium Risk**	N	Condition 1 – Design and construction requirements **Condition 2** – Construction of groundwater monitoring bores **Condition 7** – Requirement to conduct at least one baseline sampling event prior to environmental commissioning **Condition 9** – Commissioning requirements Condition 15 – Operational requirements **Condition 17** – Ambient groundwater monitoring **Condition 20** – Water balance	**Refer to section 3.3** As part of a subsequent licence amendment process, the following conditions of existing Licence L8103/1989/3 will be amended to include the operation of CPTSF and its associated infrastructure: • Condition 1 – Monitoring of representative water samples • Condition 4 – Inclusion of a requirement for a water balance over the CPTSF • Condition 10 – Infrastructure and controls table including tailings deposition & decant return; inspections; and freeboard requirement • Condition 11 – Authorised discharge points for tailings
	Tailings and contaminated water	Discharges to land from overtopping of the CPTSF and	Soils and vegetation in vicinity of	Refer to Section 3.1	C = Moderate L = Rare	N	Condition 1 – Design and construction requirements **Condition 9** –	**Refer to section 3.3** As part of a subsequent licence amendment

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		TSF2 Impacting vegetation health and contamination of surrounding soils	CPTSF and TSF2 Surface water drainage lines		**Medium Risk**		Commissioning requirements Conditions 10 and 16 – Authorised discharge points Condition 15 – Operational requirements **Condition 20** – Water balance Condition 21 – Inspection of infrastructure	process, the following conditions of existing Licence L8103/1989/3 will be amended to include the operation of CPTSF and its associated infrastructure: • Condition 4 – Inclusion of a requirement for a water balance over the CPTSF • Condition 10 - Infrastructure and controls table including tailings deposition & decant return; inspections; and freeboard requirement • Condition 11 – Authorised discharge points for tailings
Tailings delivery and return water pipelines	Tailings and return water	Discharges to land and infiltration from leaks, pipeline ruptures or failure causing soil and groundwater contamination	Soil and vegetation along pipeline route Groundwater Surface water drainage lines	Refer to Section 3.1	C = Moderate L = Unlikely **Medium Risk**	Y	Condition 1 – Design and construction requirements Condition 9 – Commissioning requirements Condition 15 – Operational requirements Condition 21 – Inspection of infrastructure	Condition 10 of existing Licence L8103/1989/3 has operational requirements for the tailings slurry and return water pipelines These requirements have been applied through Condition 15 of this works approval

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

3.3 Additional regulatory controls

Conditions 2 and 7 for the CPTSF:

To monitor groundwater level and quality around the CPTSF, the applicant has proposed to install four monitoring bores (CMB1, CMB2, CMB3 and CMB4).

The department has conditioned the construction of the proposed four monitoring bores through condition 2.

Under condition 7 the applicant must within 30 days of the monitoring bores being constructed and **prior to environmental commissioning of the CPTSF** conduct baseline sampling (at least one event) from the four bores (CMB1, CMB2, CMB3 and CMB4) for the parameters outlined in Table 7 of the works approval.

Condition 9 for the CPTSF:

Westgold 2025a states the pit will be dewatered prior to tailings emplacement. The department has conditioned the dewatering of CPTSF prior to the commencement of tailings deposition through condition 9.

Condition 17 for the CPTSF monitoring bores:

The applicant proposed a monitoring program for the CPTSF. The department has adopted the monitoring program through condition 17.

Based on section 2.2.5 for the tailings characterisation, it was revealed that Mercury, Bismuth, Molybdenum and Selenium were significantly enriched. The department has added Bismuth and Molybdenum to the ambient groundwater monitoring program (Mercury and Selenium are already included).

Condition 20 for TSF2 and the CPTSF:

The department requires the applicant to undertake a monthly water balance of TSF2 and the CPTSF during time-limited operations. This has been applied through condition 20.

4. Consultation

Table 9 provides a summary of the consultation undertaken by the department.

Table 9: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 05 June 2024	No comments received	N/A
Local Government Authority (Shire of Meekatharra) advised of proposal on 05 June 2025	No comments received	N/A
DEMIRS advised of proposal 05 June 2025	Comments received on 03 July 2025. Refer to section 2.3	Noted
Applicant was provided with draft documents on 29 July 2025	Following construction, commencement of time-limited operations, and successful commissioning of Stage 1B,	DWER is supportive of licence L8103/1989/3 being amended following the construction/ commissioning, of Stage 1B

Consultation method	Comments received	Department response
	Aragon will apply to amend Licence L8103/1989/3 to incorporate the remaining construction and operational requirements for TSF2 currently outlined under Works Approval W2961/2025/1.	(TSF2) to incorporate the remaining lift requirements for TSF2 outlined under Works Approval W2961/2025/1.

5. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

References

1. Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australian and New Zealand (ARMCANZ) 2000 – *Livestock drinking water guidelines, Australian and New Zealand guidelines for fresh and marine water quality* – Volume 3 available at ANZECC & ARMCANZ (2000) guidelines (www.waterquality.gov.au).
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. Licence L8103/1989/3 available at https://www.der.wa.gov.au/our-work/licences-and-works-approvals/current-licences.
6. *National Environment Protection, (Assessment of Site Contamination) Measure 1999* (ASC NEPM).
7. TailCon Projects Consulting Pty Ltd (Tailcon) 2025, *Aragon Resources Pty Ltd Fortnum Gold Operations Callies In-Pit TSF Detail Design* (Rev. 0) (115-01-3126C-RR001), 31 March 2025.
8. Westgold Resources Ltd (Westgold) 2020, *Fortnum Material Characterisation Report* July 2020.
9. Westgold 2025a, *L8103/1999/3 Works Approval Application Supporting Documentation, TSF2 Construction to 525mRL & Callies In-Pit Tailings Storage Facility Construction Fortnum Gold Project*, April 2025.
10. Westgold 2025b, *Re: APP-0028381: Application for a Works Approval – Request for Further Information*, email dated 24 July 2025.