



Works Approval Number	W6249/2019/1
Works Approval Holder	Adaman Resources Pty Ltd
ACN	620 314 007
Registered business address	Level 3 140 St Georges Terrace PERTH WA 6000
File Number	DER2018/001589
Duration	30 August 2019 to 1 September 2022
Date of amendment	26 June 2020
Prescribed Premises	Category 6 – Mine dewatering
Premises	Kirkalocka Gold Mine Mining tenement M59/234 DAGGAR HILLS WA 6638

This amended Works Approval is granted to the Works Approval Holder, subject to the following conditions, on 26 June 2020, by:

Alana Kidd
Manager, Resource Industries

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

Explanatory notes

These explanatory notes do not form part of this Works Approval.

Defined terms

Definition of terms used in this Works Approval can be found at the start of this Works Approval. Terms which are defined have the first letter of each word capitalised throughout this Works Approval.

Department of Water and Environmental Regulation

The Department of Water and Environmental Regulation (DWER) is 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 *Environmental Protection Act 1986* (WA) (EP Act). The Department also monitors and audits compliance with licences and works approvals, takes enforcement action and develops and implements licensing and industry regulation policy.

Works Approval

Section 52 of the EP Act provides that an occupier of any premises commits an offence if any work is undertaken on, or in relation to, the premises which causes the premises to become, or to become capable of being, Prescribed Premises, except in accordance with a works approval.

Section 56 of the EP Act provides that an occupier of Prescribed Premises commits an offence if Emissions are caused or increased or permitted to be caused or increased, or Waste, noise, odour or electromagnetic radiation is altered or permitted to be altered from Prescribed Premises, except in accordance with a works approval or licence.

Categories of Prescribed Premises are defined in Schedule 1 of the *Environment Protection Regulations 1987* (WA) (EP Regulations).

This Works Approval does not authorise any activity which may be a breach of the requirements of another statutory authority including, but not limited to, the following:

- conditions imposed by the Minister for Environment under Part IV of the EP Act;
- conditions imposed by DWER for the clearing of native vegetation under Part V, Division 2 of the EP Act;
- any requirements under the *Waste Avoidance and Resource Recovery Act 2007*;
- any requirements under the *Environmental Protection (Controlled Waste) Regulations 2004*; and
- any other requirements specified through State legislation.

It is the responsibility of the Works Approval Holder to ensure that any action or activity referred to in this Works Approval is permitted by, and is carried out in compliance with, statutory requirements.

The Works Approval Holder must comply with the Works Approval. Contravening a Works Approval Condition is an offence under s.55 of the EP Act.
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Responsibilities of Works Approval Holder

Separate to the requirements of this Works Approval, general obligations of Works Approval Holders are set out in the EP Act and the regulations made under the EP Act. For example, the Works Approval Holder must comply with the following provisions of the EP Act:

- the duties of an occupier under s.61; and

- restrictions on making certain changes to Prescribed Premises unless the changes are in accordance with a Works Approval, Licence, closure notice or environmental protection notice (s.53).

Strict penalties apply for offences under the EP Act.

Reporting of incidents

The Works Approval Holder has a duty to report to the Department all Discharges of Waste that have caused or are likely to cause Pollution, Material Environmental Harm or Serious Environmental Harm, in accordance with s.72 of the EP Act.

Offences and defences

The EP Act and its regulations set out a number of offences including:

- Offence of emitting an Unreasonable Emission from any Premises under s.49.
- Offence of causing Pollution under s.49.
- Offence of dumping Waste under s.49A.
- Offence of discharging Waste in circumstances likely to cause Pollution under s.50.
- Offence of causing Serious Environmental Harm (s.50A) or Material Environmental Harm (s.50B).
- Offence of causing Emissions which do not comply with prescribed standards (s.51).
- Offences relating to Emissions or Discharges under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)*.
- Offences relating to noise under the *Environmental Protection (Noise) Regulations 1997 (WA)*.

Section 53 of the EP Act provides that a Works Approval Holder commits an offence if Emissions are caused, or altered, from a Prescribed Premises unless done in accordance with a Works Approval, Licence or the requirements of a closure notice or an environmental protection notice.

Defences to certain offences may be available to a Works Approval Holder and these are set out in the EP Act. Section 74A(b)(iii) provides that it is a defence to an offence for causing Pollution, in respect of an Emission, or for causing Serious Environmental Harm or Material Environmental Harm, or for discharging or abandoning Waste in water to which the public has access, if the Works Approval Holder can prove that an Emission or Discharge occurred in accordance with a Works Approval.

This Works Approval specifies the Emissions and Discharges, and the limits and Conditions which must be satisfied in respect of specified Emissions and Discharges, in order for the defence to offence provision to be available.

Authorised Emissions and Discharges

The specified and general Emissions and Discharges from the Works authorised through this Works Approval are authorised to be conducted in accordance with the Conditions of this Works Approval.

Amendment of Works Approval

The Works Approval Holder can apply to amend the Conditions of this Works Approval under s.59 of the EP Act. An application form for this purpose is available from DWER.

The CEO may also amend the Conditions of this Works Approval at any time on the initiative

of the CEO without an application being made.

Duration of Works Approval

The Works Approval will remain in force for the duration set out on the first page of this Works Approval or until it is surrendered, suspended or revoked in accordance with s.59A of the EP Act.

Suspension or revocation

The CEO may suspend or revoke this Works Approval in accordance with s.59A of the EP Act.

Definitions and interpretation

Definitions

In this Works Approval, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AS/NZS 5667.1	Means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
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 <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
Commissioning	Means a period of time to allow for stabilisation and optimization of the process following input of raw materials under operation conditions (including emissions) on the Works Approval for the limited period of operations required.
Condition	means a condition to which this Works Approval is subject under s.62 of the EP Act.
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
Department Request	means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Works Approval Holder in writing and sent to the Works Approval's address for notifications, as described at the front of this Works Approval, in relation to: (a) compliance with the EP Act or this Works Approval; (b) the Books or other sources of information maintained in accordance with this Works Approval; or (c) the Books or other sources of information relating to Emissions from the Premises.
Discharge	has the same meaning given to that term under the EP Act.

DWER	Department of Water and Environmental Regulation
Emission	has the same meaning given to that term under the EP Act.
Environmental Harm	has the same meaning given to that term under the EP Act.
EP Act	means the <i>Environmental Protection Act 1986 (WA)</i> .
EP Regulations	means the <i>Environmental Protection Regulations 1987 (WA)</i> .
HDPE	Means high-density polyethylene
Implementation Agreement or Decision	has the same meaning given to that term under the EP Act.
Inspector	means an inspector appointed by the CEO in accordance with s.88 of the EP Act.
m	means metres
mbgl	means metres below ground level
Material Environmental Harm	has the same meaning given to that term under the EP Act.
NATA	means the National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
Pollution	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Works Approval applies, as specified at the front of this Works Approval and as shown on the map in Schedule 1 to this Works Approval.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Serious Environmental Harm	has the same meaning given to that term under the EP Act.
Unreasonable Emission	has the same meaning given to that term under the EP Act.
Waste	has the same meaning given to that term under the EP Act.
Works	refers to the Works described in Schedule 3, at the locations shown in Schedule 1 of this Works Approval to be carried out at

	the Premises, subject to the Conditions.
Works Approval	refers to this document, which evidences the grant of the works approval by the CEO under s.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.

Interpretation

In this Works Approval:

- (a) the words 'including', 'includes' and 'include' will be read as if followed by the words 'without';
- (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 means the version of the standard, guideline or code of practice in force at the time of granting of this Works Approval and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Works Approval; and
- (e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act;

Conditions - Works

Infrastructure and equipment

1. The Works Approval Holder must install and undertake the Works
 - (a) for the infrastructure and equipment:
 - (b) to the corresponding requirements; and
 - (c) at the corresponding site plan reference;
 in Table 2 below.

Table 2: Infrastructure and equipment requirements table

Infrastructure/ Equipment	Requirements (design and construction)	Site plan reference
Dewatering pipelines	Fitted with isolation valve switches and flow meters to direct water to the discharge locations; Anchored to prevent movement; Constructed of HDPE; and Butt welded at each joint.	Schedule 1: Maps - Site Layout Map Schedule 2: Site Plans - Discharge structural plan for WRL2 Sprinkler Banks 1 and 2
Waste Rock Landform Sprinkler Bank 1 and Waste Rock Landform Sprinkler Bank 2	The sprinkler banks are installed so a minimum separation distance of 100 m is provided between each sprinkler and the outer perimeter of the future WRL2 footprint.	
Dewatering Discharge Points A, B and C	Each discharge point is fitted with an energy diffusion device to minimise scouring and erosion of the drainage channel (creek bed). Re-establish vegetation health monitoring quadrants MMS08, MMS20 and MMS29 downstream of the discharge locations, and control plots MMS11 and MMS14 upstream of the discharge locations.	Schedule 1: Maps - Site Layout Map Schedule 1: Site Vegetation Monitoring Map Schedule 2: Site Plans - Discharge structure plan for Dewatering Discharge Points A, B and C

2. The Works Approval Holder must not depart from the requirements specified in Table 2 except:
 - (a) where such departure does not increase risks to public health, public amenity or the environment; and
 - (b) all other Conditions in this works approval are still satisfied.
3. Within 28 days of the completion of the Works specified in Table 2, the Works Approval Holder must
 - (a) undertake an audit of compliance with the requirements in Table 2; and
 - (b) prepare and submit to the CEO a respective audit report of that compliance.
4. Where a departure from the requirements specified in Table 2 occurs and is of a type allowed by Condition 2, the Works Approval Holder must provide to the CEO a description of, and explanation for, the departure along with the report required by Condition 3.

Commissioning phase

5. The Works Approval Holder must conduct Commissioning of the dewatering pipelines and discharge outlets for a period not exceeding three months.
6. The Works Approval Holder must notify the CEO within 7 days after, the completion date of Commissioning.
7. The Works Approval Holder must provide to the CEO a Commissioning Report within one month of the completion date of Commissioning.
8. The Works Approval Holder must ensure the report required by Condition 7 of this Works Approval includes:
 - (a) A summary of the commissioning activities undertaken, including timeframes;
 - (b) Any discharges which occur;
 - (c) A summary of any accidents or malfunctions which may have occurred; and
 - (d) A summary of process monitoring results obtained under Condition 13

Time limited operational phase

9. Upon completion of commissioning and the submission of the audit of compliance in accordance with conditions 3 and 4, the Works Approval Holder may conduct full dewatering operations for a period not exceeding six months from the completion date of Commissioning, or until a Licence for the operation is granted, whichever comes first.

Emissions

10. The Works Approval Holder must not cause any emissions from the Works authorised through this Works Approval except for specified Emissions and general Emissions described in Table 3, subject to the exclusions, limitations or requirements specified in Table 3.

Table 3: Authorised Emissions table

Column 1	Column 2
Emission type	Exclusions/Limitations/Requirements
Specified Emissions	
<p>Dewatering discharge to the following locations:</p> <ul style="list-style-type: none"> Waste Rock Landform Sprinkler Bank 1 and Waste Rock Landform Sprinkler Bank 2 Dewatering Discharge Points A, B and C 	<p>Subject to compliance with Conditions 11 - 14</p>
General Emissions (excluding Specified Emissions)	
<p>Emissions which arise from undertaking the Works set out in Schedule 3.</p>	<p>Emissions excluded from General Emissions are:</p> <ul style="list-style-type: none"> Unreasonable Emissions; or Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or Discharges of Waste in circumstances likely to cause Pollution; or Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or Emissions or Discharges which do not comply with an Approved Policy; or Emissions or Discharges which do not comply with prescribed standard; or Emissions or Discharges which do not comply with the conditions in an Implementation Agreement or Decision; or Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>.

Discharge of mine dewater

- 11.** During the Commissioning and the Time Limited Operational Phase, the Works Approval Holder must implement the controls specified in Column 1 of Table 4 and Column 2 of Table 4.

Table 4: Mine dewater discharge table

Column 1	Column 2
Site infrastructure and equipment	Operational controls
HDPE dewatering pipelines	<ul style="list-style-type: none"> An inspection is required for visual integrity and leak detection each 12 hourly shift. The inspections are to be at least 6 hours, and no more than 18 hours, apart. A written log is required to be maintained for each inspection, with the record of each inspection signed by the responsible person.
Waste Rock Landform Sprinkler Bank 1 and Waste Rock Landform Sprinkler Bank 2 Dewatering discharge outlets to Points A, B and C	<ul style="list-style-type: none"> A 12 hourly inspection is required for visual integrity of the discharge systems. A written log is required to be maintained for each inspection, with the record of each inspection signed by the responsible person.
Dewatering discharge outlets to Points A, B and C	<ul style="list-style-type: none"> Dewatering discharge to be alternated between discharge point A, B and C as identified in Schedule 1: Maps. Dewatering water to be discharged for one out of three days at each discharge point A, B and C as identified in Schedule 1: Maps. A weekly inspection is required to determine the level of scouring and/or erosion at the discharge locations. A written log is required to be maintained for each inspection, with the record of each inspection signed by the responsible person

Monitoring general

- 12.** The Works Approval Holder must ensure that:

- (a) All water samples are collected and preserved in accordance with AS/NZS 5667.1;
- (b) Monthly monitoring is undertaken at least 15 days apart;
- (c) Quarterly monitoring is undertaken at least 45 days apart; and
- (d) All monitoring equipment used on the Premises to comply with the Conditions of this Works Approval is calibrated in accordance with the manufacturer's specifications.

Process monitoring

- 13.** During the Commissioning and the Time Limited Operational Phase, the Works Approval Holder must monitor the parameters specified in Column 2 of Table 5, from the locations specified in Column 1 of Table 5. Parameters must be monitored in the units specified in Column 3, and at the frequency specified in Column 4.

Table 5: Mine dewater process monitoring

Column 1	Column 2	Column 3	Column 4
Location	Parameter	Units	Frequency
Dewatering discharged to the Waste Rock Landform Sprinkler Bank 1 and Waste Rock Landform Sprinkler Bank 2	Volumetric flow rate	kL	Continuous
	pH ¹	-	Monthly
Dewatering discharged to Points A, B and C	Total dissolved solids ¹	mg/L	Monthly
Vegetation monitoring quadrants MMS08, MMS20, MMS29, MMS11 and MMS14 as depicted in Schedule 1: Site Vegetation Monitoring Map	A photograph from a designated point at each monitoring quadrant to be taken upon each monitoring event, so can be compared to subsequent and/or previous photographs.	-	Weekly

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

Record-keeping

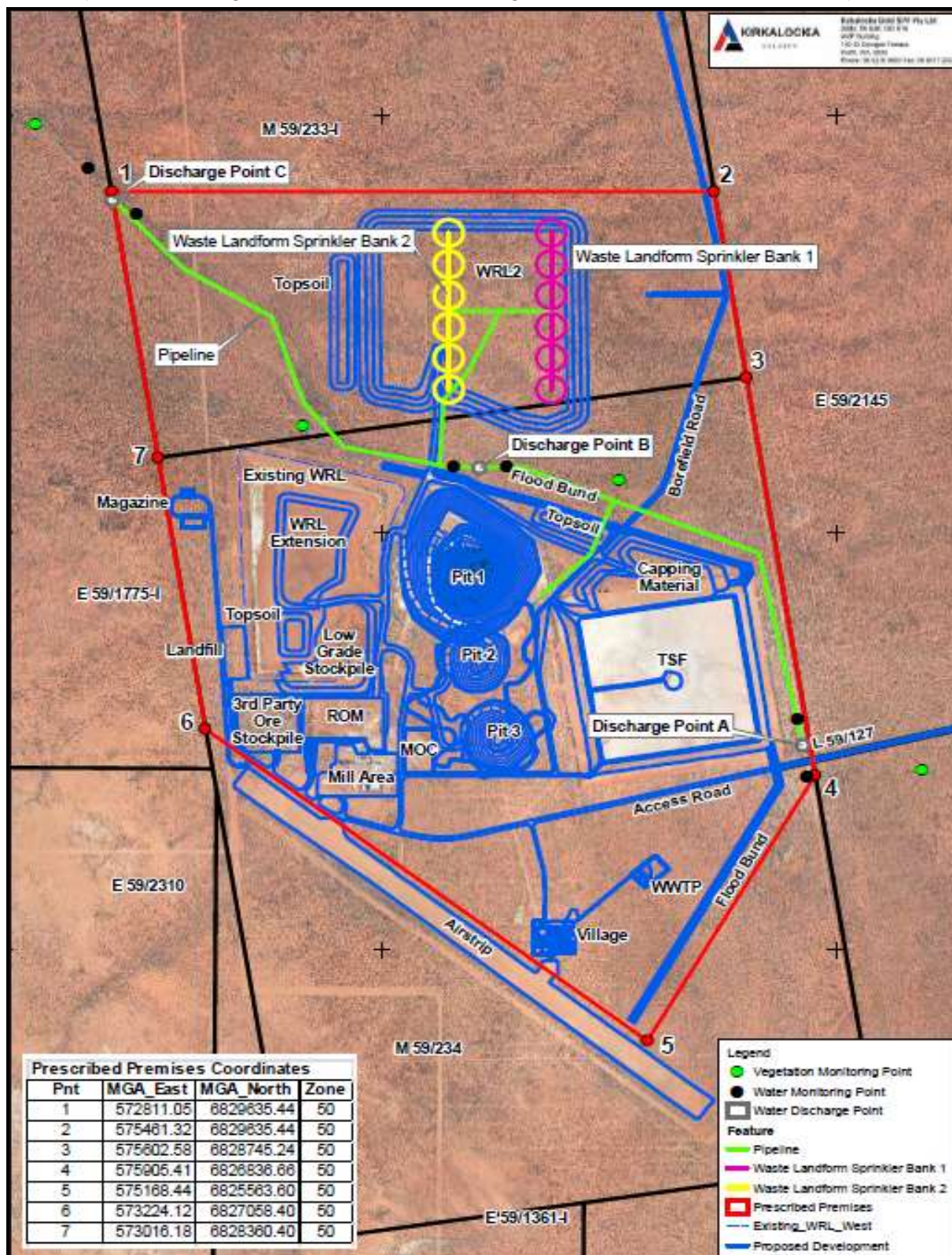
- 14.** The Works Approval Holder must maintain accurate Books including information, reports and data in relation to the Works and the Books must:
- (a) be legible;
 - (b) if amended, be amended in such a ways that the original and subsequent amendments remain legible or are capable of retrieval;

- (c) be retained for at least 3 years from the date the Books were made; and
 - (d) be available to be produced to an Inspector or the CEO.
- 15.** The Works Approval Holder must comply with a Department Request within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

Schedule 1: Maps

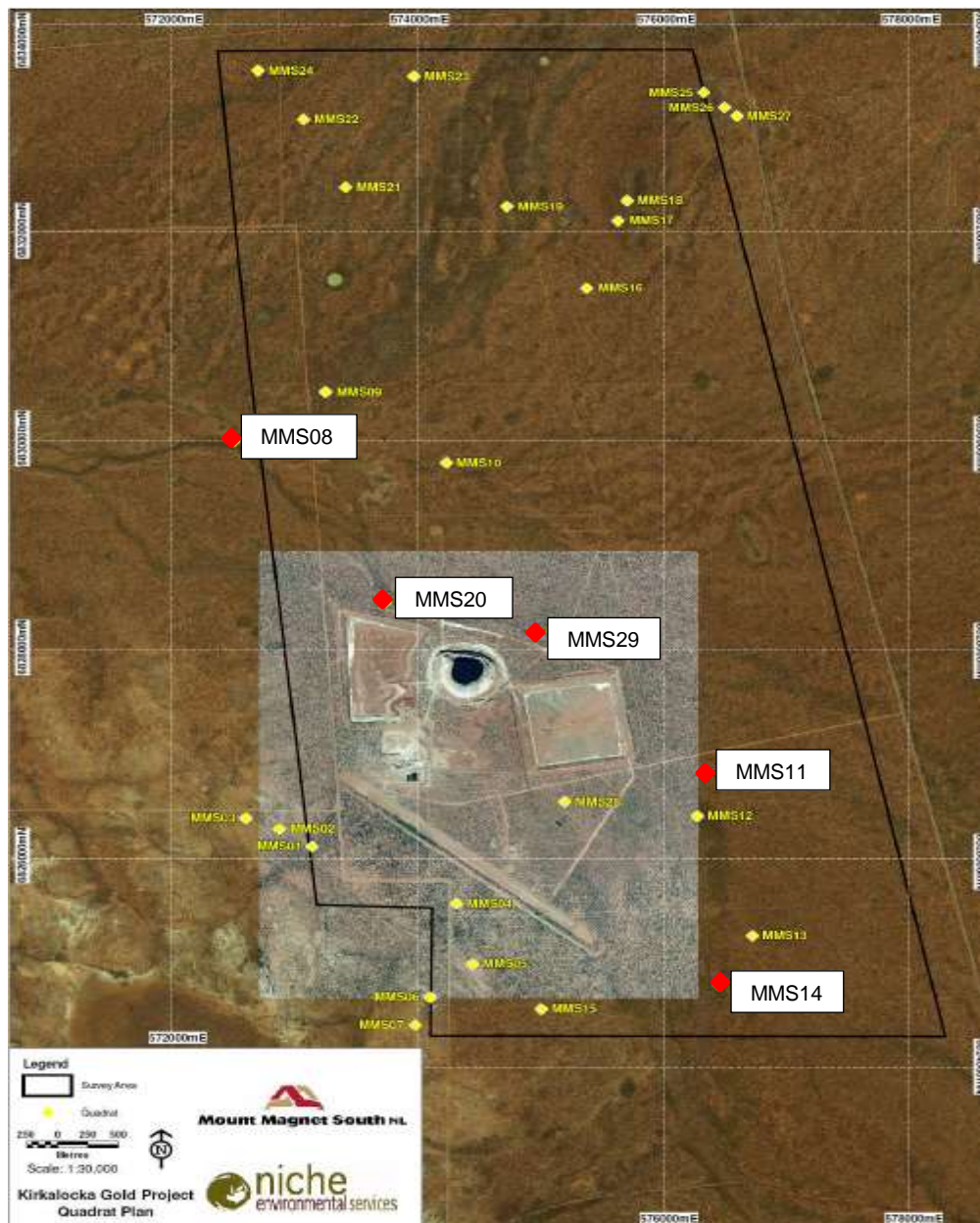
Site Layout Map

The map of dewatering infrastructure and discharge locations are shown in the map below.



Site Vegetation Monitoring Map

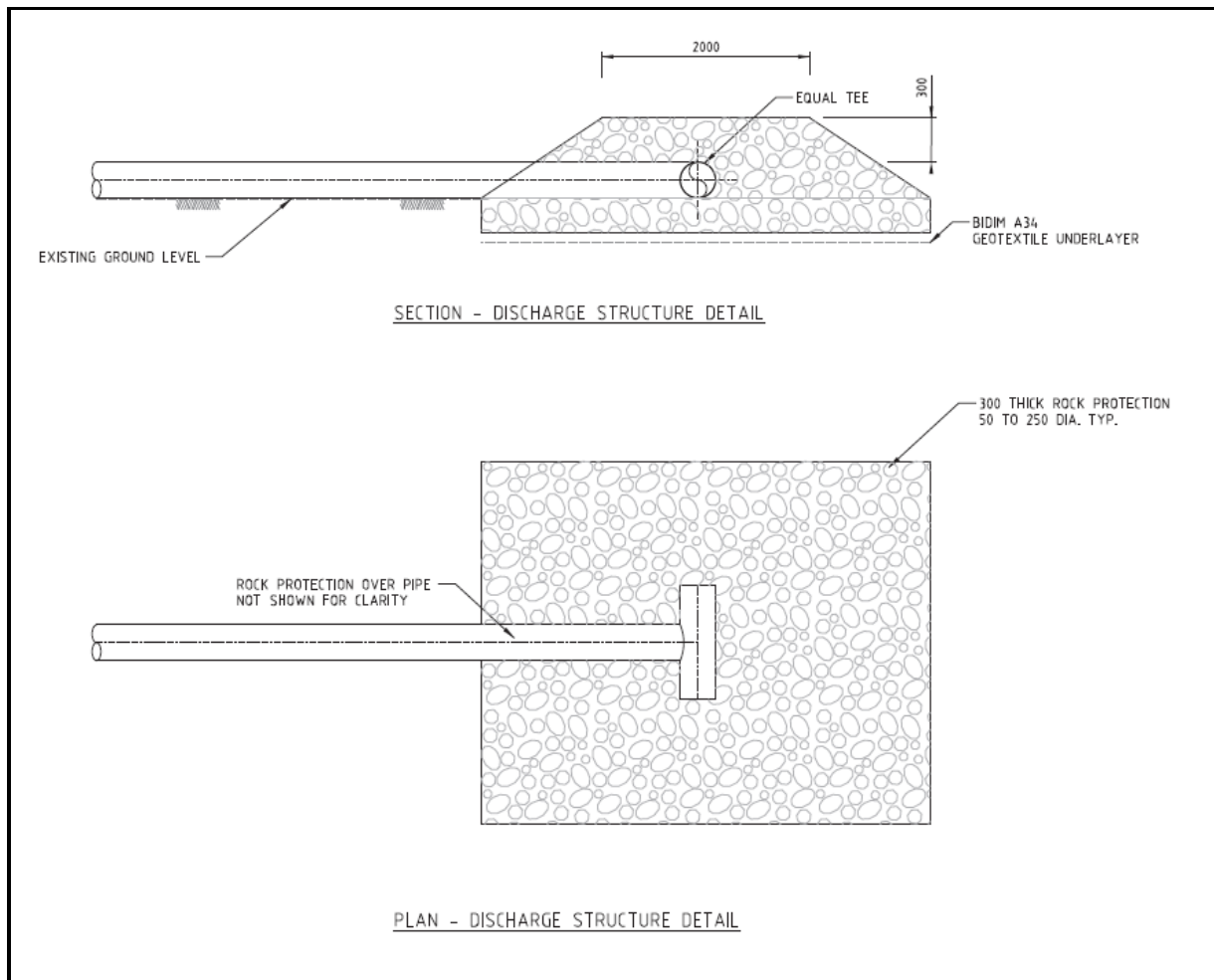
Vegetation health monitoring quadrants MMS08, MMS20, MMS29, MMS11 and MMS14



Discharge structural plan for WRL2 Sprinkler Banks 1 and 2



Discharge structure plan for Dewatering Discharge Points A, B and C



Schedule 3: Works

At the time of assessment, Emissions and Discharges from the Works listed in Table 4 were considered in the determination of the risk and related Conditions for the Works Approval.

Table 4: Authorised Works - New infrastructure to be constructed

Works	Specifications/Drawings
Dewatering pipelines	Schedule 1: Maps - Site Layout Map
Waste Rock Landform Sprinkler Bank 1 and Waste Rock Landform Sprinkler Bank 2	Schedule 2: Site Plans - Discharge structural plan for WRL2 Sprinkler Banks 1 and 2
Dewatering Discharge Points A, B and C	Schedule 1: Maps - Site Layout Map Schedule 2: Site Plans - Discharge structure plan for Dewatering Discharge Points A, B and C

Site layout

The infrastructure and equipment are set out on the Premises in accordance with the site layout specified on the Site Layout Map in Schedule 1: Maps.

Schedule 3: Primary Activities

At the time of assessment, emissions and discharges from the following Primary Activities were considered in the determination of the risk and related conditions for the Premises. Primary activities are listed in Table 5.

Table 5: Primary Activities

Primary Activity	Premises production or design capacity
Category 6 - Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore	3,900,000 tonnes per year