Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6650/2022/1
Works approval holder	Redcliffe Project Pty Ltd
ACN	119 494 772
Registered business address	Level 19, 58 Mounts Bay Road, Perth WA 6000
DWER file number	DER2021/000746
Duration	4/11/2022 to 3/11/2025
Date of issue	4 November 2022
Date of amendment	28 February 2025
Premises details	Redcliffe Gold Project Mining tenement M37/1276, M37/1286, M37/1295, M37/1348 and M37/233

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production capacity
Category 6: Mine dewatering	471,500 tonnes per annual period
Category 85: Sewage facility	25 m^3 per day
Category 64: Class II putrescible landfill	750 tonnes per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 28 February 2025, by:

Fiona Westcott

Digitally signed by Fiona Westcott
Date: 2025.02.28 12:37:46 +08'00'

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

Works approval history

Date	Reference number	Summary of changes
4/11/2022	W6650/2022/1	Works approval granted.
28/02/2025	W6650/2022/1	Works approval amendment to modify dewatering pipeline design and construction / installation requirements.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

  (i) if dated, refers to that particular version; and

  (ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must construct and/or install the infrastructure and/or equipment;

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

(b) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Dewatering pipelines and brine pipelines (includes all pipelines from dewater storage or treatment infrastructure (oily water separator) at the truck wash facility)	(a) Pipeline without telemetry to be provided with secondary containment adequate to contain any spill for a period equal to the time between routine inspections; or (b) Pipeline to be installed with telemetry system and auto shut-off to detect and control leaks; and (c) Installed with flow meters at discharge points to Redcliffe, Mesa and Mertondale No. 5 pits.	Dewatering pipeline route from the mining areas to the pits to be located as shown in Figure 2, Schedule 1. Brine pipelines and pipelines from/between storage and treatment facilities are not specified
2.	Turkey's nests/dams for the storage of dewater effluent/RO Brine/Truck washdown water	(a) HDPE lined; and (b) sized to contain a one in one hundred-year 72 hour ARI rainfall event	Not specified
3.	Redcliffe Landfill and Hub Landfill	The works approval holder must construct the landfills so that: (a) a separation distance of at least 3 m must be maintained between the base of the landfill trenches and surrounding groundwater levels; (b) a fence surrounds the landfill to prevent access to fauna; and (c) trenches are bunded to prevent surface water ingress.	Figure 2 and Figure 3 of Schedule 1.

	Infrastructure	Design and construction / installation requirements	Infrastructure location
4.	Wastewater Treatment Plant (WWTP)	(a) installation of a containerized WWTP completed as required by the manufacture's specifications; (b) stormwater to be prevented from entering the WWTP system and storage infrastructure; (c) all sewage storage and treatment tanks vessels, transfer pipelines must be impermeable and free of leaks and defects; (d) capable to treat sewage to the following discharge limits: (i) pH 6.5 -8.5 (ii) 5-day BOD <20 mg/L (iii) TSS < 30mg/L (iv) TN < 30 (v) TP < 7.5 (vi) E. coli <1 000 cfu/100 mL (e) A volumetric flow meter must be installed on discharge outlet pipe to monitor volumes discharged to irrigation spray field; (f) Alarm system installed to notify the operation of: (i) pump failure; (ii) high tank levels; and (iii) tank overflows. (g) capable of storing a minimum of three days worth of effluent in the event of a discharge pump failure.	Figure 4 of Schedule 1.
5.	Wastewater Treatment Plant Irrigation spray field	(a) An irrigation spray field area must be at least 7,143m^2. (b) Sprinklers must be positioned to ensure even distribution of wastewater; and (c) Fence with visible safety signage installed around spray field.	Figure 4 of Schedule 1.
6.	Truck washdown facility	(a) Facility designed so all washdown water is captured and prevented from being released into the environment. (b) Installation of the oily water treatment system is completed as required by the manufacture's specifications; and (c) Oily water treatment system must be capable of treating the washdown water to <15 mg/L total petroleum hydrocarbons.	Not specified

Compliance reporting

2. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

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

3. The works approval holder must ensure that the Environmental Compliance Report required by condition 2(b), includes as a minimum the following:

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

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

(c) a schematic diagram of the dewatering network that shows the elements of the dewatering network and how the network has been designed to incorporate movement of dewater effluent between the mining voids, turkey's nests/dams and the final disposal point/s;

(d) photographs of each dewater effluent storage turkey's nests/dams and the pipelines that transport dewater effluent to and from the infrastructure;

(e) photographs of the truck washdown facility oily water separator and the pipelines that transfer dewater to and from the infrastructure; and

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

Time limited operations phase

Commencement and duration

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

5. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 7 (as applicable):

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 4 for that item of infrastructure; or

(b) until such time as a licence for that item of infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986* and only where this occurs prior to the time period specified in sub provision (a).

Time limited operations requirements and emission limits

6. During time limited operations, the works approval holder must ensure dust suppression activities using brine or excess dewater are carried out in a manner that minimises spray drift onto vegetation alongside roads and open areas.

7. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 2 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 2.

Table 2: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Dewatering pipelines and brine pipelines (includes all pipelines from turkeys nests/dams or treatment infrastructure (oily water separator) at the truck wash facility)	(a) visual inspections every 12 hours to check the integrity of the pipeline when in operation. (b) a written log is required to be maintained for each inspection, with the record of each inspection signed by the responsible person; and (c) weekly maintenance of bunds to maintain capacity.	Pipeline route from the mining areas to the pits to be located as shown in Figure 2, Schedule 1. Brine pipelines and pipelines from/between storage and treatment facilities are not specified
2.	Dewatering and brine pipeline telemetry system	(a) weekly checks of the integrity of telemetry when dewatering in operation; and (b) operated to trigger an automatic shutoff when the flow rate varies by more than 5% for 10 minutes or more than 10% for 2 minutes.	Not specified
3.	Turkey's nests/dams for the storage of dewater effluent/RO Brine/Truck washdown water	(a) a minimum freeboard of 500mm to be maintained at all times; and (b) visual inspections every 12 hours to check freeboard capacity	Not specified
4.	Redcliffe, Mesa and Mertondale No. 5 pits.	At least a 5 m freeboard must be maintained within the pits at all times.	Figure 2, Schedule 1
5.	Landfill trenches	(a) Waste must be placed in a defined trench or within an area enclosed by earthen bunds; (b) The following wastes can be disposed of to the landfill trenches: (i) Inert waste type 1; (ii) Putrescible waste; and (iii) Waste meeting the acceptance criteria for Class II landfill cells as defined within the Landfill Definitions (c) Where waste cannot be disposed of to landfill it must be removed from the premises for disposal at an appropriately licensed facility; (d) No stockpiling of waste is to occur; (e) The tipping area must be less than 30 m in length; (f) all reasonable and practical measures must be taken to ensure that no windblown waste	Figure 2 and Figure 3, Schedule 1

	Site infrastructure and equipment	Operational requirement	Infrastructure location
		escapes from the landfill area and that wind-blown waste is collected on at least a fortnightly basis and returned to the tipping area; (g) Sufficient stockpiles of inert cover material must be maintained at the Premises at all times; and (h) Deposited wastes must be covered at least fortnightly with inert cover material.	
6.	WWTP	(a) Flow meters must be maintained on the WWTP inlet and outlet to the irrigation spray field; (b) Sludge must be contained within sealed sludge tanks prior to removal by a licensed waste carried for disposal to an appropriately authorised facility; and (c) Spills of wastewater or chemicals outside of a vessel / container must be cleaned up immediately.	Figure 4, Schedule 1
7.	WWTP Irrigation spray field	Irrigation must be managed to prevent ponding and pooling of effluent on the ground surface of the irrigation discharge area.	Figure 4, Schedule 1

8. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 3 are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points

Source	Emission	Discharge point	Discharge point location
WWTP	Treated effluent	Sprinklers within the irrigation spray field.	Irrigation sprayfield as specified in Figure 4, Schedule 1.
Hub Pit	Dewater effluent	Redcliffe and Mesa pits Turkey's nests/dams.	Pits as specified in Figure 2, Schedule 1. Turkey's nests/dams for storage of dewater effluent not specified.
GTS Pit		Mertondale 5 pit	Pits as specified in Figure 2, Schedule 1.
Turkey's nests/dams for storage of dewater	Dewater effluent	Used for dust suppression within Premises.	Within the premises boundary as specified in Figure 1, Schedule 1.

Source	Emission	Discharge point	Discharge point location
effluent / Brine (from RO Plant)	Dewater effluent mixed with vehicle washdown water that has been treated in an oily water separator	Redcliffe, Mesa and Mertondale No. 5 pits.	Pits as specified in Figure 2, Schedule 1.
		Used for dust suppression within Premises.	Within the premises boundary as specified in Figure 1 of Schedule 1.
	Brine	Redcliffe and Mesa and Mertondale No. 5 pits.	Pits as specified in Figure 2, Schedule 1.
		Used for dust suppression within Premises.	Within the premises boundary as specified in Figure 1, Schedule 1.
Oily water separator (at vehicle washdown facility)	Treated dewater used for vehicle washdown water that has <15mg/L of total petroleum hydrocarbons	Redcliffe, Mesa and Mertondale 5 pits.	Pits as specified in Figure 2, Schedule 1.
		Used for dust suppression within Premises.	Within the premises boundary as specified in Figure 1, Schedule 1.

Monitoring during time limited operations

9. The works approval holder must monitor emissions during time limited operations in accordance with Table 4.

Table 4: Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Unit	Limit	Frequency	Averaging Period
Irrigation spray filed	WWTP outlet to irrigation spray field	*E. coli*	cfu/100mL	-	Weekly	Spot sample
		Total coliforms		-		
		BOD_5	mg/L	-		
		TSS	mg/L	-		
		Total Nitrogen	mg/L	-		
		Total Phosphorus	mg/L	-		
		Cumulative flow volume	kL	25	Continuous	N/A
		pH[1]	pH units	-	Daily or continuous online	
		Residual chlorine [1]	mg/L	-		

Discharge point	Monitoring location	Parameter	Unit	Limit	Frequency	Averaging Period
Redcliffe, Mesa, Mertondale No. 5 pits	Pit lake	Freeboard	metres below pit crest level	5	Monthly	Spot sample
	Dewatering pipeline outlet	Cumulative flow volume	kl	-	Continuous	N/A
	RO Brine discharge point	pH[1]	pH units	-	Monthly	Spot sample
		TDS	mg/L	-		
		Cumulative flow volume	kl	-	Continuous	N/A
Redcliffe and Mesa	Truck washdown facility outlet post oily water treatment	TPH	mg/L	15	Monthly	Spot sample

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

10. For the monitoring activity required by condition 9, the works approval holder must:

(a) record the results;

(b) handle and preserve all water samples collected during the monitoring of the WWTP in accordance with AS/NZS5667.1:1998; and

(c) have analysis conducted by a laboratory with current National Association of Testing Authorities (NATA) accreditation for the parameters specified.

Compliance reporting

11. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

12. The works approval holder must ensure the report required by condition 11 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of mine dewatering from the mine voids and dewater effluent discharged at the authorised discharge points;

(b) a tabulated and graphical summary of the volume (in m^3 or mega litres) of dewater effluent and or brine used for dust suppression, disposed to the Mesa, Redcliffe and Mertondale 5 pits, and treated in the oily water separator:

(c) a tabulated and graphical summary of emission and discharge monitoring results obtained during time limited operations under condition 9.

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

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

(f) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

13. 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.

14. 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 condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 1;

(c) monitoring programmes undertaken in accordance with condition 9; and

(d) complaints received under condition 13.

15. The books specified under condition 14 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 5 have the meanings defined.

Table 5: Definitions

Term	Definition
ARI	means Average Recurrence Interval
AS/NZS5667.1:1998	means the 'Australian Standard AS/NZS 5667.1-1998 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples', as amended from time to time.
AS/NZS 2033:2008	means the 'Australian Standard AS/NZS 2033.2008 Installation of polyethylene pipe systems', as amended from time to time.
AS/NZS 4129:2020	means the 'Australian Standard AS/NZS 4129:2020 Fittings for polyethylene pipes for pressure applications' as amended from time to time.
AS/NZS 4130:2018	means the 'Australian Standard AS/NZS 4130:2018 polyethylene pipes for pressure application' as amended from time to time.
AS/NZS 4131:2010	means the 'Australian Standard AS/NZS 4131:2010 polyethylene compounds for pressure pipes and fittings', as amended from time to time.
books	has the same meaning given to that term under the EP Act.
BOD	means biological oxygen demand
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
CFU	means colony-forming units.
Class II landfill	as defined in the Landfill Definitions.
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.

Term	Definition
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).
Freeboard	means the distance between the maximum water surface elevations and the top of the retaining banks or structures at their lowest points
HDPE	High Density Polyethylene
Inert waste type 1	as defined in the Landfill Definitions.
Landfill Definitions	means the *Landfill Waste Classification and Waste Definitions 1996* (as amended from time to time).
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.
Putrescible waste	as defined in the Landfill Definitions.
Qualified, Competent Civil or Structural Engineer	means a person who: (a) holds a Bachelor's degree recognised by Engineers Australia; and (b) has a minimum of three years of experience working in a supervisory role in civil or structural engineering; and (c) is employed by an independent third party external to the Works Approval Holder's business; or is otherwise approved in writing by the CEO to act in this capacity.
RO	means reverse osmosis
Time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
TDS	means total dissolved solids
TSS	means total suspended solids
TPH	means total petroleum hydrocarbons
waste	has the same meaning given to that term under the EP Act.
WWTP	means waste water treatment plant

Term	Definition
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

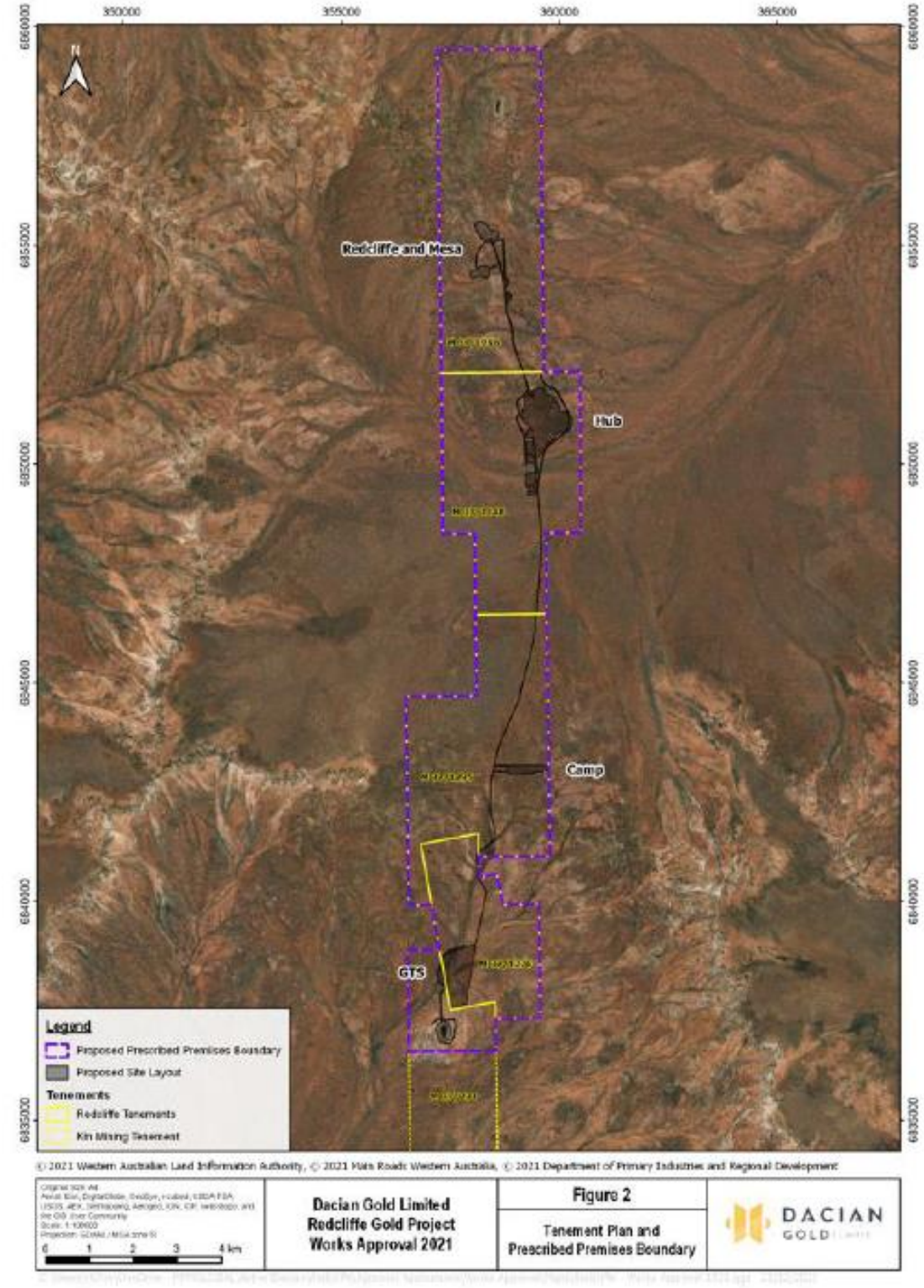

Figure 1: Map of the boundary of the prescribed premises

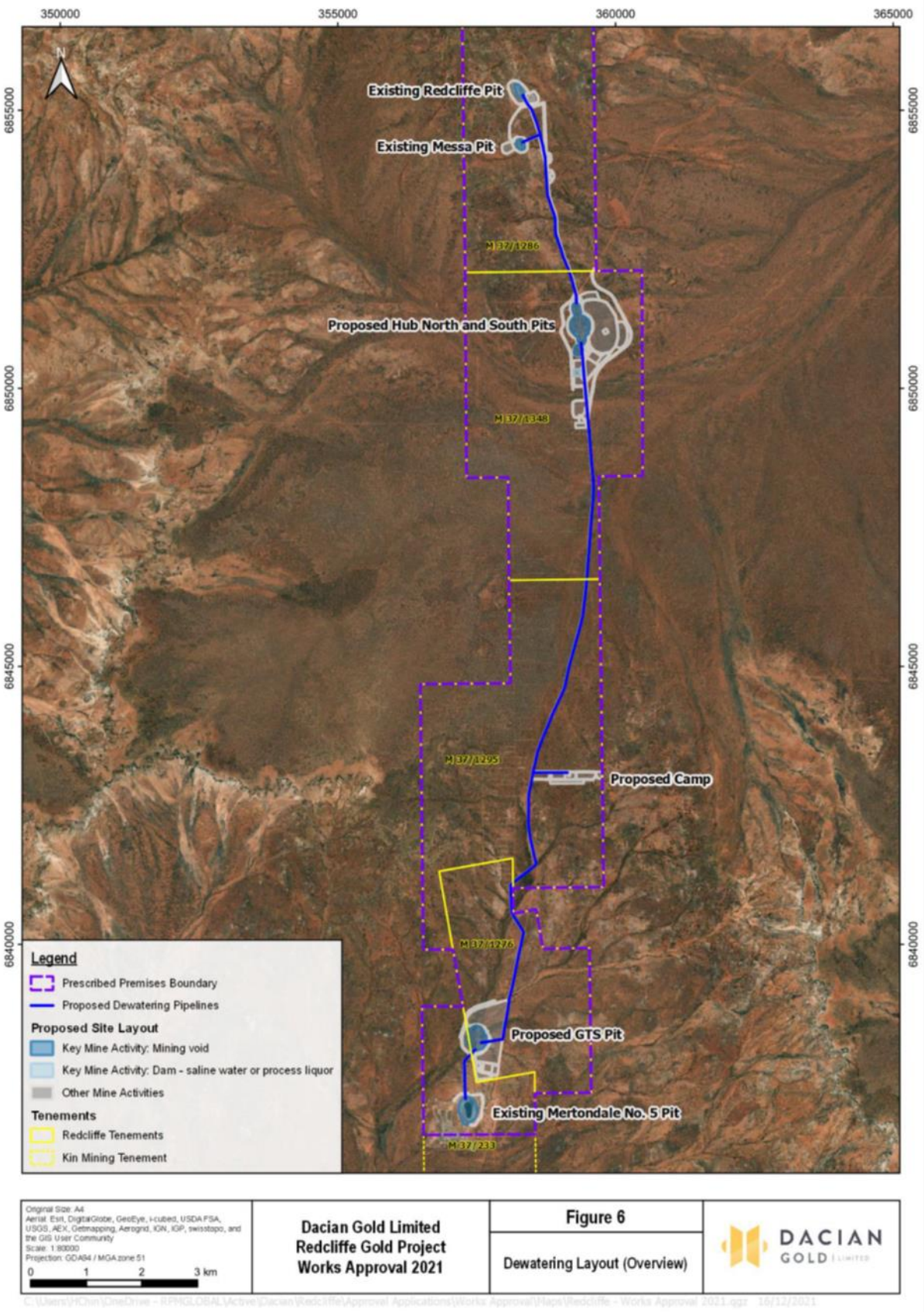

Figure 2: Dewatering pipeline layout

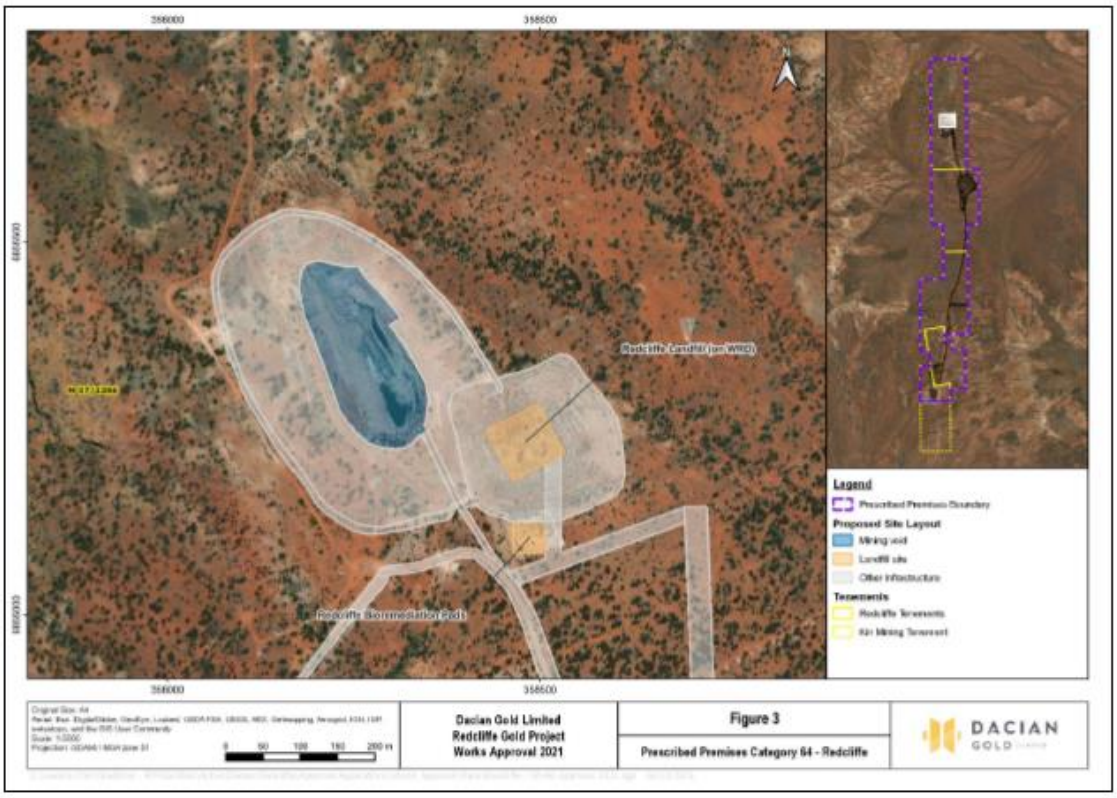

Figure 2: Redcliffe landfill location

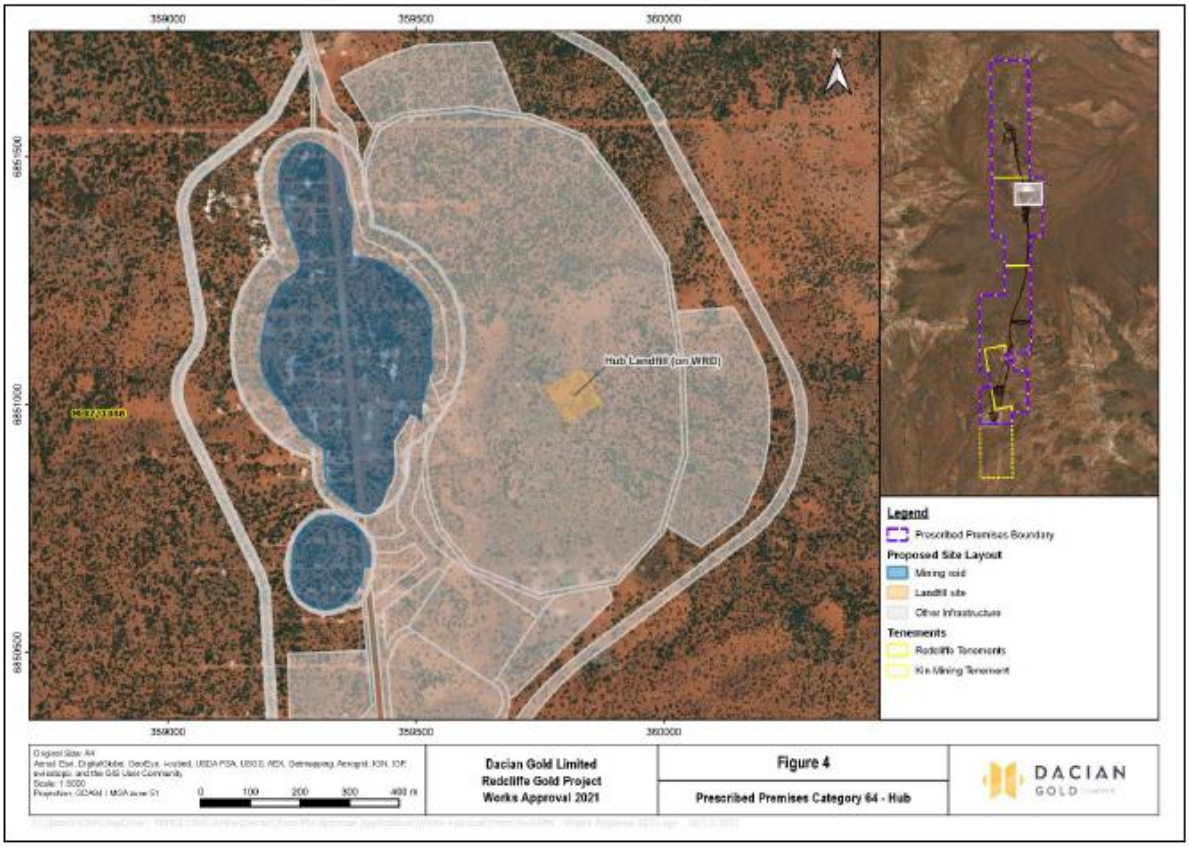

Figure 3: Hub landfill location

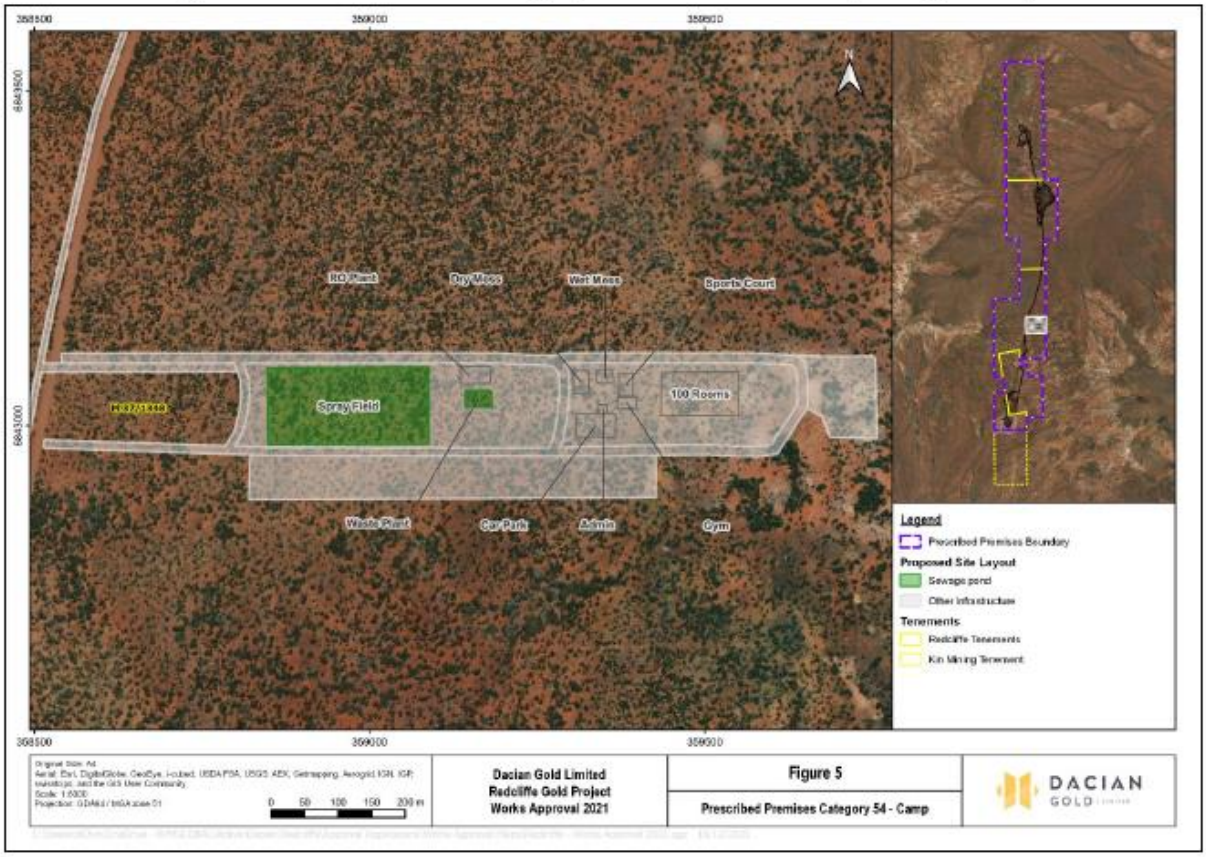

Figure 4: Accommodation camp sewage facility and spray field location and layout