Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6687/2022/1
Works approval holder	LRL (AUST) Pty Ltd
ACN	118 153 825
Registered business address	Level 2, 1292 Hay Street WEST PERTH WA 6005
DWER file number	DER2022/000121
Duration	28/09/2022 to 27/09/2027
Date of issue	28/09/2022
Date of amendment	12/12/2024
Premises details	Kathleen Valley Lithium-Tantalum Project Mining tenements M36/265, M36/459, M36/460, M36/696, G36/52, L36/255, L36/256 As defined in Schedule 1

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**	**Assessed production / design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	4 million tonnes per annual period
Category 52: Electric power generation	32 megawatts
Category 54: Sewage facility	240 cubic metres per day
Category 89: Putrescible landfill site	2,270 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 12 December 2024, by:

Jarrod Abrahams
Digitally signed by Jarrod Abrahams
Date: 2024.12.12 15:55:50 +08'00'

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

Works approval history

Date	Reference number	Summary of changes
28/09/2022	W6687/2022/1	Works approval granted.
12/12/2024	W6687/2022/1	Works approval amendment to extend the duration of the time-limited operations from 180 Days to 300 Days

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:

General

1. The works approval holder must manage dust generation at the premises by wetting down activities associated with the construction of the tailings storage facility, processing plant, pipelines, paste plants, wastewater treatment plants and putrescible landfill.

Construction phase

Infrastructure and equipment (critical containment infrastructure – tailings storage facility)

2. The works approval holder must:

(a) construct all 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 1.

Table 1: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Tailings Storage Facility 1: starter embankments 1A (cell 1) and 1B (cell 2)	(a) Height of starter embankments: i. 1A (cell 1) constructed to 10 m height (crest height 519 m RL) ii. 1B (cell 2) constructed to 7.5 m height (crest height 520 m RL) (b) Starter embankments storage capacity: i. Cell 1A capacity of 1.85 Mt ii. Cell 1B storage capacity of 0.97 Mt (c) Total footprint (both cells) of 102.7 hectares (d) Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1% annual exceedance probability 72 hour rain event) above the normal operating pond. (e) Constructed within tenement M36/460 (f) Constructed as per specifications in Figure 3, Figure 4 and Figure 5 of Schedule 1.	As shown in Figure 2 and Figure 3 of Schedule 1
2.	Tailings storage facility foundation preparation	(a) Grout and cap all known existing drill holes located within the TSF foundation; and (b) Grout and decommission all known existing monitoring wells located within the TSF foundation in accordance with ASTM D5299/D5299M-18 Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities.	

	Infrastructure	Design and construction requirements	Infrastructure location
3.	Tailings storage facility seepage control infrastructure	(a) Constructed with a minimum subgrade of 200mm imported fine grained compacted material where in-situ materials are unsuitable for sub-grade (as per Figure 4 & Figure 5 of Schedule 1) (b) HDPE liner to be installed across the whole extent for both starter embankments to be constructed as per the following minimum requirements: i. Constructed with a 1.5mm high density polyethylene (HDPE) liner with a hydraulic conductivity of 2 x 10^{-10} m/s or less when tested using ASTM method D4716; ii. All seams and joins to be continuous and heat welded, overlapping by a minimum of 100mm; iii. All seams and joins should be constructed and tested as watertight over their full length; iv. Specific gravity of 0.94 or more (ASTM method D1505); v. Melt index of 0.05g to 0.30g in 10 minutes (ASTM method D1238, condition E 190/2.16) vi. Carbon black content of 2-3% (ASTM method D1603); vii. Minimum tensile strength at yield of 16,000 kN/m2; viii. Minimum tensile strength at break of 550kN/m2 (ASTM method D638, type IV 2) (c) Underdrainage lines and collection sump installed to collect seepage and constructed as specified in Figure 8 and Figure 9 of Schedule 1 (d) Upstream cut-off trench and toe drain installed to collect seepage and constructed as specified in Figure 4 of Schedule 1 (e) A central rock-ring decant structure to be constructed at the centre of each cell. Constructed as specified in Figure 6 and Figure 7 of Schedule 1	As shown in Figure 2 and Figure 3 of Schedule 1
4.	Pipelines carrying tailings and decant return water	(a) Constructed according to Australian Standards AS/NZS 2033, 4129, 4130 and 4131 for polyethylene pipes; (b) Pipelines to be installed with instrumentation consisting of electromagnetic flow meters and pressure transmitter installed downstream of pump station and upstream TSF discharge providing constant monitoring of operation parameters of the tailings pipeline, and to provide shutdown of the system in the event of pipeline failure; (c) Pipelines must be located within secondary containment (bunding) with sufficient capacity to completely contain any spills from pipeline leakage or breach for a period equal to the time between routine inspections.	
5.	Vibrating wire piezometers	(a) 14 VWP to be installed around the TSF perimeter as	As shown in Figure 12 of

	Infrastructure	Design and construction requirements	Infrastructure location
	(VWP)	shown in Figure 12 of Schedule 1 and as constructed in Figure 13 of Schedule 1; and (b) VWP to have instrument readout stations (to download data to a central storage location)	Schedule 1
6.	Tailings Storage Facility Surface water management controls	(a) Constructed with sediment/stormwater controls and diversions as per Figure 10 of Schedule 1.	As shown in Figure 10 of Schedule 1

3. The works approval holder must:

(a) construct 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 1.

Table 2: Critical containment infrastructure design and construction requirements (TSF stages 2 – 5)

	Infrastructure	Design and construction requirements	Infrastructure location
1	Tailings Storage Facility 1: stage 2 lift	(a) Height of embankments (cells 1 and 2): 523 m RL (b) Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1% annual exceedance probability 72 hour rain event) above the normal operating pond. (c) Constructed as per specifications in Figure 3, Figure 4 and Figure 5 of Schedule 1.	As shown in Figure 2 and Figure 3 of Schedule 1
2	Tailings Storage Facility 1: stage 3 lift	(a) Height of embankments (cells 1 and 2): 526.9 m RL (b) Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1% annual exceedance probability 72 hour rain event) above the normal operating pond. Constructed as per specifications in Figure 3, Figure 4 and Figure 5 of Schedule 1.	
3	Tailings Storage Facility 1: stage 4 lift	(a) Height of embankments (cells 1 and 2): 530.9 m RL (b) Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1% annual exceedance probability 72 hour rain event) above the normal operating pond. Constructed as per specifications in Figure 3, Figure 4 and Figure 5 of Schedule 1.	
4	Tailings Storage Facility 1: stage 5 lift	(a) Height of embankments (cells 1 and 2): 535 m RL (b) Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1% annual exceedance probability 72 hour rain event) above	

	Infrastructure	Design and construction requirements	Infrastructure location
		the normal operating pond. Constructed as per specifications in Figure 3, Figure 4 and Figure 5 of Schedule 1.	

Infrastructure and equipment (non-critical containment infrastructure)

4. The works approval holder must construct and/or install the infrastructure listed in Table 3;

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

(b) at the corresponding infrastructure location

as set out in Table 3.

Table 3: Design and construction/installation requirements

	Infrastructure	Design and construction requirements	Infrastructure location
1.	Processing plant and associated infrastructure	(a) Processing plant comprised of the following infrastructure and equipment: i. Run of Mine (ROM) Pad; ii. ROM bin; iii. Crushing plant circuit; iv. Grinding and milling circuit; v. Magnetic separation; vi. Desliming circuit; vii. Flotation circuit; viii. Process water tank; ix. Reagent storage area; and x. Product handling and storage areas. (b) Layout of the processing infrastructure to be constructed in accordance with Figure 14 of Schedule 1. (c) Process control alarms for loss of containment to be installed (d) Water sprays to be installed at ROM bin and transfer points in the crushing circuit. (e) Processing plant area, where liquids are to be stored, used or contained, to be constructed on concrete pad with bunding. (f) Surface water diversions/sumps to be installed to divert stormwater away from operational areas (g) Reagents and/or hydrocarbons stored within bunded areas to contain at least 110% of the total volume of materials stored	As shown in Figure 2 of Schedule 1
2.	Paste plant	(a) Constructed within a bunded area which drains to sumps with recovery pumps	As shown in Figure 2 of Schedule 1
3.	LNG power station and	(a) To consist of six reciprocating gas engine generators (Jenbacher J624, Cummins HSK78	As shown in Figure

	Infrastructure	Design and construction requirements	Infrastructure location
	storage tanks	and Caterpillar CAT3520H) and five reciprocating diesel engines, to be installed as per the manufacturers specifications. (b) Gas generators to be housed in a purpose-built building overlying 100mm concrete foundation. (c) Distribution transformers to be fully sealed and installed in a concrete bund. (d) Gas generator exhaust to be directed to individual stacks with coordinates listed in Schedule 2. (e) The building and genset foundations to drain to a 600mm wide concrete culvert running the full length of the building. (f) Three 350kL LNG tanks to be stored and maintained as per manufacturers specifications. (g) Five diesel tanks to be stored within bunded areas designed to contain atleast 110% of the total volume of materials stored.	2 of Schedule 1
4.	Two wastewater treatment plants (WWTP)	(a) Each WWTP to consist of a containerised Moving Bed Bioreactor (MBBR) system comprising of two anoxic and two aerobic tanks (b) Accommodation Village WWTP to treat sewage to the minimum effluent quality performance criteria: i. Total suspended solids <30 mg/L ii. Total dissolved solids <1000 mg/L iii. Biological oxygen demand <20 mg/L iv. E. coli <10 Cfu/100mL v. Residual free chlorine <2mg/L vi. Total nitrogen <20 mg/L vii. Total phosphorus <2 mg/L viii. pH 6.5 – 8.5 (c) Process plant WWTP to treat sewage to the minimum effluent quality performance criteria: i. Total suspended solids <30 mg/L ii. Total dissolved solids <1000 mg/L iii. Biological oxygen demand <20 mg/L iv. E. coli <10 Cfu/100mL v. Residual free chlorine <2mg/L vi. Total nitrogen <30 mg/L vii. Total phosphorus <8 mg/L viii. pH 6.5 – 8.5 (d) A volumetric flow metre must be installed on the WWTP discharge pipe outlet to monitor out-going volume. (e) An alarm system must be installed to notify the operator of high tank levels. (f) WWTP to have a contingency storage capacity of up to two days of normal flow in the event the	As shown in Figure 2 of Schedule 1

	Infrastructure	Design and construction requirements	Infrastructure location
		discharge is suspended. (g) Treatment chemicals to be stored in a bunded area to contain at least 110% of the total volume of materials stored. Spill kits to be kept at the premises.	
5.	Putrescible landfill	(a) The base of the landfill shall be maintained at least 5m above groundwater level; (b) The landfill must be located at least 100 m from any permanent or perennial watercourse; (c) The entire perimeter of the landfill must be fenced to prevent fauna from accessing waste material; and (d) Signage placed to indicate the types of waste accepted for burial.	As shown in Figure 2 of Schedule 1

Construction of groundwater monitoring wells

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

Table 4: Groundwater monitoring well construction requirements

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring well(s): Three pairs of wells to the west of TSF 1 and proposed in Figure 12	<u>Well design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores.* Well 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, wells must be nested, and the perched features individually screened.	Three pairs of monitoring wells west of TSF1 as shown in Figure 12 in Schedule 1	Must be constructed, developed (purged) and determined to be operational no later than 30 calendar days prior to the commencement of time limited operations under condition 18
	<u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring wells. 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.		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	Well construction log: Well construction details must be documented within a well 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.		
	Well development: All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development activities and included in the well construction log.		
	Installation survey: The vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	Well network map: A well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells 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 well screen depth and length.

Baseline groundwater monitoring

6. The works approval holder must monitor baseline groundwater conditions for concentrations of the identified parameters in accordance with Table 5:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) in the corresponding unit;

(d) at no less than the corresponding frequency;

(e) using the corresponding method,

as set out in Table 4.

Table 5: Monitoring of baseline ambient groundwater concentrations

Monitoring location	Parameters	Unit	Frequency	Sampling Method
Three pairs of TSF groundwater monitoring well(s) required by condition 4	Standing water level	Metres below ground level (mbgl)	A single sampling event undertaken prior to commencement of time limited operations of processing plant and tailings being deposited into TSF.	AS/NZS 5667.1 and AS/NZS 5667.11
	pH[1]	pH units		
	Electrical conductivity (EC)	µS/cm		
	Total Dissolved Solids	mg/L		
Three pairs of TSF groundwater monitoring well(s) required by condition 4	Aluminium (Al) Ammonium (NH_4) Antimony (Sb) Arsenic (total) – speciation if results above 13µg/L Barium (Ba) Beryllium (Be) Bismuth (Bi) Boron (B) Caesium (Cs) Cadmium (Cd) Calcium (Ca)a Chloride (Cl) Chromium (total) – speciation if results above 5µg/L Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Lithium (Li) Magnesium (Mg) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Nickel (Ni) Nitrate (NO_3) Phosphate (PO_4) Potassium (K) Rubidium (Rb) Selenium (Se) Silver (Ag) Sodium (Na) Sulfate (SO_4^{2-}) Strontium (Sr) Tantalum (Ta) Tellurium (Te)	mg/L		

Monitoring location	Parameters	Unit	Frequency	Sampling Method
	Thallium (Tl) Thorium (Th) Tin (Sn) Uranium (U) Total Sulfur Zinc (Zn)			
One landfill monitoring well (WSTB006 as shown in Figure 15)	Standing water level	Metres below ground level (mbgl)	A single sampling event undertaken prior to commencement of construction of the landfill trench.	

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

Compliance reporting (critical containment infrastructure)

7. The works approval holder must within 30 calendar days of the critical containment infrastructure 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;

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

(e) groundwater monitoring data indicating the baseline ambient environmental conditions at the premises prior to construction of the item(s) of infrastructure, as per condition 6, Table 5; and

(f) a Quality Control / Quality Assurance Certificate from an independent third party which demonstrates that the HDPE liner required by condition 2 meets the specifications of condition 2.

Compliance reporting (critical containment infrastructure – TSF stage 2 -5 lifts)

9. The works approval holder must within 30 calendar days of the critical containment infrastructure required by condition 3 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 3; and

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

10. The Critical Containment Infrastructure Report required by condition 9 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 3, has been built and installed in accordance with the requirements specified in condition 3;

(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 3;

(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.

Compliance reporting (non-critical containment infrastructure)

11. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 4 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 4 and

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

12. The works approval holder must ensure that the Environmental Compliance Report required by condition 11, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the items of infrastructure or component(s) thereof, as specified in condition 4, have been constructed in accordance with the relevant requirements specified in condition 4

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 4; and

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

Compliance reporting (monitoring wells)

13. 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 condition 5.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

14. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 15 once the Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 8 or 11 of this works approval.

15. The works approval holder must ensure that any environmental commissioning activities undertaken for an item of infrastructure specified in Table 6 are conducted:

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

(b) for the corresponding authorised commissioning duration.

as specified in Table 6

Table 6: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1	Processing plant and associated infrastructure	(a) Bunds and sumps shall be leak tested; and (b) Process control alarms for loss of containment shall be tested.	For a period not exceeding 12 weeks in aggregate.
2	Pipelines (tailings and return water) between processing plant and tailings facility	(a) Pipelines shall be tested; (b) All flow meters to be calibrated; and (c) All pressure meters to be calibrated.	

Environmental commissioning report

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 6.

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

(i) hydro-testing of pipelines;

(ii) calibration of flow meters and pressure transmitters; and

(iii) commissioning of the process control system.

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

(c) 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 critical containment infrastructure identified in condition 2 where the CEO has notified the works approval holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 2 meets the requirements of that condition.

19. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 4:

(a) where the item of infrastructure is not authorised to undertake environmental commissioning, the Environmental Compliance Report as required by condition 12 has been submitted by the works approval holder for that item of infrastructure

(b) where the item of infrastructure is authorised to undertake environmental commissioning under condition 15, the Environmental Commissioning Report for that item of infrastructure as required by condition 16 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 (as applicable):

(a) for a period not exceeding 300 calendar days from the day the works approval holder meets the requirements of both conditions 18 and 19 for those items 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

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

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Tailings storage facility starter embankment	(a) To be maintained as per the design and construction/installation requirements in condition 2. (b) Maintain a minimum operating freeboard of 0.5 m; (c) Visual inspections every 12 hours and prior to and following significant rainfall events to check: i. Freeboard capacity; ii. Location and size of the decant pond (expressed as a total percentage of the surface area of the TSF);	As shown in and Figure 3 of Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		iii. Change in seepage conditions or sudden change in water level; and iv. Signs of erosion. (d) Wastewater discharged to the TSF from the wastewater treatment plant must be treated to the wastewater quality criteria as specified in condition 2, item 4(a).	
2.	Pipelines carrying tailings and decant return water.	(a) To be maintained as per the design and construction/installation requirements in condition 2; (b) Visual inspections every 12 hours when in operation to check the integrity of pipelines and bunding; (c) Weekly inspection of flow metres, leak detection telemetry and automatic shut-off systems.	As shown in and Figure 3 of Schedule 1
3.	Vibrating wire piezometers (VWPs)	(a) Weekly inspections to ensure integrity of VWPs and to ensure telemetry data is downloading to a central storage location.	As shown in Figure 12 of Schedule 1
4.	Processing plant and associated infrastructure	(a) Stormwater to be managed so that contaminated or potentially contaminated stormwater is captured to prevent release into the environment; (b) Routine shift inspection for spillage and sump clearance and recording of spills/incidents; and (c) Dust suppression to be used on crushing circuit as required.	As shown in of Schedule 1
5.	Paste plant	(a) Routine shift inspection for spillage and sump clearance and recording of spills/incidents.	As shown in of Schedule 1
6.	LNG power station and storage tanks	(a) Maintained and operated in accordance with the requirements as specified in condition 2.	As shown in of Schedule 1
7.	Two wastewater treatment plants (WWTP)	(a) Maintained and operated in accordance with the requirements as specified in condition 2.	As shown in of Schedule 1
8.	Landfill	(a) Waste to be placed in trenches and covered on a weekly basis. (b) The type and volume of waste disposed of to landfill facility must be recorded; (c) Fencing at the putrescible landfill facility will be inspected monthly for damage and cleared of waste; (d) Maintain signage at the landfill that	As shown in of Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		clearly defines what waste is authorised for acceptance; (e) Trenches to be a maximum of 30m long, by 4m wide, by 4m deep; (f) The base of the landfill must be maintained at least 5 m from groundwater level, as determined by the monitoring bore required by condition 5 (g) Authorised waste for acceptance: i. Clean fill; ii. Inert Type 1 waste; iii. Inert Type 2 waste; iv. Putrescible waste; v. Special Type 1 waste; and vi. Other wastes that comply with the class II criteria as defined in the Landfill Definitions.	

Emissions and discharges

22. The works approval holder must ensure that the emissions specified in Table 8 are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 8: Authorised emission/discharge points

Emission	Discharge point	Discharge point location
Tailings from Kathleen Valley project	Tailings storage facility 1 (TSF1)	TSF1 as shown in Figure 3 of Schedule 1
Wastewater from the Process plant WWTP treated to the following criteria: • Total suspended solids <30 mg/L • Total dissolved solids <1000 mg/L • Biological oxygen demand <20 mg/L • E. coli <10 Cfu/100mL • Residual free chlorine <2mg/L • Total nitrogen <30 mg/L • Total phosphorus <8 mg/L pH 6.5 – 8.5		
Wastewater from the Accommodation Village WWTP treated to the following criteria: • Total suspended solids <30 mg/L • Total dissolved solids <1000 mg/L • Biological oxygen demand <20 mg/L • E. coli <10 Cfu/100mL • Residual free chlorine <2mg/L • Total nitrogen <2 mg/L • Total phosphorus <2 mg/L	Tailings storage facility 1 or discharge for re-use in construction and dust suppression	TSF1 as shown in Figure 3 of Schedule 1, roads and foundations within prescribed premise boundary

Emission	Discharge point	Discharge point location
pH 6.5 – 8.5		
Waste gases from six LNG exhaust stacks and five backup diesel exhaust stacks: NOx, CO, unburned hydrocarbons (nil SO_2 or particulate matter)	Six LNG exhaust stacks Five back up diesel exhaust stacks	Exhaust stack coordinates as per Table 13 of Schedule 2.

Groundwater monitoring during time limited operations

23. The works approval holder must monitor groundwater during time limited operations for concentrations of the identified parameters in accordance with Table 9:

(a) at the corresponding monitoring location;

(b) for the corresponding parameters;

(c) in the corresponding unit;

(d) with the corresponding limit;

(e) at no less than the corresponding frequency;

(f) using the corresponding method,

as set out in Table 9.

Table 9: Monitoring of ambient groundwater concentrations during time limited operations

Monitoring location	Parameters	Triggers management action	Limit	Unit	Frequency	Sampling Method
Three pairs of TSF1 groundwater monitoring well(s) required by condition 4	Standing water level	6	4	mbgl	Monthly[1]	AS/NZS 5667.1 and AS/NZS 5667.11
	pH[2]	-	-	pH units	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations (e.g. operation of processing plant and tailings being deposited into TSF). AND A single sampling event undertaken between 120 and 180 calendar days following commencement	
	Electrical conductivity (EC)	-	-	µS/cm		
	Total Dissolved Solids	-	-	mg/L		
Three pairs of TSF1 groundwater monitoring well(s) required by condition 4	Aluminium (Al) Ammonium (NH_4) Antimony (Sb) Arsenic (total) – speciation if results above 13µg/L Barium (Ba) Beryllium (Be) Bismuth (Bi)	-	-	mg/L		

Monitoring location	Parameters	Triggers management action	Limit	Unit	Frequency	Sampling Method
	Boron (B) Caesium (Cs) Cadmium (Cd) Calcium (Ca)a Chloride (Cl) Chromium (total) – speciation if results above 5µg/L Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Lithium (Li) Magnesium (Mg) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Nickel (Ni) Nitrate (NO_3) Phosphate (PO_4) Potassium (K) Rubidium (Rb) Selenium (Se) Silver (Ag) Sodium (Na) Sulfate (SO_4^{2-}) Strontium (Sr) Tantalum (Ta) Tellurium (Te) Thallium (Tl) Thorium (Th) Tin (Sn) Uranium (U) Total Sulfur Zinc (Zn)				of time limited operations (e.g. operation of processing plant and tailings being deposited into TSF).	
Vibrating wire piezometers (VWP) as shown in	Phreatic surface	-	-	Pore water pressure	Monthly[1]	-

Monitoring location	Parameters	Triggers management action	Limit	Unit	Frequency	Sampling Method
Figure 12 of Schedule 2						

Note 1: Monthly monitoring is undertaken at least 15 calendar days apart.

Note 2: In-field non-NATA accredited analysis permitted.

Groundwater monitoring limit exceedances

24. The works approval holder must record, investigate, take corrective action and report to the CEO within 14 calendar days, in the event of a parameter in Condition 23 exceeding the corresponding limit or management action trigger.

25. The works approval holder must include the following information in the report referred to in Condition 24 in relation to any exceedances of any limit identified in that condition:

(a) the nature, volume and characteristics of the emissions or concentrations exceedance;

(b) the time and date when the exceedance occurred;

(c) whether any environmental impact occurred as a result of the exceedance and, if so, what that impact was and where the impact occurred;

(d) the details of the management action(s) taken pursuant with Condition 24 in response to the exceedance;

(e) the details and result of any investigation undertaken into the cause of the exceedance; and

(f) what action has been taken, or will be taken, to prevent the exceedance occurring again and for the purpose of minimising the likelihood of pollution or environmental harm.

Compliance reporting – Time Limited Operations

Groundwater monitoring reporting requirements

26. The works approval holder must submit to the CEO, within 30 calendar days of each sampling event, a groundwater monitoring report for monitoring undertaken associated with condition 23 and must include:

(a) a clear statement of the scope of work carried out;

(b) a description of the field methodologies employed;

(c) a summary of the field and laboratory quality assurance / quality control (QA/QC) program;

(d) copies of the field monitoring records and field QA/QC documentation;

(e) an assessment of reliability of field procedures and laboratory results;

(f) a tabulated summary of results, as well as all raw data provided in an accompanying Microsoft Excel spreadsheet digital document/file (or a

compatible equivalent digital document/file), with all results being clearly referenced to laboratory certificates of analysis;

(g) a diagram with aerial image overlay showing all monitoring locations and depicting groundwater level contours, flow direction and hydraulic gradient (relevant site features including discharge points and other potential sources of contamination must also be shown);

(h) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites;

(i) an interpretive summary and assessment of results against previous monitoring results;

(j) an interpretive summary and assessment of the results against relevant assessment levels for water, as published in the Guideline Assessment and management of contaminated sites; and

(k) trend graphs to provide a graphical representation of historical results and to support the interpretive summary.

Note: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*

Monitoring of water balance

27. The works approval holder must review and assess the water balance for the TSF 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;

(e) volume of treated wastewater deposited; and

(f) estimate of seepage losses.

Monitoring – power station emissions

28. The works approval holder must undertake monitoring specified in Table 10 during time limited operations for the LNG and diesel power station.

Table 10 Emission monitoring during time limited operations

Monitoring points	Parameter	Units[1]	Averaging period	Frequency	Method
Each new power generator stack as listed in Table 13 Schedule 2.	Volumetric flow rate	m^3/s	Minimum 30 minutes	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations	USEPA Method 2
	Oxides of Nitrogen (NOx)	mg/m^3			USEPA Method 7D or 7E

Note 1: All units are referenced to STP dry

29. The works approval holder must ensure that all monitoring equipment used to comply with condition 28 is calibrated in accordance with the manufacturer's specifications.

30. The works approval holder must ensure that all non-continuous sampling and analysis undertaken required by condition 28 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Monitoring – Accommodation Village WWTP

31. The works approval holder must undertake monitoring specified in Table 11 during time limited operations for the Accommodation Village wastewater treatment plant.

Table 11 Emission monitoring during environmental commissioning phase

Monitoring points	Parameter	Performance criteria	Units	Frequency	Method
Treated wastewater outlet for Accommodation Village Wastewater treatment plant	Total suspended solids	<30	mg/L	A single sampling event undertaken between 30 and 60 calendar days following commencement of time limited operations	AS/NZS 5667.1
	Total dissolved solids	<1000			
	Biological oxygen demand	<20			
	Residual free chlorine	<2			
	Total nitrogen	<2			
	Total phosphorus	<2			
	E. coli <10	<10	Cfu/100mL		
	pH 6.5 – 8.5	6.5 – 8.5	pH units		

32. The works approval holder must ensure that all monitoring equipment used to comply with condition 31 is calibrated in accordance with the manufacturer's specifications.

33. The works approval holder must ensure that all non-continuous sampling and analysis undertaken required by condition 31 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Compliance reporting – Time Limited Operations

34. 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.

35. The works approval holder must ensure the report required by condition 34 includes the following:

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

(b) a summary of monitoring results obtained during time limited operations under conditions 6, 23, 24, 25, 27, 28 and 31;

(c) a summary of the environmental performance of all infrastructure as constructed or installed;

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

(e) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval

holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

36. 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.

37. 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 2 and 4;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 21;

(c) monitoring programmes undertaken in accordance with conditions 6, 23, 24, 25, 27, 28 and 31; and

(d) complaints received under condition 36.

38. The books specified under condition 37 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
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
ARI	average recurrence interval
AS1726	means the Australian Standard AS1726 *Geotechnical Site Investigations*
AS/NZS 2033	means the Australian Standard AS/NZS 2033: Installation of polyethlene pipe systems
AS/NZS 4129	means the Australian Standard AS/NZS 4129: fittings for polyethylene (PE) pipes for pressure applications
AS/NZS 4130	means the Australian Standard AS/NZS 4130 Polyethylene pipes for pressure applications
AS/NZS 4131	means the Australian Standard AS/NZS 4131 Polyethylene compounds for pressure pipes and fittings.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *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*).*
ASTM D1505	Means the ASTM international standard for *Density by Variable Density Gradient Column*
ASTM D1603	Means the ASTM international standard for *Standard Test Method for Carbon Black Content in Olefin Plastics*
ASTM D5299/D5299M-18	means the ASTM international standard for *Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities (*Designation: D5299/D5299M–18).
ASTM D638	means ASTM international standard for *Standard Test Method for Tensile Properties of Plastics*
ASTM D4716	Means ASTM international standard for *Standard Test Method for Determining the (In-plane) Flow Rate per Unit Width and Hydraulic Transmissivity of a Geosynthetic Using a Constant Head*

Term	Definition
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
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).
Guideline: Assessment and management of contaminated sites	means the document titled *Assessment and management of contaminated sites, Contaminated sites guidelines* (Department of Environment Regulation, December 2014), as amended from time to time.

Term	Definition
m	metres
mbgl	metres below ground level
mg/L	milligrams per litre
m/s	metres per second
µS/cm	microsiemens per centimetre
mm	millimetres
Mtpa	mega tonnes per annual period
NATA	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.
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
premises	the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
TDS	total dissolved solids
TSF	tailings storage facility
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.
USEPA Method 2	means the United States Environmental Protection Authority *Method 2 – Determination of Stack Gas Velocity Flow Rate*
USEPA Method 5	means the United States Environmental Protection Authority *Method 5 – Determination of Particulate Matter Emissions from Stationary Sources*
USEPA Method 6	means the United States Environmental Protection Authority *Method 6 – Determination of Sulfur Dioxide Emissions from Stationary Sources*
USEPA Method 7	means the United States Environmental Protection Authority *Method 7 – Determination of Nitrogen Oxide Emissions from Stationary Sources*

Term	Definition
USEPA Method 10	means the United States Environmental Protection Authority *Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources*
USEPA Method 17	means the United States Environmental Protection Authority *Method 17 – Determination of Particulate Matter Emissions from Stationary Sources*
VWP	Vibrating wire piezometers
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.
WWTP	Wastewater treatment plant

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

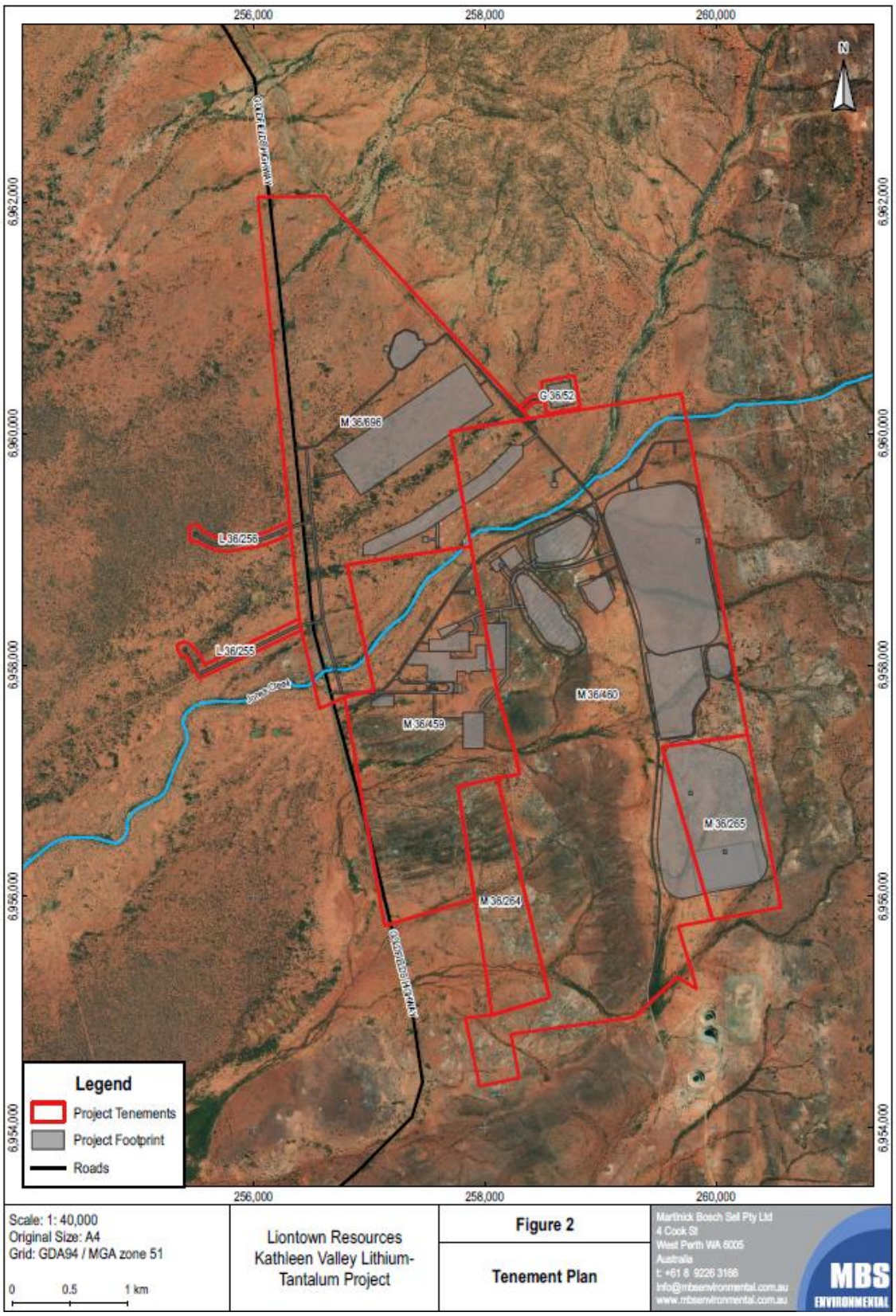

Figure 1: Project tenements

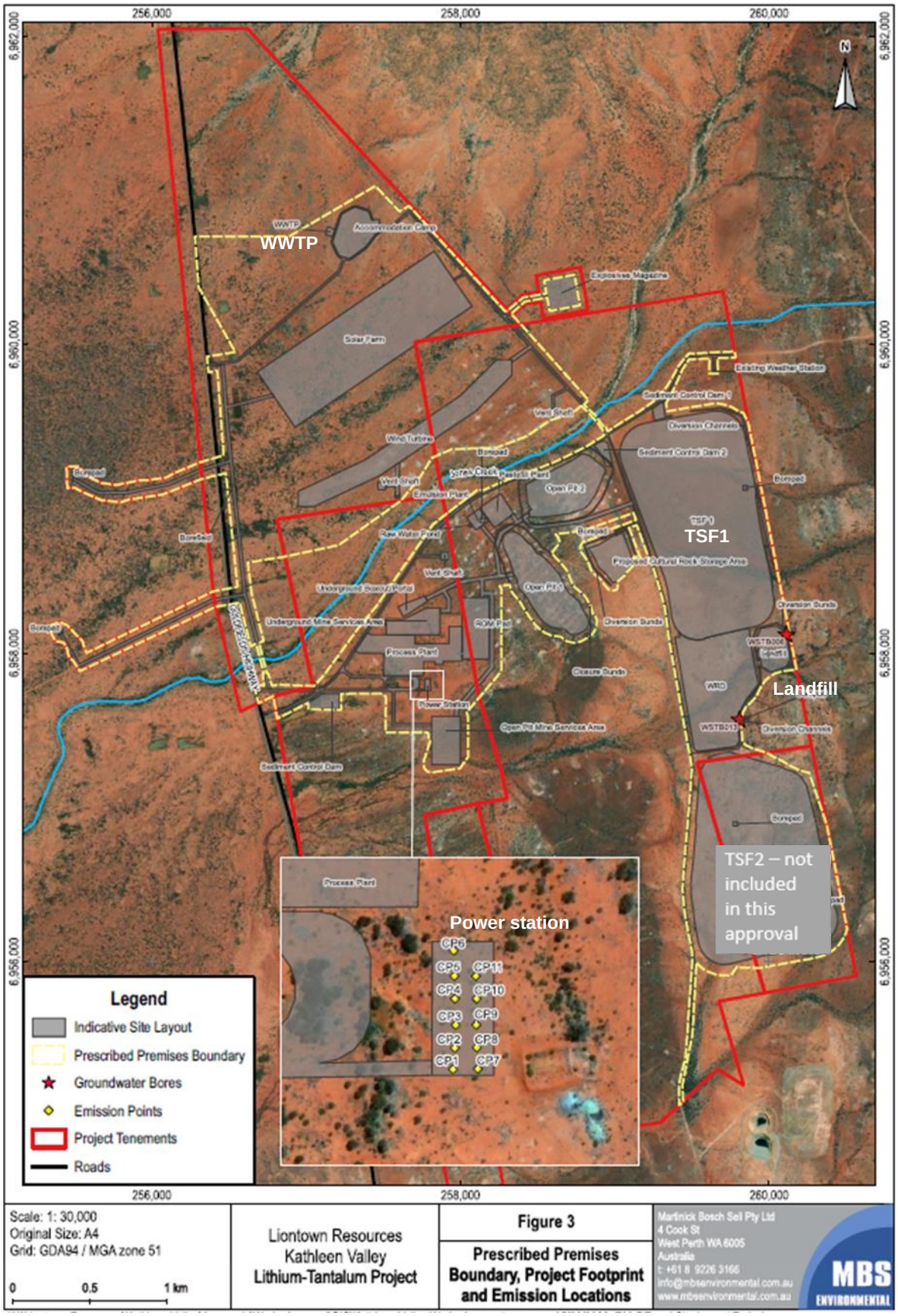

Figure 2 Prescribed Premises Boundary and Site Infrastructure and Layout

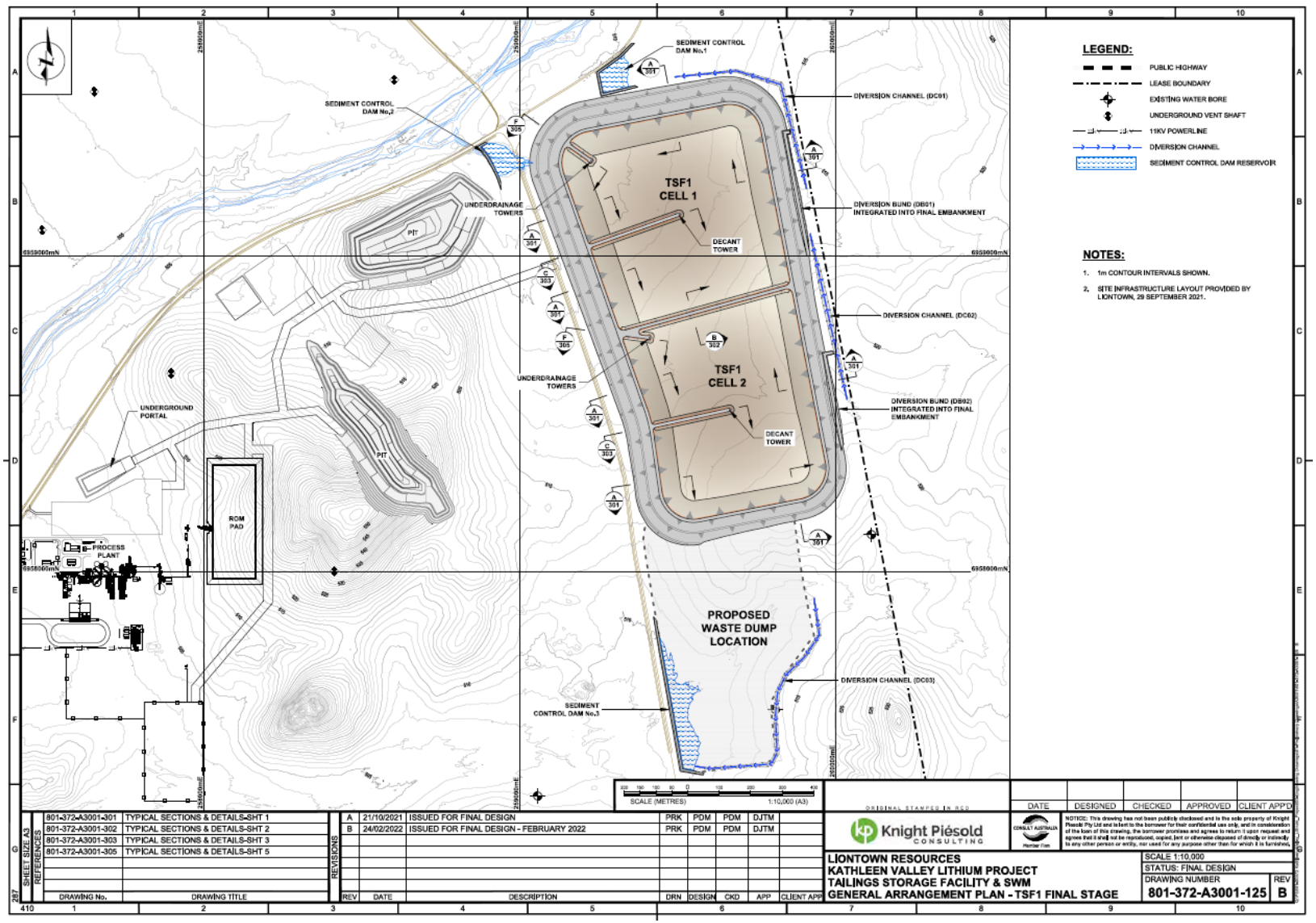

Figure 3 Tailings Storage Facility 1 (cell 1 and cell 2)

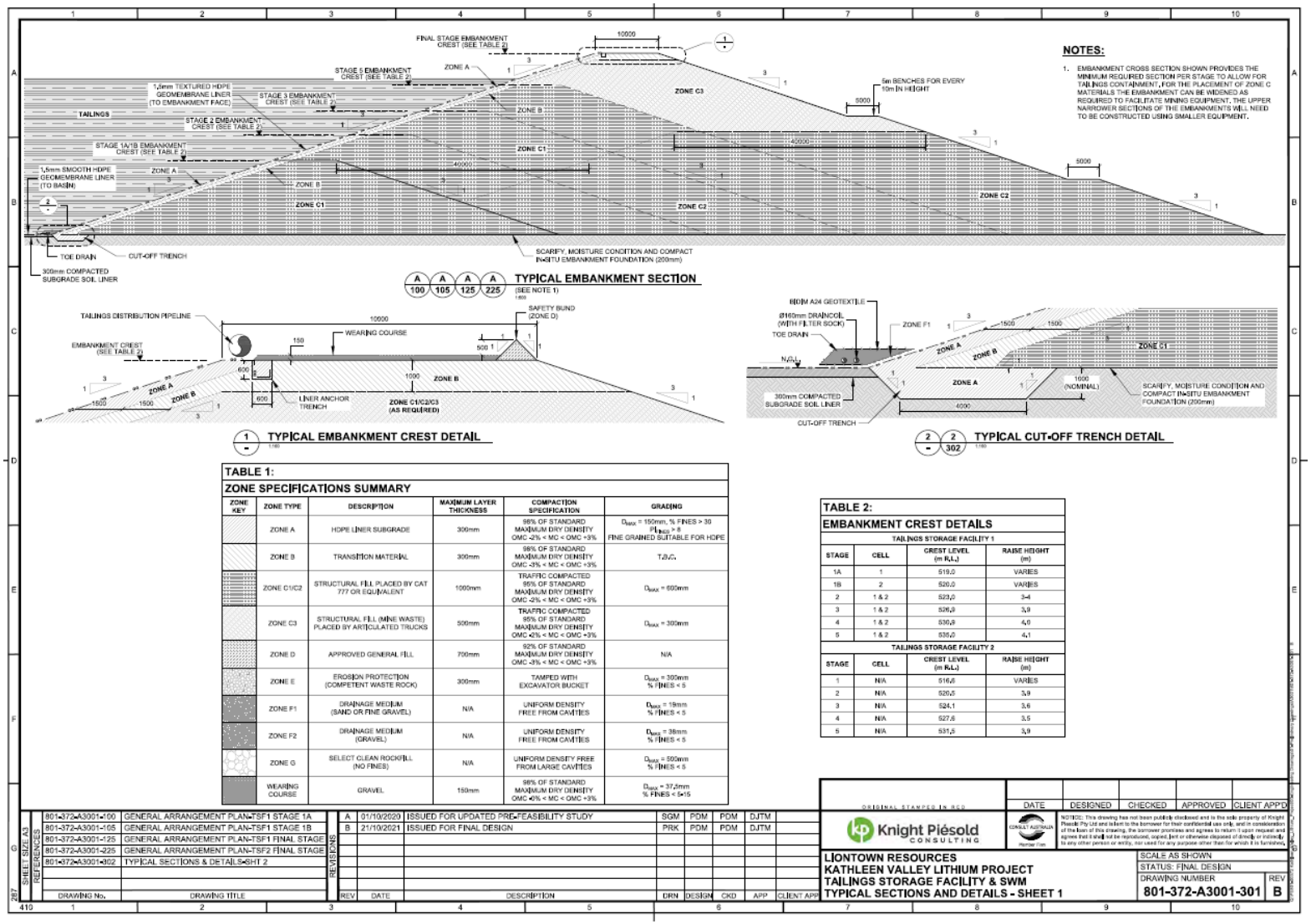

Figure 4 Tailings Storage Facility Typical Section Detail – 801-372-A3001-301

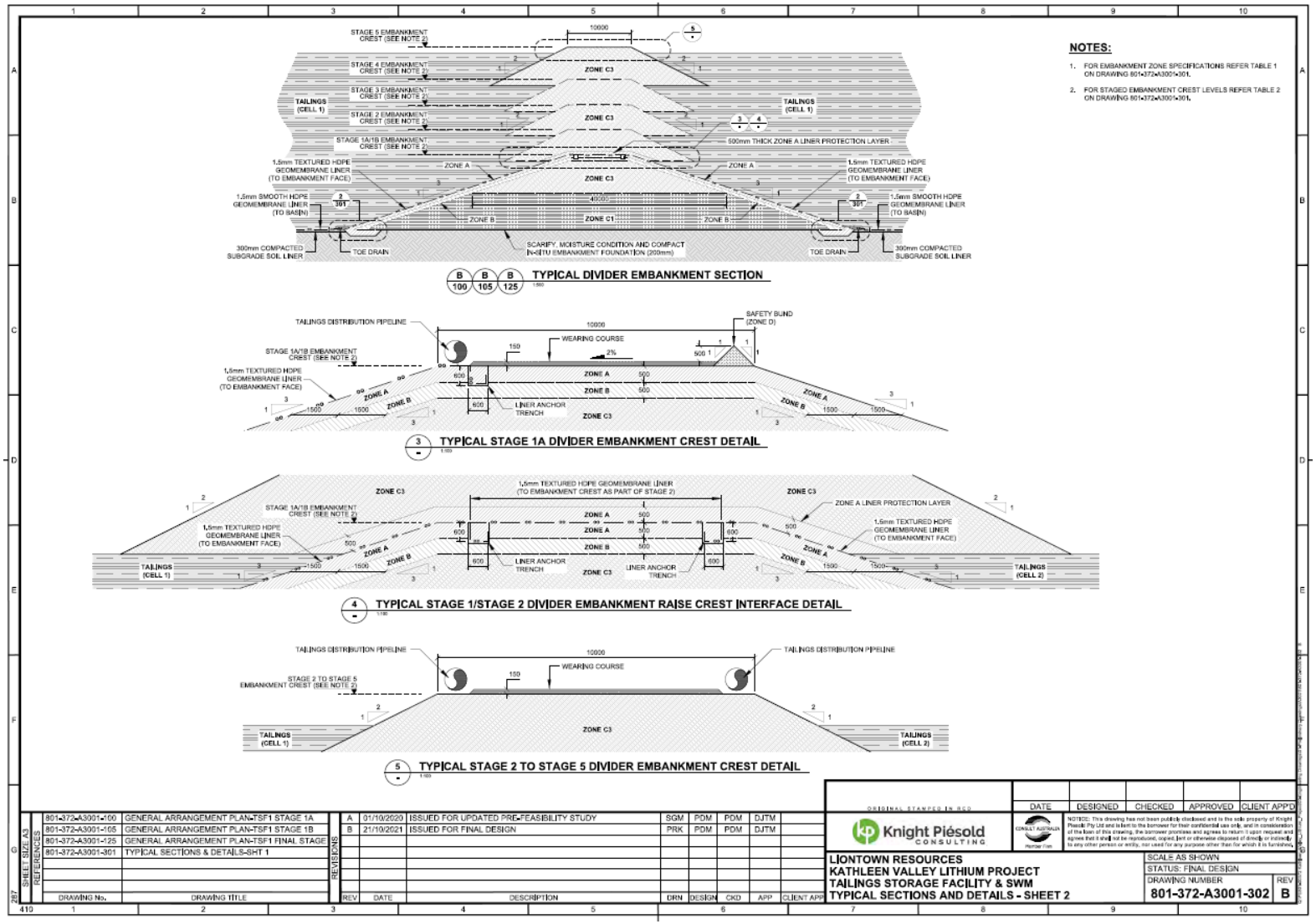

Figure 5 Tailings Storage Facility Typical Section Detail – 801-372-A3001-302

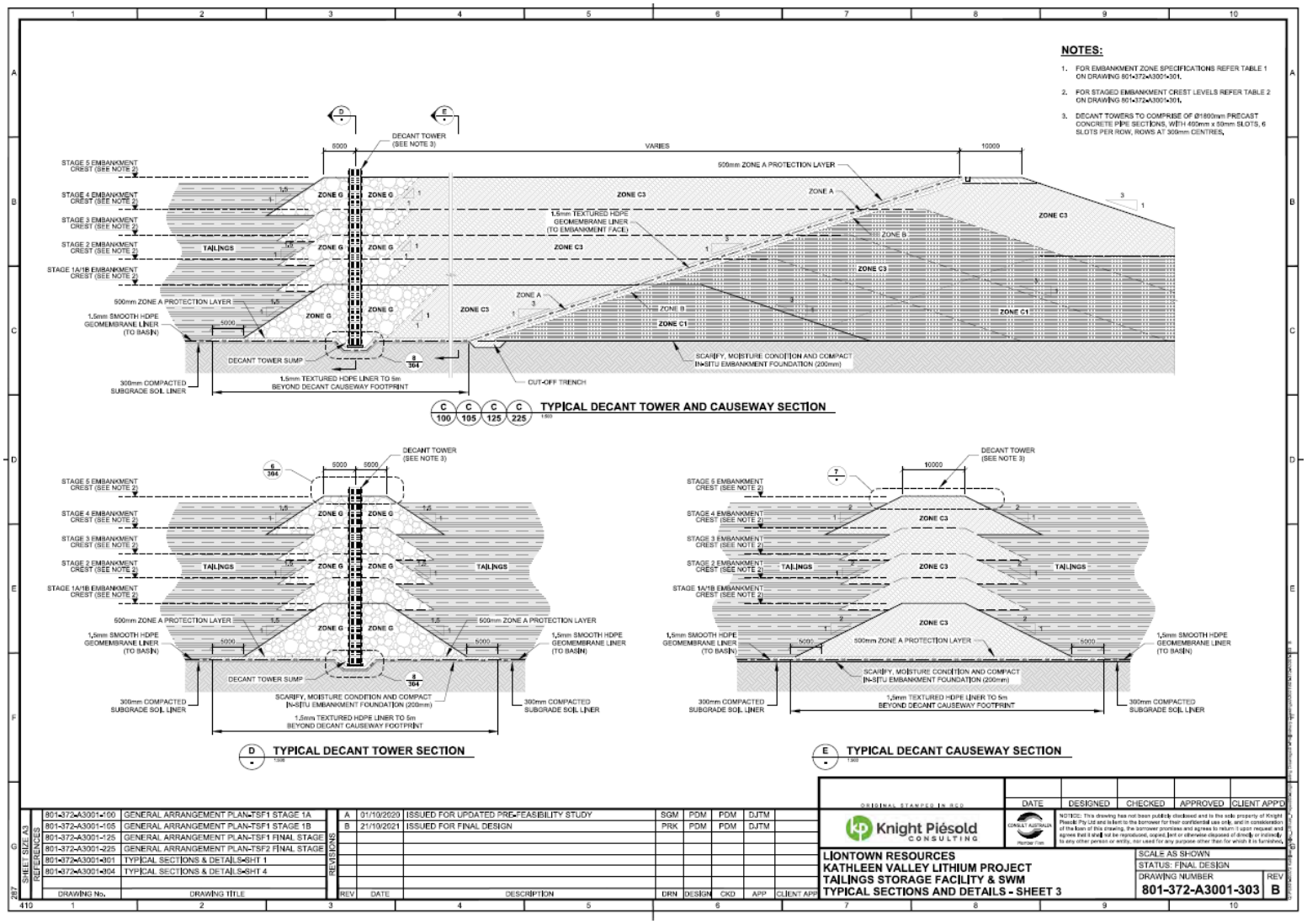

Figure 6 Tailings Storage Facility Section Detail, Decant Tower – 801-372-A3001-303

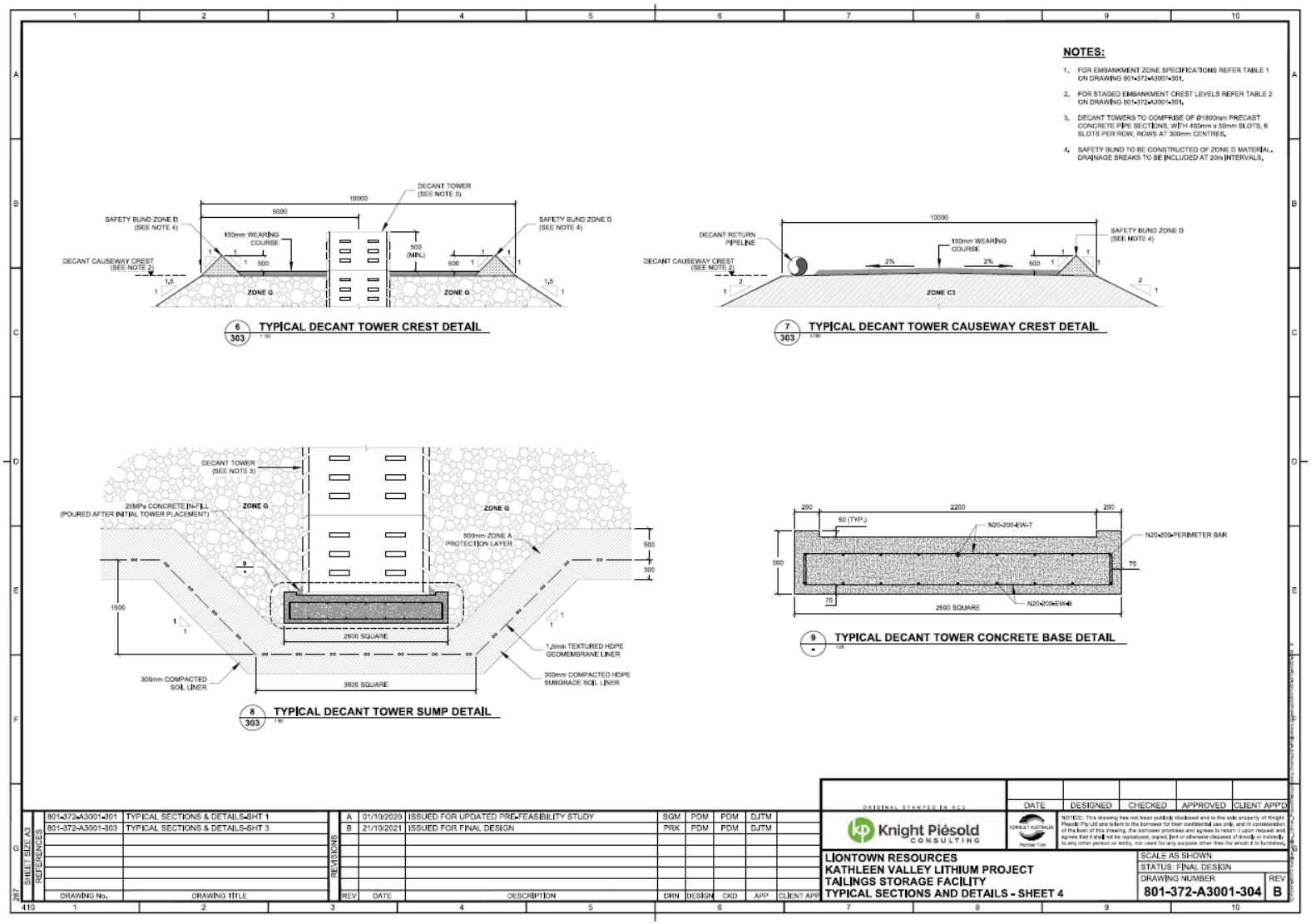

Figure 7 Tailings Storage Facility Section Detail, Decant Tower – 801-372-A3001-304

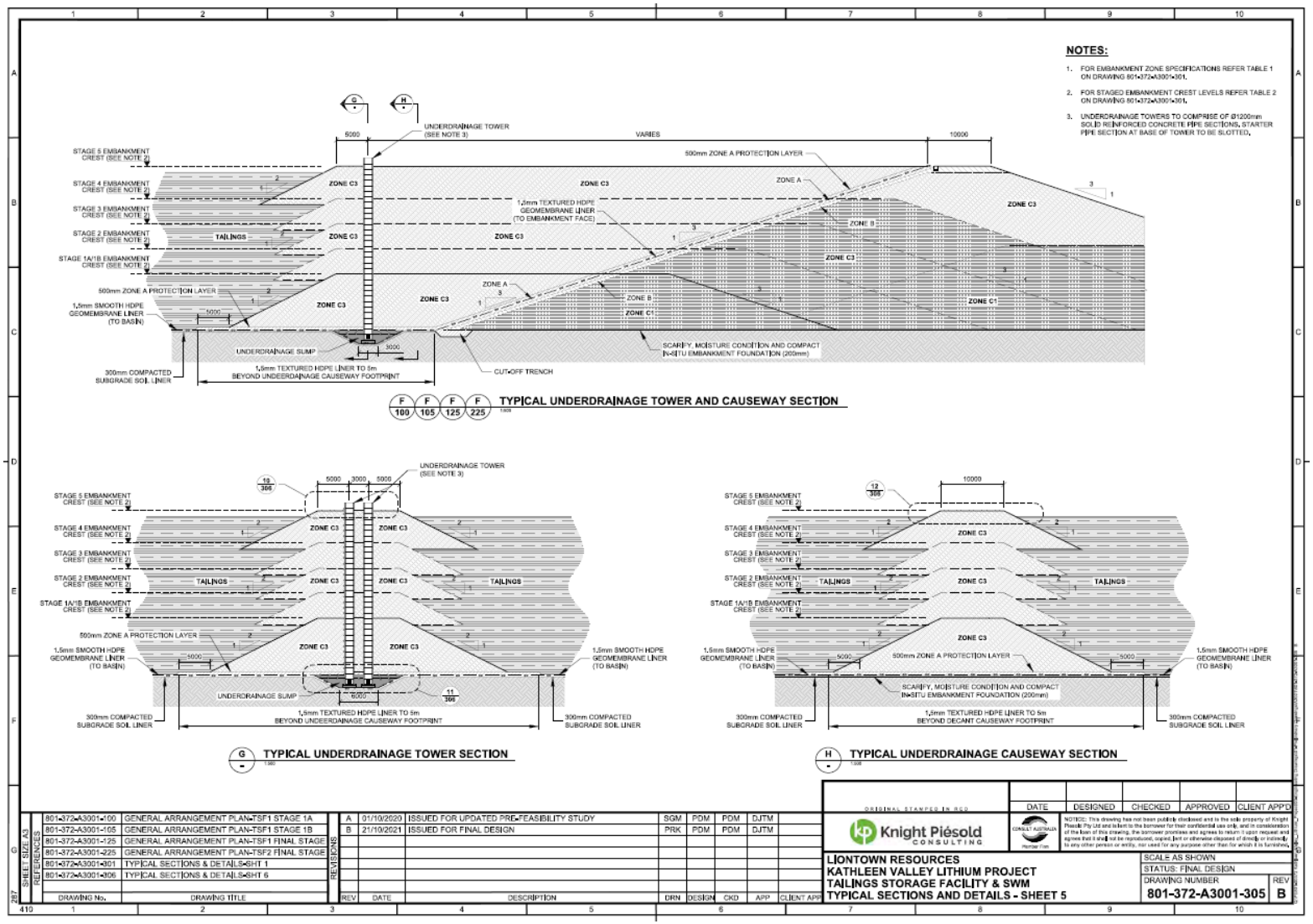

Figure 8 Tailings Storage Facility Section Detail, Underdrainage – 801-372-A3001-305

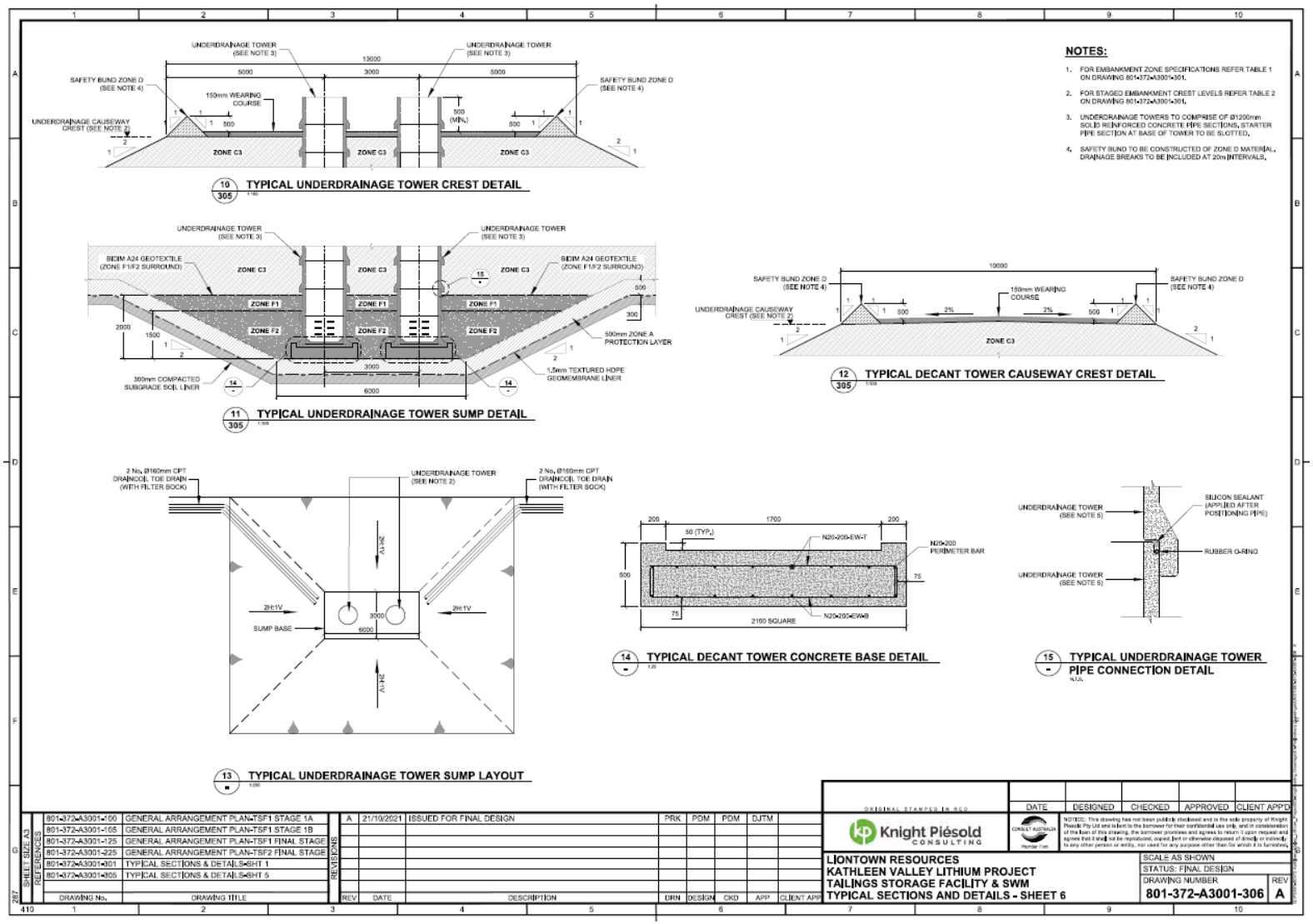

Figure 9 Tailings Storage Facility Section Detail, Underdrainage – 801-372-A3001-306

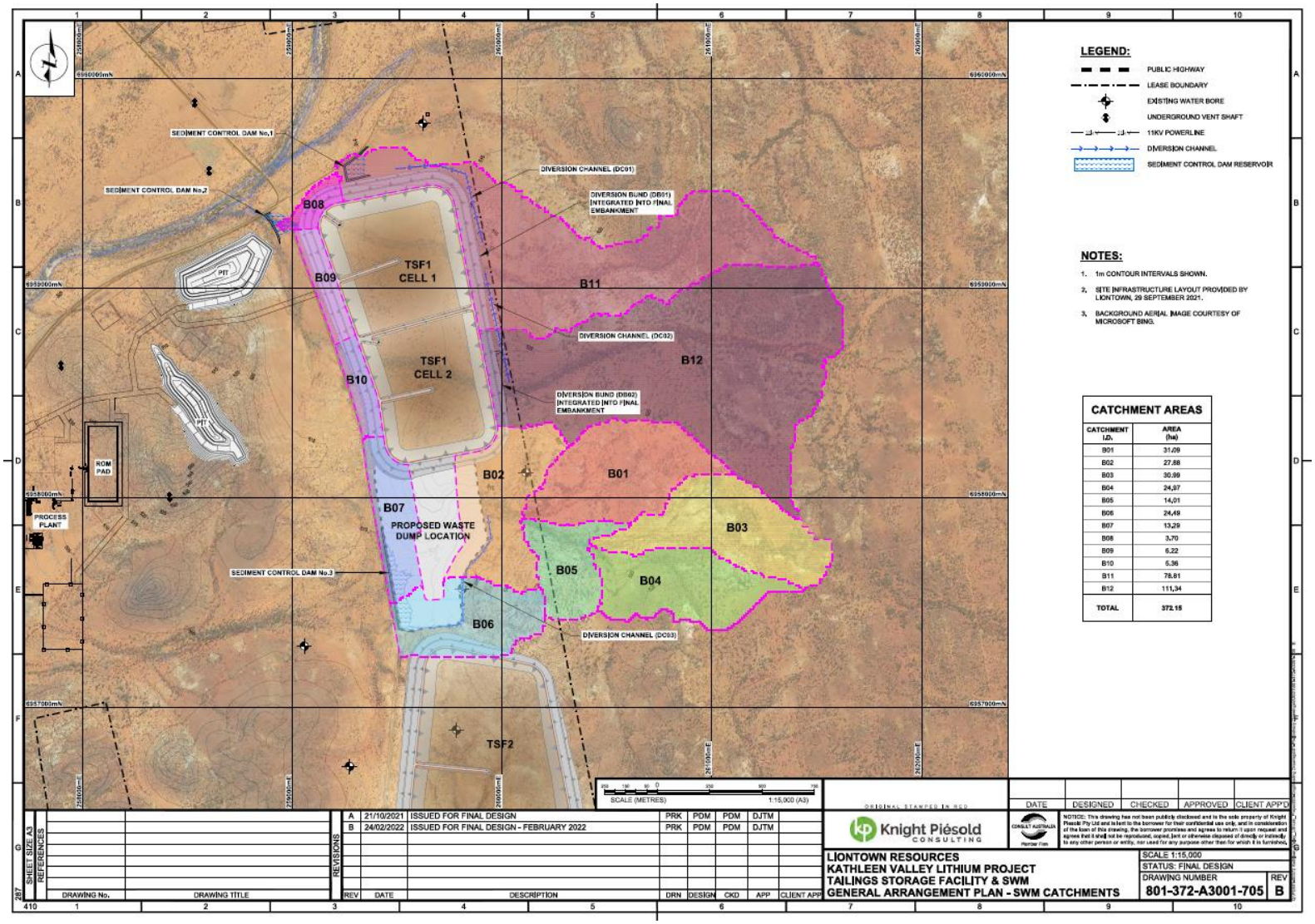

Figure 10 Tailings Storage Facility Surface Water Management – 801-372-A3001-705

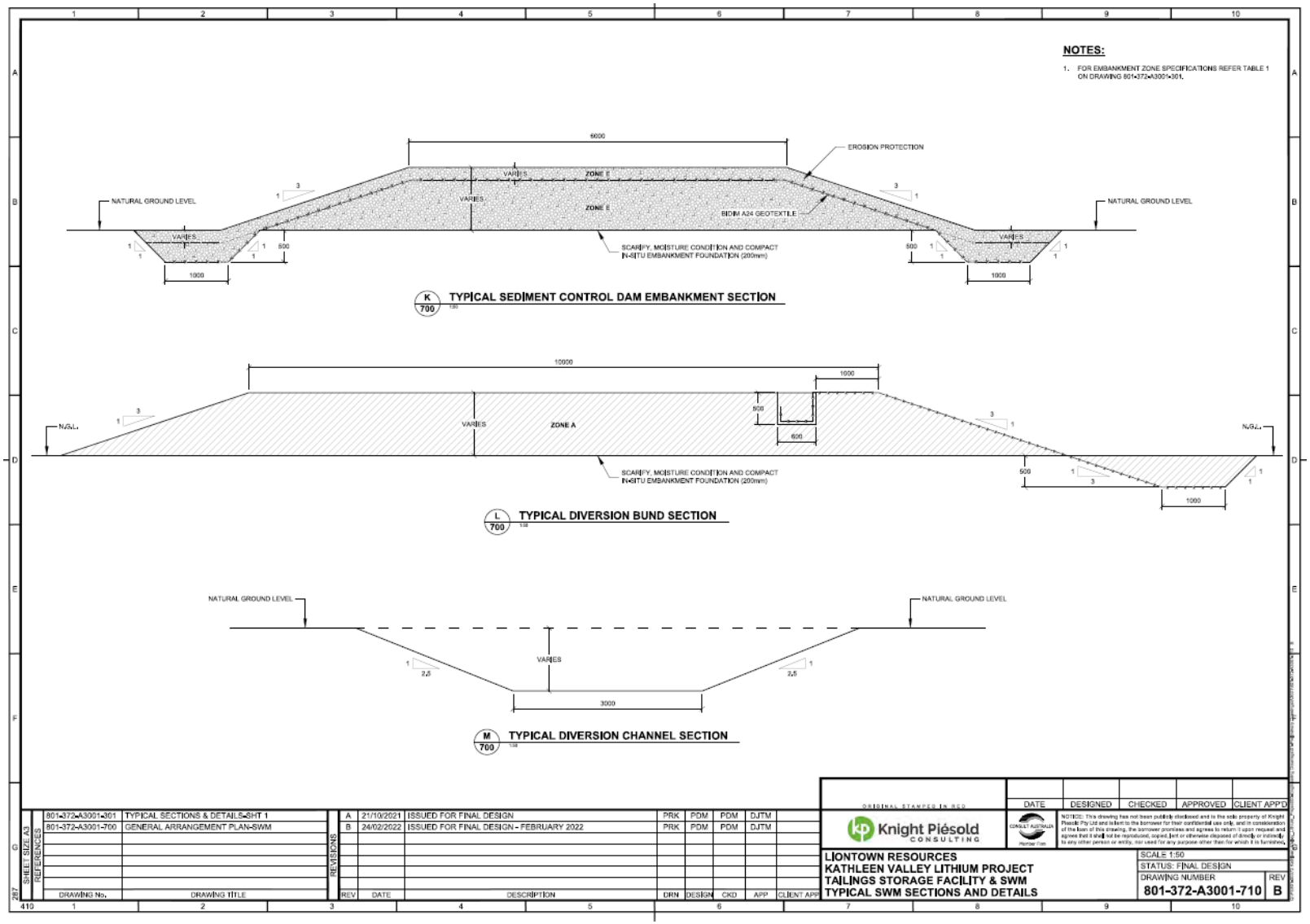

Figure 11 Tailings Storage Facility Surface Water Management, Typical Diversion Bund Section– 801-372-A3001-710

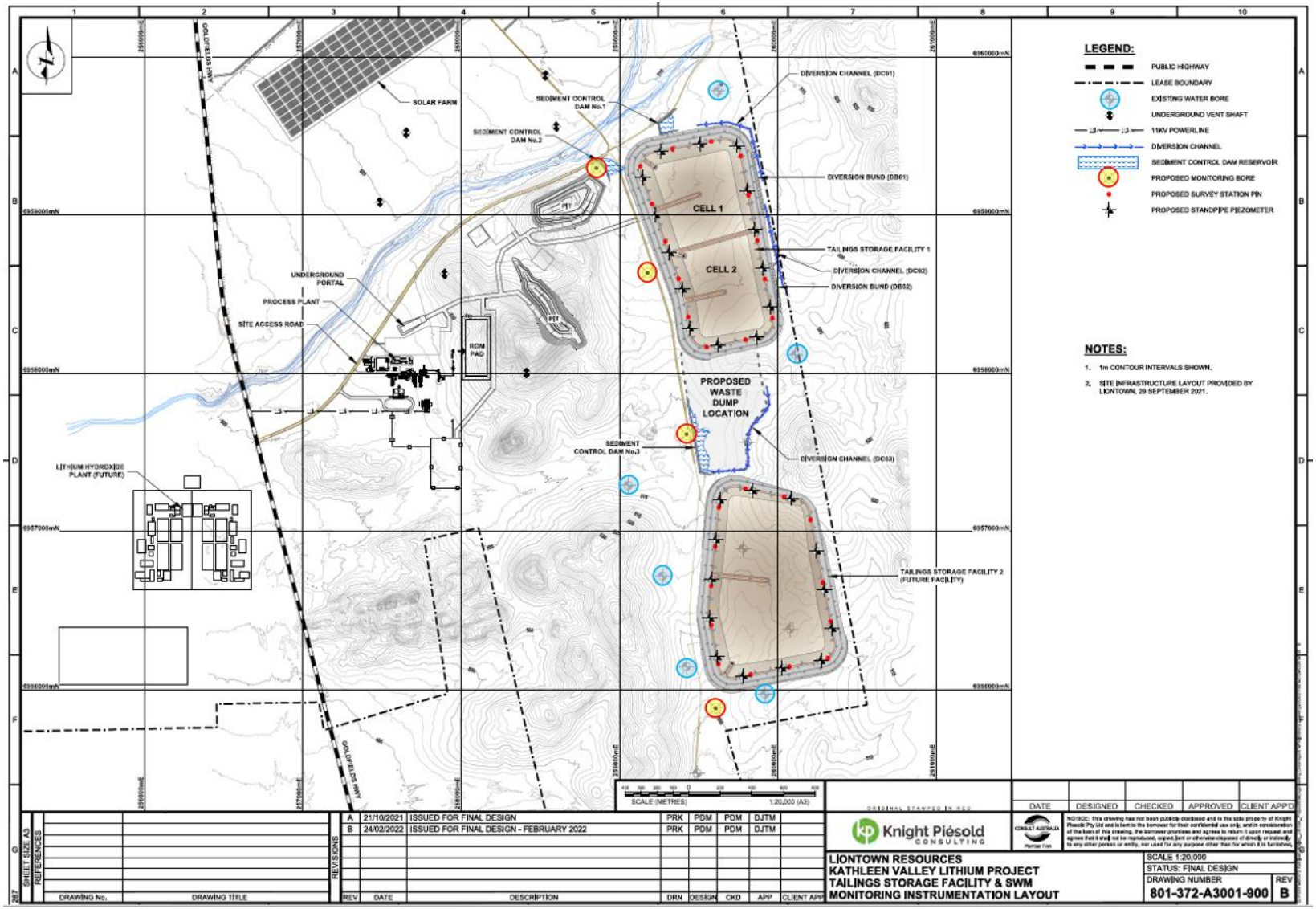

Figure 12 Tailings Storage Facility Monitoring Instrumentation Layout, TSF 1 only approved under W6687/2022/1 – 801-372-A3001-900

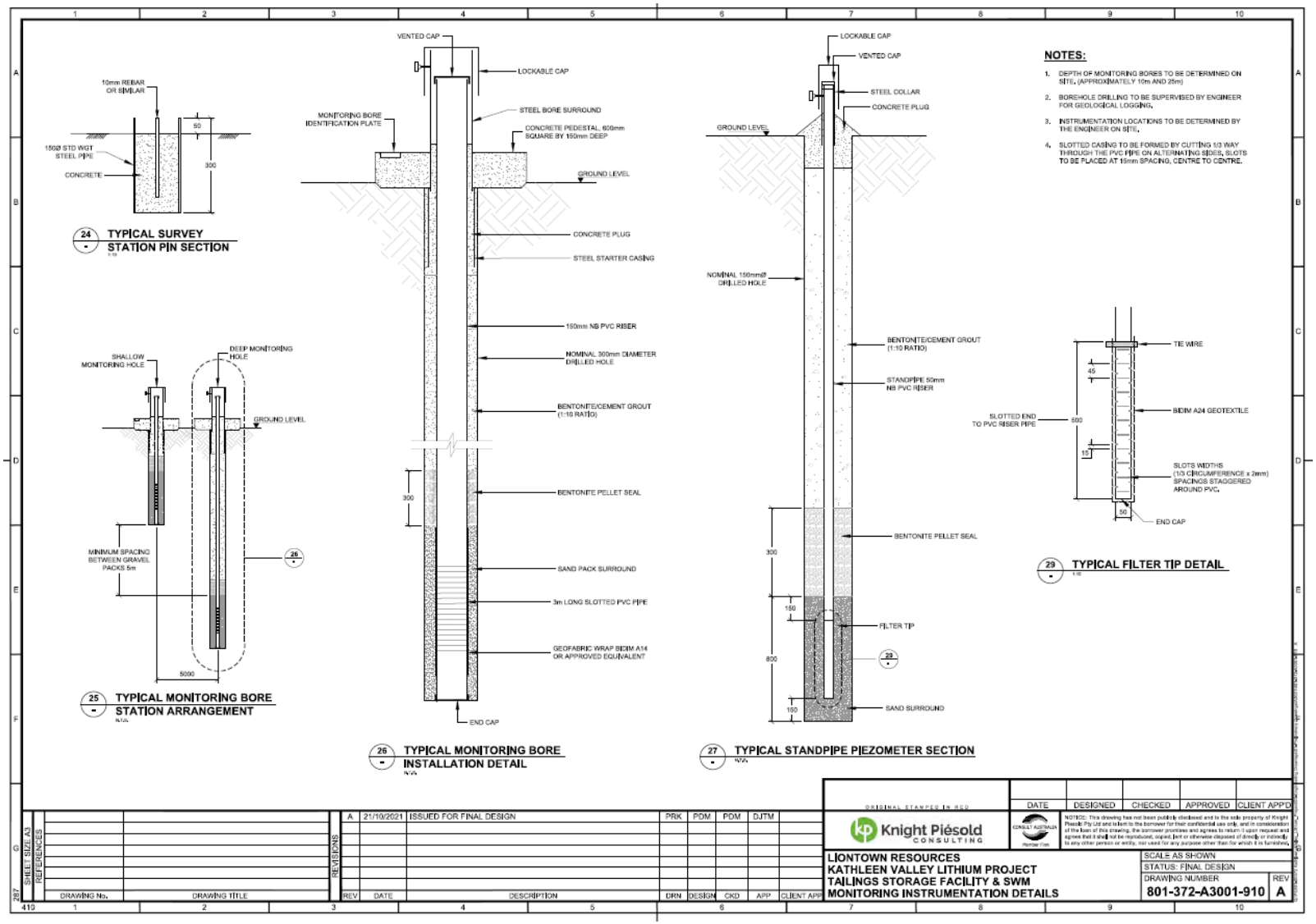

Figure 13 Tailings Storage Facility Monitoring Instrumentation Detail - 801-372-A3001-910

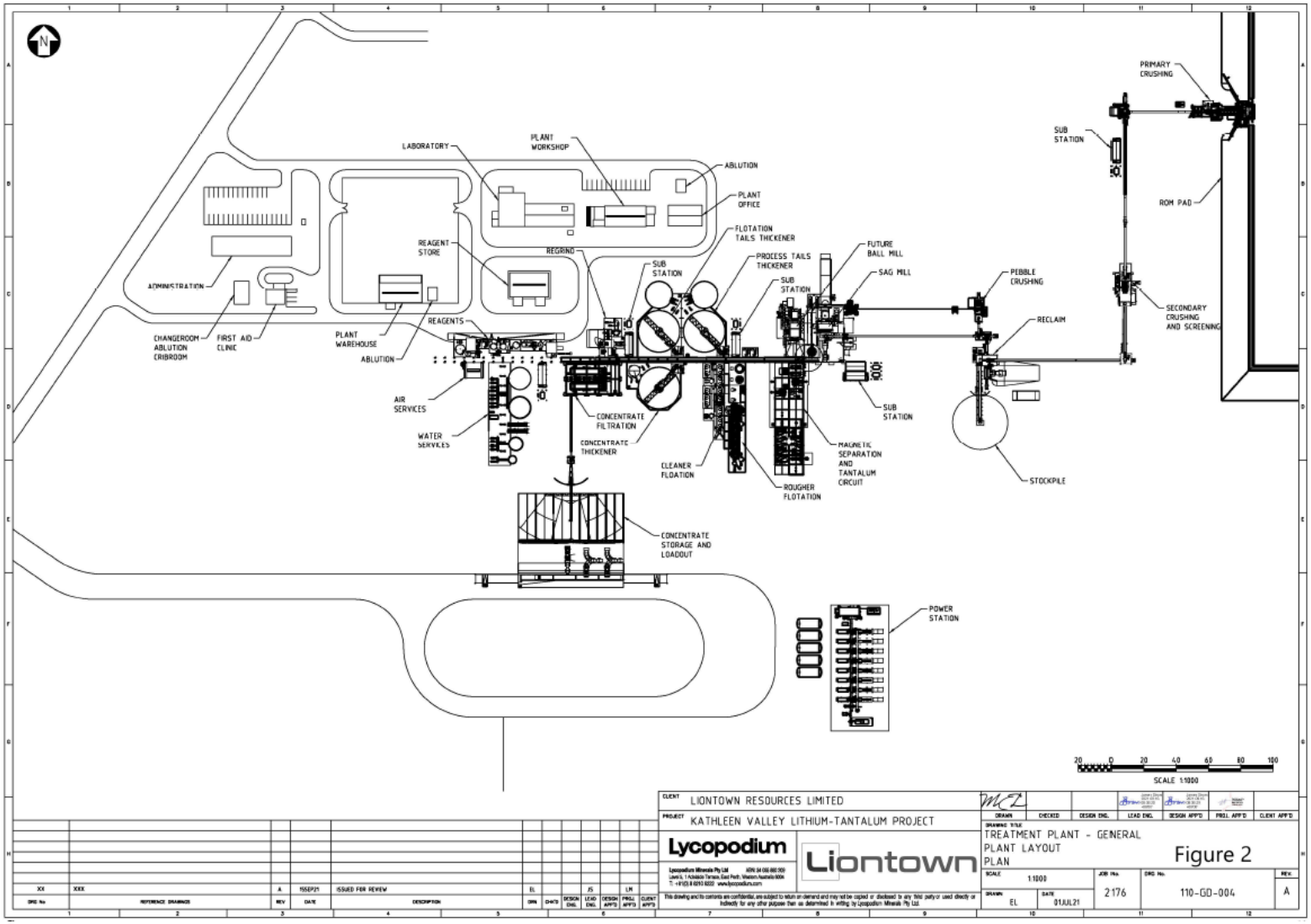

Figure 14 Process Plant Layout

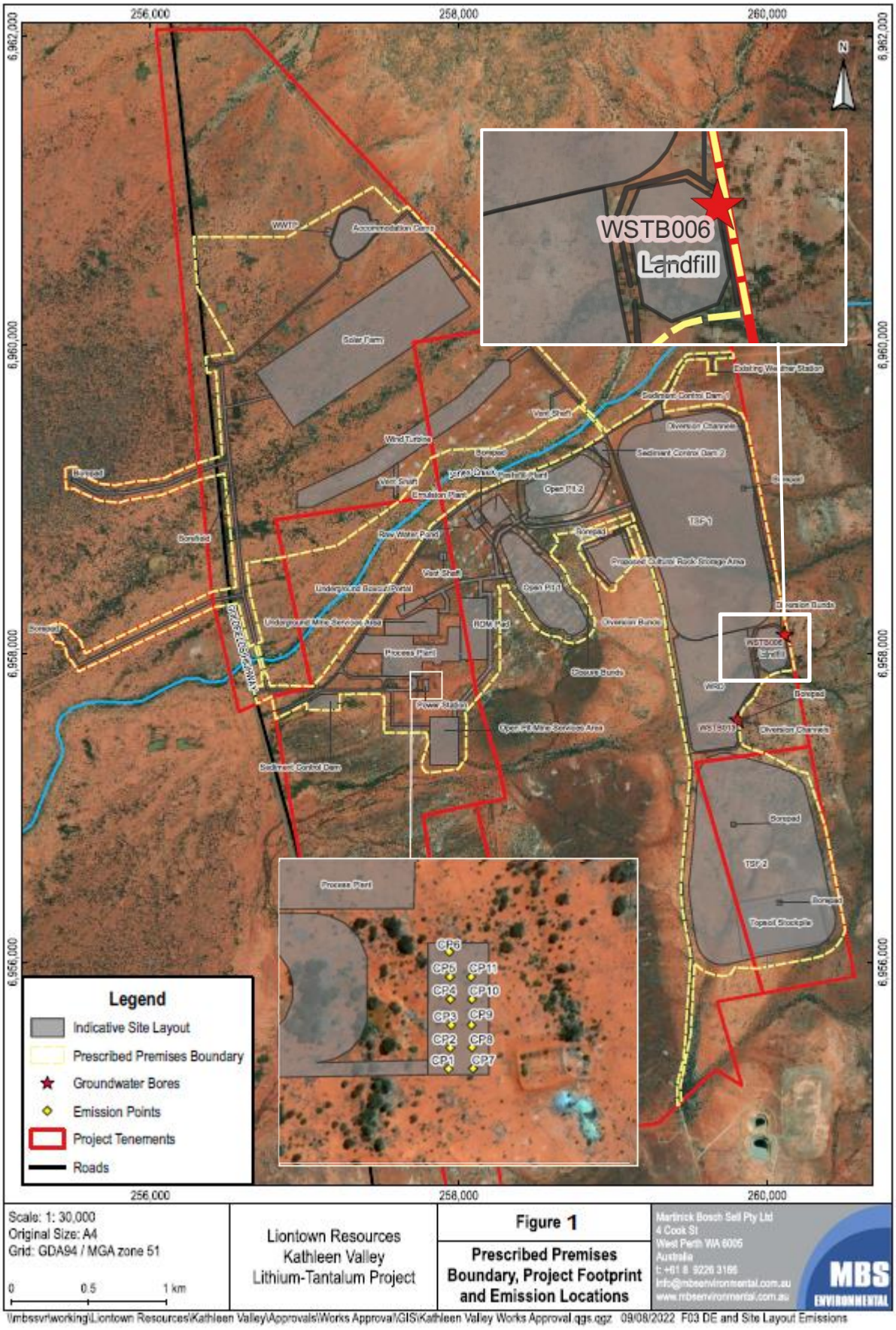

Figure 15 Location of WSTB006

Schedule 2: Power Station Exhaust Stack Coordinates

The premises boundary is defined by the coordinates in Table 13.

Table 13: Power Station Exhaust Stack Coordinates

Centrepoint Number	Easting	Northing
CP1	6957758.437	257780.707
CP2	6957768.437	257780.734
CP3	6957778.437	257780.761
CP4	6957818.437	257780.868
CP5	6957828.437	257780.895
CP6	6957758.441	257793.072
CP7	6957818.437	257780.868
CP8	6957828.437	257780.895
CP9	6957758.441	257793.072
CP10	6957768.441	257793.099
CP11	6957778.441	257793.126