



Licence number	L8721/2013/2
Licence holder	Karara Mining Limited
ACN	070 871 831
Registered business address	Level 2 London House 216 St Georges Terrace PERTH WA 6000
DWER file number	2012/008499-1
Duration	20/05/2021 to 19/05/2026
Date of amendment	21/11/2022
Premises details	Karara Minesite Beneficiation Plant M59/644, M59/645, M59/721, G59/38, L59/99 and L59/109 PERENJORI WA 6620

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed production / design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	30,000,000 tonnes per year
Category 6: Mine dewatering	573,600 tonnes per year
Category 12: Crushing and screening	400,000 tonnes per year
Category 54: Sewage facility	600 cubic metres per day
Category 64: Class II or III putrescible landfill	5,000 tonnes per year

This amended licence is granted to the licence holder, subject to the attached conditions, on 21 November 2022, by:

**A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES**

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

Licence history

Date	Reference number	Summary of changes
10/12/2009	W4596/2009/1	Works Approval - Karara Landfill Facility.
12/02/2010	W4615/2009/1	Works Approval - Karara Minesite Beneficiation Plant.
05/03/2010	W4620/2009/1	Works Approval – WWTP.
09/12/2010	L8486/2010/1	Licence – WWTP.
16/05/2013	L8721/2013/1	Licence - Karara Minesite Beneficiation Plant.
26/09/2013	L8721/2013/1	Amendment - Karara Minesite Beneficiation Plant.
20/01/2014	W5545/2013/1	Works Approval – Wet TSF1.
11/7/2014	W5664/2014/1	Works Approval – Wet TSF2 (Stage 1 and Stage 2). The works were not constructed.
12/11/2015	L8721/2013/1	Amendment to incorporate operation of Wet TSF 1 in accordance with Works Approval W5545/2013/1 and surrender of Licence L8486/2010/1 with incorporation of the WWTP within L8721/2013/1.
29/04/2016	L8721/2013/1	Department initiated amendment in accordance with section 59(1)(k) of the Act to amend the duration of the licence.
30/06/2017	L8721/2013/1	Amendment Notice 1 to: <ul style="list-style-type: none"> • Raise the Wet TSF1 downstream embankment from 8 metres (m) to 16 m at its deepest edge (Phase 1) • Extend Wet TSF1 to the south (Phase 2) • Correct the Category 5 throughput capacity to 30,000,000 tonnes per annum Correct the Premises boundary map.
08/01/2018	L8721/2013/1	Amendment Notice 2 for the construction and operation of TSF 2A within the TSF landform footprint.
03/08/2018	L8721/2013/1	Amendment Notice 3 to construct an internal embankment from the central decant to the southern embankment of TSF Stage 2A, dividing the TSF 2A deposition area into Cell 1 and Cell 2.
18/12/2018	L8721/2013/1	Amendment Notice 4 to include a Wet Concentrate Storage Facility (WCSF) and its proposed expansion into the licence.
16/04/2019	L8721/2013/1	Amendment Notice 5 for construction and operation of a new Category 64 landfill.
14/11/2019	L8721/2013/1	Amendment to include a Category 5 mobile crusher circuit and remove redundant construction conditions for TSF2 and WCSF. The amendment included a CEO initiated amalgamation of separately issued licence amendment notices into the one licence.

Date	Reference number	Summary of changes
13/02/2020	L8721/2013/1	CEO initiated amendment to correct an unintentional omission of Table 1.3.4 in the previous amendment.
26/03/2020	W6355/2020/1	Works approval for the construction of Category 6 mine dewatering infrastructure for the dewatering of Karara Mine Pit to Blue Hills North Open Pit.
16/07/2020	L8721/2013/1	Amendment to include Category 6 mine dewatering activities.
21/12/2020	L8721/2013/1	Amendment to authorise the construction of a water infiltration trench for TSF2A, the addition of the plant WWTP to the Licence and the construction/operation of Landfill 3.0.
28/04/2021	L8721/2013/2	Licence renewal – expiry date changed to 19/05/2026. Various minor administrative changes due to incorrect referencing in the licence.
29/08/2022	L8721/2013/2	Amendment to authorise the construction of Wet TSF 2B and provide a hydrological report.
21/11/2022	L8721/2013/2	Amendment to authorise construction and operation of a Category 12 mobile crushing plant for the purpose of processing road base and stemming material for a throughput of 400, 000 tonnes per annual period.

Interpretation

In this licence:

- (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 licence:
 - (a) if dated, refers to that particular version; and
 - (b) 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 licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

General conditions

1. The Licence Holder must ensure that surface drainage water is managed so that potentially contaminated water from the Process Plant and TSF landform is directed to the Drainage Retention Area, as depicted in Schedule 1: Figure 5 and Figure 6.

Premises operation

2. The Licence Holder must ensure that materials listed in Table 1 are only discharged into containment structures with the relevant infrastructure requirements and at the location specified in Table 1 and identified in Schedule 1.

Table 1: Containment infrastructure

Containment structure	Material	Infrastructure requirements
TSF landform	Dry tailings (\leq 20% moisture content)	Only deposited within areas shaded as 'Dry TSF', as depicted and located in Schedule 1, Figure 2.
	Wet tailings ($>$ 20% moisture content)	Only deposited in TSF 2A, as located in Schedule 1, Figure 2.
	Stormwater	All surface water run-off from the TSF landform (including outer embankments of TSF1, TSF 2A and TSF 2B) is directed to the Drainage Retention Area as located in Schedule 1, Figure 2.
TSF2A and TSF2B	Tailings	<p>Located as shown in Schedule 1, Figure 2 and Figure 6.</p> <p>Seepage collected by toe drains and directed to the Seepage Collection Sump.</p> <p>A decant tower and pump maintained so that decant water is able to be pumped to the process plant via return pipeline.</p> <p>Spigots, for subaerial deposition of tailings, positioned and rotated around the embankment perimeter in order to maintain even beaching of tailings.</p> <p>Piezometers maintained in each embankment wall in accordance to design and construction reports.</p> <p>Minimum total freeboard of 500 mm maintained.</p>
Seepage Collection Sump	Seepage from the TSF	<p>Located as shown in Schedule 1, Figure 6.</p> <p>Maintained so that water collected in the Seepage Collection Sump may be returned to the process plant or TSF 2A or reused as dust suppression.</p> <p>Minimum freeboard of 300 mm maintained.</p>
Water infiltration trench	Potentially contaminated surface water, drainage water	<p>Located as shown in Schedule 1, Figure 6.</p> <p>Constructed to be 0.85 m to 1.05 m wide, 850 m long and to a nominal depth of 2.4 m.</p>

Containment structure	Material	Infrastructure requirements
	and groundwater	Constructed so as to allow water to drain to the Seepage Collection Sump (as depicted in Schedule 1, Figure 6).
Drainage Retention Area	Potentially contaminated surface water and drainage water.	<p>Located as depicted in Schedule 1, Figure 2.</p> <p>Constructed and maintained to accommodate stormwater flows from a 1 in 100 year, 72 hour ARI rainfall event.</p> <p>Surface Water Drainage directed to the Drainage Retention Area as shown in Schedule 1, Figure 5.</p> <p>Water from the Drainage Retention Area reused in the processing plant or for dust suppression.</p>
Wet Concentrate Storage Facility	Wet concentrate	<p>Located within the Process Plant Area depicted in Schedule 1, Figure 2.</p> <p>Maintained so that seepage collected by the underdrainage piping network and sump is captured for re-use.</p> <p>Minimum freeboard of 300 mm maintained.</p>
Tailings pipelines	Tailing slurry	250 mm diameter HDPE.
Return water lines	Return water from TSF2A	<p>Tailings delivery and return water pipelines and pumps bundled by earthen trenches.</p> <p>Spillage directed to the Drainage Retention Area or retained with the Process Plant and associated infrastructure.</p>
Dewatering pipeline: KML Pit to Saline Water Pump Station Saline Water Pump Station to BH North Pit	Water from the mine dewatering of Karara Open Pit	<p>Located as shown in Schedule 1, Figure 2.</p> <p>Above ground sections of pipeline must be maintained within windrows to contain leaks and spills.</p>
Blue Hills North Open Pit	Water from the mine dewatering of Karara Open Pit	<p>Located as shown in Schedule 1, Figure 2.</p> <p>The standing water level must not exceed 345 m AHD.</p> <p>The discharge point must be located:</p> <ul style="list-style-type: none"> to minimise blowback; to minimise exposure to wind; and away from remnant vegetation. <p>The discharge point must be modified or relocated if discharge water is observed to be impacting remnant vegetation.</p>

3. The Licence Holder must:

- (a) undertake inspections as detailed in Table 2;
- (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
- (c) maintain a record of all inspections undertaken.

Table 2: Inspection of Infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Tailings pipelines	Visual integrity	Daily
Return water lines	Visual integrity	Daily
TSF2A and TSF 2B embankments	Visual to confirm no unusual changes and required freeboard capacity is available.	Daily
Drainage Retention Area	Visual to confirm able to accommodate stormwater flows from a 1 in 100-year, 72-hour ARI rainfall event.	Daily
Wet Concentrate Storage Facility	Visual to confirm at least 300 mm freeboard capacity.	Daily
Dewatering pipeline: KML Pit to Saline Water Pump Station. Saline Water Pump Station to BH North Pit.	Visual integrity.	Daily, when dewatering in operation.
Dewater discharge point into Blue Hills North Open Pit.	Visual.	Daily, when dewatering in operation.

4. The Licence Holder must:

- (a) construct the critical containment infrastructure;
 - (b) in accordance with the corresponding design and construction requirements; and
 - (c) at the corresponding infrastructure location(s);
- as set out in Table 3.

Table 3: Critical containment infrastructure design and construction requirements

	Infrastructure	Design and construction requirements	Infrastructure location
1.	TSF 2B	<ul style="list-style-type: none"> Constructed within tenements G59/38 and M59/64; Storage capacity of 2,700,000 m³ of tailings material; A total footprint of 32.46 hectares, including embankments and access ramp; Constructed to provide a minimum 0.5 metre total freeboard (including an allowance for the 1 in 100 AEP 72-hour period of 290 mm) above the normal operating pond; Upstream and downstream slopes 1:2 (v:h) and 1:1.75 (v:h); Establishment of a decant compartment in the southeast corner of the TSF; and Multiple spigots creating a tailings beach slope between 1:200 (v:h) to 1:250 (v:h); 	Schedule 1, Figure 10, Figure 11 and Figure 12
2.	Construction of new embankment	<ul style="list-style-type: none"> 348.5 m maximum RL height (RL 345.5 m to the south, RL 348.5 m to the north and 345.0 m for the decant pond); Embankments are to be constructed using a central core (zone 1) of compacted dry tailings, an upstream and downstream shell (zone 2) of mine waste and capped with compacted colluvium (zone 3); Compaction densities at least 96% standard maximum dry density; The embankment crest is 8 m wide to accommodate pipework, safe vehicle access and other TSF operational infrastructure; Surface water run-off and seepage to be collected into a perimeter toe drain system to a collection sump and pumped back to the processing plant; and Vibrating wire piezometers will be installed at selected locations in the embankments of Wet TSF 2B for pore pressure monitoring. Settlement monitoring pins (mainly consist of Settlement Markers) will be installed vertically along the crest of the embankments to monitor embankment crest movement. The Settlement Markers will be constructed to a precise line and level and surveyed immediately after construction. 	<p>Schedule 1, Figure 11</p> <p>Figure 6</p> <p>Figure 13</p>
3.	Decant infrastructure	<ul style="list-style-type: none"> Embankments constructed with rock fill; Installation of a pontoon mounted floating decant pump; and Decant water pumped back to the Processing Plant for reuse. 	Figure 12
4.	Pipework	<ul style="list-style-type: none"> 3100 m of 225 diameter, 900 m of 400 diameter and 33 m of 150 diameter Victaulic jointed HDPE pipes; and 33 Victaulic jointed HDPE Tee connection and flexible hose with scissor clamps. 	Figure 12

5. The Licence Holder must within 30 calendar days of the Critical Containment Infrastructure identified by condition 4 being constructed:
 - (a) undertake an audit of their compliance with the requirements of condition 4; and
 - (b) prepare and submit to the CEO a Critical Containment Infrastructure Report on that compliance.
6. The Critical Containment Infrastructure Report required by condition 5 must include as a minimum the following:
 - (a) certification by a suitably qualified engineer that each item of critical containment infrastructure or component thereof, as specified in condition 4, has been built and installed in accordance with the requirements specified in condition 4;
 - (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 4;
 - (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.
7. The Licence Holder may only commence operation for an item of critical containment infrastructure identified in condition 4 where the CEO has notified the Licence Holder that the Critical Containment Infrastructure Report for that item of infrastructure as required by condition 5 meets the requirements of that condition.
8. The Licence Holder must engage a suitably qualified hydrogeologist to conduct a hydrogeological study and submit to the CEO by 30 March 2023, a hydrogeological report which:
 - (a) contributes to the development of a conceptual hydrogeological model for TSF 2A and TSF 2B, including but not limited to:
 - i) the identification of any aquifers which underlie the site;
 - ii) fracture zones;
 - iii) hydraulic conductivity of the regolith; and
 - iv) direction of groundwater flow.
 - (b) recommends the most suitable:
 - i) number;
 - ii) locations;
 - iii) well depths; and
 - iv) trigger levelof the monitoring bores/wells to be installed around TSF 2B; and
 - (c) recommends methods to recover seepage and mitigate groundwater mounding.
9. The licence holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 4.

Table 4: Infrastructure requirements – groundwater monitoring bores/wells

Infrastructure	Design, construction, and installation requirements	Monitoring bore/well location(s)
Monitoring well network for TSF 2B	<p><u>Well design and construction:</u></p> <p>Designed and constructed in accordance with <i>ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores</i>.</p> <p>Well screens must target the part, or parts, of the aquifer most likely to be affected by contamination¹. Where temporary/seasonal perched features are present, wells must be nested, and the perched features individually screened.</p>	In accordance with the hydrogeologist's report from condition 8.
	<p><u>Logging of borehole:</u></p> <p>Soil samples must be collected and logged during the installation of the monitoring wells.</p> <p>A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726.</p> <p>Any observations of staining / odours or other indications of contamination must be included in the bore log.</p>	
	<p><u>Well construction log:</u></p> <p>Well construction details must be documented within a well construction log to demonstrate compliance with <i>ASTM D5092/D5092M-16</i>. The construction logs must 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.</p>	
	<p><u>Well development:</u></p> <p>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.</p>	
	<p><u>Installation survey:</u> the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.</p>	
	<p><u>Well network map:</u> 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.</p>	

Note 1: General guidance on report presentation can be found in the Department's *Guideline: Assessment and management of contaminated sites*.

10. The licence holder must, within 60 calendar days of the monitoring wells being constructed, submit to the CEO a well construction report evidencing compliance with the requirements of condition 9.
11. The Licence Holder must within 60 days of the monitoring bores in Table 4 being constructed and prior to deposition into TSF 2B conduct baseline sampling on the new bores and existing bore as per condition 29.

12. The Licence Holder must:
- install the equipment;
 - in accordance with the corresponding design and installation requirements; and
 - at the corresponding infrastructure location
- as set out in Table 5.

Table 5: Design and installation requirements

	Infrastructure	Design and installation requirements	Infrastructure location
1.	Mobile crushing and screening plant	<ol style="list-style-type: none"> Mobile plant to comprise of a jaw crusher, secondary crusher, and diesel hydraulic track mounted screen. To be installed as per manufactures specifications. To be installed within the Waste Rock Dump as depicted in Schedule 1: Maps , Figure 2 and Figure 9. 	Schedule 1, Figure 2 (within area marked as Waste Rock Dump) and Figure 9.

13. The Licence Holder must within 30 days of an item of equipment by condition 12 being installed:
- undertake an audit of their compliance with the requirements of condition 12; and
 - prepare and submit to the CEO an Environmental Compliance Report on that compliance.
14. The Environmental Compliance Report required by condition 13, must include as a minimum the following:
- certification by a person authorised to represent the Licence Holder that the equipment or component(s) thereof, as specified in condition 12, have been installed in accordance with the relevant requirements specified in condition 12;
 - as constructed plans or photographs for each item of infrastructure or component of infrastructure specified in condition 12; and
 - be signed by a person authorised to represent the Licence Holder and contains the printed name and position of that person.
15. The Licence Holder must ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 6.

Table 6: Management of waste

Waste type	Management Strategy	Requirements
Sewage	Biological, physical, and chemical treatment.	<ul style="list-style-type: none"> No more than 600 m³ per day. Sludge drying beds on a bunded hardstand and disposal of dry sludge to the premises landfill.
Clean Fill	Receipt, handling and disposal of	<u>All landfills and waste types</u> <ul style="list-style-type: none"> No more than 5,000 tonnes per year of all waste
Inert Waste Type		

Waste type	Management Strategy	Requirements
1 and 2 ¹	waste by landfilling.	types cumulatively must be disposed of by landfilling.
Putrescible Waste		<ul style="list-style-type: none"> Disposal of waste by landfilling must only take place within the landfilling areas shown in Figure 2 and Figure 7 of Schedule 1. Waste must be placed in a defined trench or within an area enclosed by earthen bunds. The active tipping face must be restricted to a maximum vertical height of 3 m. Cell locations where waste is to be buried will be surveyed and the latitude and longitude recorded.
Other waste that meets the acceptance criteria for Class II landfills		<p><u>Waste Rock Dump Landfilling area</u></p> <ul style="list-style-type: none"> Construction, operation and decommissioning of landfill cells can occur within the defined landfill area providing there is no waste within: <ul style="list-style-type: none"> 100 m of any surface water body; and 3 m of the highest level of the water table aquifer. <p><u>Landfill 2 and Landfill 3</u></p> <ul style="list-style-type: none"> Construction, operation and decommissioning of landfill cells can occur within the Waste Cell areas shown in Figure 7 and Figure 2 of Schedule 1 and providing there is no waste within: <ul style="list-style-type: none"> 50 m of any surface water body and drainage line; and 3 m of the highest level of the water table aquifer. Cells/trenches must be fenced until placement of final cover. The tipping area must be clearly defined to restrict access to one cell only. Earthen bunding at least 1 m high must be installed around each trench to divert stormwater away from the landfill. Water that has come into contact with waste must be retained on the landfill.

Note 1: Requirements for landfilling tyres are set out in Part 6 of the Environmental Protection Regulations 1987.

16. The Licence Holder must ensure that cover is applied to waste in accordance with Table 7 and that sufficient stockpiles of cover are maintained on site at all times.

Table 7: Cover requirements¹

Waste Type	Material	Depth	Timescales
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Putrescible waste	Inert and incombustible material	300 mm	At least weekly.
All waste		1 000 mm	Within 3 months of achieving final waste contours.
Inert Waste Type 2 (Tyres)	Soil	500 mm	As soon as practical following the achievement of final waste levels in the area(s) where tyres are disposed of.

Note 1: Additional requirements for the covering of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

17. The Licence Holder must take all reasonable and practical measures to ensure that no windblown waste escapes from the landfill area and that windblown waste is collected on at least a monthly basis and returned to the active tipping area.
18. The Licence Holder must ensure the limits specified in Table 8 are not exceeded.

Table 8: Production or design capacity limits

Category	Category description	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	30,000,000 tonnes per year
6	Mine dewatering	573,600 tonnes per year
12	Screening etc. of material	400,000 tonnes per year
54	Sewage facility	600 cubic metres per day
64	Class II putrescible landfill site	5,000 tonnes per year

19. The Licence Holder must ensure that the site infrastructure and equipment listed in Table 9 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 9.

Table 9: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirements	Infrastructure location
Mobile crusher and crushing circuit (Category 5)	Mobile crusher and crushing circuit comprising jaw crushers, cone crushers, scalping screens, screens and conveyors between crushers and screens.	Schedule 1, Figure 2 (within area marked as Process Plant), and Figure 8.
	Circuit capable of crushing approximately 450 tonnes per hour (tph) of magnetite ore to <50 mm specification.	
	Water spray nozzles on the crushing plant, focused primarily on the jaw and cone crushers, and in constant operation when the mobile crusher is in use.	
	Conveyors fitted with spray nozzles at locations to	

	reduce dust emissions as far as practicable.	
Mobile crushing and screening plant (Category 12)	Mobile plant comprising of a jaw crusher, secondary crusher and diesel hydraulic track mounted screen.	Schedule 1, Figure 2 (within area marked as Waste Rock Dump) and Figure 9.
	Stock and feed piles are required to be wetted down by a water truck to reduce dust emissions as far as practicable.	

Emissions

- 20.** The Licence Holder must record and investigate the exceedance of any descriptive or numerical limit specified in any part of this Licence.
- 21.** The Licence Holder must ensure that where waste is emitted to land from the emission points in Table 10 it is done so in accordance with the conditions of this Licence.

Table 10: Emissions to land

Emission Point	Location	Description	Source including abatement
Karara Village WWTP Sprayfield	As specified by Figure 3 of Schedule 1	Discharge of wastewater to a 16 ha spray field area	Treated wastewater from the WWTP
Plant WWTP Sprayfield	As specified by Figure 4 of Schedule 1: Maps	Discharge of wastewater to a 16.5 ha spray field area	Treated wastewater from the WWTP

General monitoring

- 22.** The Licence Holder must ensure that:
- all water samples are collected and preserved in accordance with AS/NZS 5667.1;
 - all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
 - all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
 - all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.
- 23.** The Licence Holder must ensure that:
- monthly monitoring is undertaken at least 15 days apart;
 - quarterly monitoring is undertaken at least 45 days apart;
 - six monthly monitoring is undertaken at least 5 months apart; and
 - annual monitoring is undertaken at least 9 months apart.
- 24.** The Licence Holder must ensure that all monitoring equipment used on the Premises comply with the conditions of this Licence and is calibrated in accordance with the manufacturer's specifications.

25. The Licence Holder must, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

Monitoring of emissions to land

26. The Licence Holder must undertake the monitoring in Table 11 according to the specifications in that table.

Table 11: Monitoring of emissions to land

Emission Point	Parameter	Units	Reference Period	Frequency
M2 on Figure 3 of Schedule 1: Maps and M3 on Figure 4 of Schedule 1: Maps	pH ¹	Non specified	Spot sample	Quarterly
	5-day biochemical oxygen demand	mg/L		
	Disinfection - chlorine residual ¹			
	total dissolved solids			
	total nitrogen as N			
	total phosphorus as P			
	Escherichia coli	cfu/100 mL		

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

Monitoring of inputs and outputs

27. The Licence Holder must undertake the monitoring in Table 12 according to the specifications in that table.

Table 12: Monitoring of inputs and outputs

Input/Output	Monitoring point reference	Parameter	Units	Averaging Period	Frequency
Treated wastewater discharged to the Karara Village WWTP sprayfield	Magflow metre (M2) as specified in Figure 3 of Schedule 1	Volumetric flow rate (cumulative)	m ³ /day	Monthly	Continuous
Treated wastewater discharged to the Plant WWTP sprayfield	Magflow metre (M3) as specified in Figure 4 of Schedule 1	Volumetric flow rate (cumulative)	m ³ /day		
Water from mine dewatering	Discharge point to Blue Hills North Open Pit	Volumetric flow rate (cumulative)	m ³		

28. The Licence Holder must undertake monitoring of the water balance for TSF 2A and TSF 2B 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; and
 - (e) estimate of seepage losses.

Ambient environmental quality monitoring

29. The Licence Holder must monitor emissions in accordance with Table 13.

Table 13: TSF 2B ambient groundwater quality

Monitoring location	Parameter	Unit	Frequency	Averaging period
MB30 and the bores installed in accordance with the hydrogeologist's report from condition 8.	Standing water level ¹	mbgl	At least once prior to deposition of tailings into TSF 2B and monthly thereafter.	Spot sample
	Electrical conductivity ¹	µS/cm		
	pH ¹	-		
	Total Dissolved Solids	mg/L		
	Turbidity			
	Hydroxide as CaCO ₃			
	Total Alkalinity			
	Fluoride			
	Perchlorate			
	Major ions - Calcium, Magnesium, Sodium, Potassium, Chloride, Sulphate, Carbonate, Bicarbonate HCO ₃			
	Nutrients - Nitrate, Nitrite, Ammonia, Reactive Phosphorus, Total Phosphorus and Total Nitrogen			
	Heavy metals (dissolved and total) - Arsenic, Aluminium, Beryllium, Boron, Cadmium, Cobalt, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Thallium, Vanadium and Zinc.			

30. The Licence Holder must undertake the monitoring in Table 14 according to the specifications in that table.

Table 14: Monitoring of ambient groundwater quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
Blue Hills North Pit Located on Schedule 1, Figure 2	Standing water level ¹	mbgl	Spot sample	Monthly
BHN1003; BHN1002; MKC439 Located on Figure 2 of Schedule 1; and TSF-MB1-2018 (MB1) TSF-MB2-2018 (MB2) TSF-MB3-2018 (MB3) TSF-MB4-2018 (MB4) MB30 MB32 MB06 MB40 MB52 MB46 MB49 Located on Figure 6 of Schedule 1	Standing water level ¹	mbgl	Spot sample	Monthly
	Electrical conductivity ¹	µS/cm		Six monthly
	pH ¹	-		
	Total Dissolved Solids	mg/L		
	Turbidity			
	Hydroxide as CaCO ₃			
	Total Alkalinity			
	Fluoride			
	Perchlorate			
	Major ions - Calcium, Magnesium, Sodium, Potassium, Chloride, Sulphate, Carbonate, Bicarbonate HCO ₃			
	Nutrients - Nitrate, Nitrite, Ammonia, Reactive Phosphorus, Total Phosphorus and Total Nitrogen			
	Heavy metals (dissolved and total) - Arsenic, Aluminium, Beryllium, Boron, Cadmium, Cobalt, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Thallium, Vanadium and Zinc.			

Records

- 31.** All information and records required by the Licence must:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 31(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - i) off-site environmental effects; or
 - ii) matters which affect the condition of the land or waters.
- 32.** The Licence Holder must complete an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 33.** The Licence Holder must implement a complaints management system that as a minimum, records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

Reporting

- 34.** The Licence Holder must submit to the CEO an Annual Environmental Report within 28 calendar days after the end of the annual period. The report must contain the information listed in Table 15 in the format or form specified in that table.

Table 15: Annual Environmental report

Condition or table (if relevant)	Parameter	Format or form
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken.	None specified
-	Comparison of the approved production and design capacities and actual production/ throughput for the Annual Period.	
Table 11	Monitoring of emissions to land.	
Table 12	Monitoring of inputs and outputs.	
28	Annual water balance	None specified
Table 13	TSF 2B ambient groundwater quality	To include graphical and historical representation in

		addition to raw data
Table 14	Groundwater monitoring.	To include graphical and historical representation in addition to raw data
32	Annual Audit Compliance Report.	Downloadable form at www.dwer.wa.gov.au
33	Complaints summary.	None specified
N/A	An assessment of monitoring results collected within the Annual Period against previous monitoring results and any limits specified in this Licence.	None specified

35. The Licence Holder must submit the information in Table 16 to the CEO according to the specifications in that table.

Table 16: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form
-	Copies of original monitoring reports submitted to the Licence Holder by third parties	Not Applicable	Within 14 days of the CEOs request	As received by the Licence Holder from third parties

Notification

36. The Licence Holder must ensure that the parameters listed in Table 17 are notified to the CEO in accordance with the notification requirements of the table.

Table 17: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
15, 18 and 20	Breach of any limit specified in the Licence.	Part A: As soon as practicable or within 72 hours after the detection of any incident which has caused, is causing or may cause pollution, has occurred.	N1
		Part B: As soon as practicable.	
-	Production ceasing for an unspecified period of time (excluding maintenance and shutdowns)	As soon as practicable after the decision has been made.	None Specified
-	Production recommencing	At least 28 days prior to production recommencing.	None Specified

Note 1: Notification requirements in the Licence must not negate the requirement to comply with s72 of the Act.

Note 2: Forms are in Schedule 2.

Definitions

In this licence, the terms in Table 18 have the meanings defined.

Table 18: Definitions

Term	Definition
ACN	Australian Company Number.
Acceptance Criteria	has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended 2019), published by the CEO and as amended from time to time.
AEP	Annual Exceedance Probability
AHD	means Australian Height Datum.
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
ARI	means average recurrence interval.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i> .
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i> .
Averaging period	means the time over which a limit or target is measured or a monitoring result is obtained.
Beach freeboard	is the vertical height between the normal operating pond level plus an allowance for an inflow corresponding to the 1-in-100-year 72-hour ARI rainfall event falling in the catchment of the pond, assuming that no uncontrolled discharge takes place for the duration of the rainfall event, and the point on the beach where the wall freeboard is measured. The beach freeboard may vary significantly during the life of the storage and depends upon beach length, slurry or tailings characteristics and deposition methodology. Beach freeboard is not applicable where the pond is normally located against a perimeter retaining structure.
books	has the same meaning given to that term under the EP Act.

Term	Definition
CEO	means Chief Executive Officer of the Department. “submit to / notify the CEO” (or similar), means either: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
cfu/100mL	means coliform forming units per 100 millilitres.
Clean fill	has the meaning defined in the Landfill Waste Classification and Waste Definitions 1996 (As amended 2019).
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
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.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
EP Regulations	<i>Environmental Protection Regulations 1987</i> (WA).
Freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
HDPE	means high density polyethylene.
Inert Waste Type 1	has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended 2019), published by the CEO and as amended from time to time.
Inert Waste Type 2	has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (As amended 2019), published by the CEO and as amended from time to time.
Landfill Waste Classification and Waste Definitions 1996 (As amended 2019)	means the document entitled “Landfill Waste Classification and Waste Definitions 1996 (As amended 2019), published by the Chief Executive Officer and as amended from time to time.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
m ³	means cubic metres.

Term	Definition
mbgl	means metres below ground level.
mg/L	means milligrams per litre.
mm	means millimetre.
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.
Operational freeboard	is the vertical height between the lowest elevation of the perimeter retaining structure and the tailings beach immediately inside the retaining structure. The operational freeboard varies over the course of a deposition cycle as the storage is raised and fills with tailings. The operational freeboard becomes critically important at the end of a deposition cycle, particularly to minimise the potential for back flow and overtopping as a result of mounding of tailings at discharge points.
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on Map 1 of Schedule 1 to this licence.
Suitably qualified	means a person who: <ul style="list-style-type: none"> (a) holds a relevant tertiary academic qualification; (b) has a minimum of 5 years of experience working in the relevant area/field of expertise; and (c) holds membership in a relevant professional body.
Schedule 1	means Schedule 1 of this Licence unless otherwise stated.
Schedule 2	means Schedule 1 of this Licence unless otherwise stated.
Spot sample	means a discrete sample representative at the time and place at which the sample is taken.
TDS	means total dissolved solids.
Tipping area	means the area of the landfill in which waste other than cover material is being deposited.
Total freeboard	is the vertical height between the lowest point on the crest of the perimeter retaining structure of the TSF and the normal operating pond level plus an allowance for an inflow corresponding to the 1-in-100-year 72-hour ARI rainfall event falling in the catchment of the pond, assuming that no decant recovery takes place for the duration of the rainfall event. In effect total freeboard is the Operational Freeboard + Beach Freeboard = 500mm with a subminimum of 300mm Operational Freeboard.
TSF	means tailings storage facility.
TSF Landform	means the combination of the areas shaded as 'Dry TSF', 'TSF1' and 'TSF2' in Figure 2 of Schedule 1, as one feature.
UDR	means Environmental Protection (Unauthorised Discharge) Regulations

Term	Definition
	2004 (WA).
prescribed premises	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.
WCSF	means wet concentrate storage facility.
Wet tailings	means tailings with moisture content more than 20%.
zone 1	central core of compacted dry tailings.
zone 2	an upstream and downstream shell of mine waste.
zone 3	cap of compacted colluvium.

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

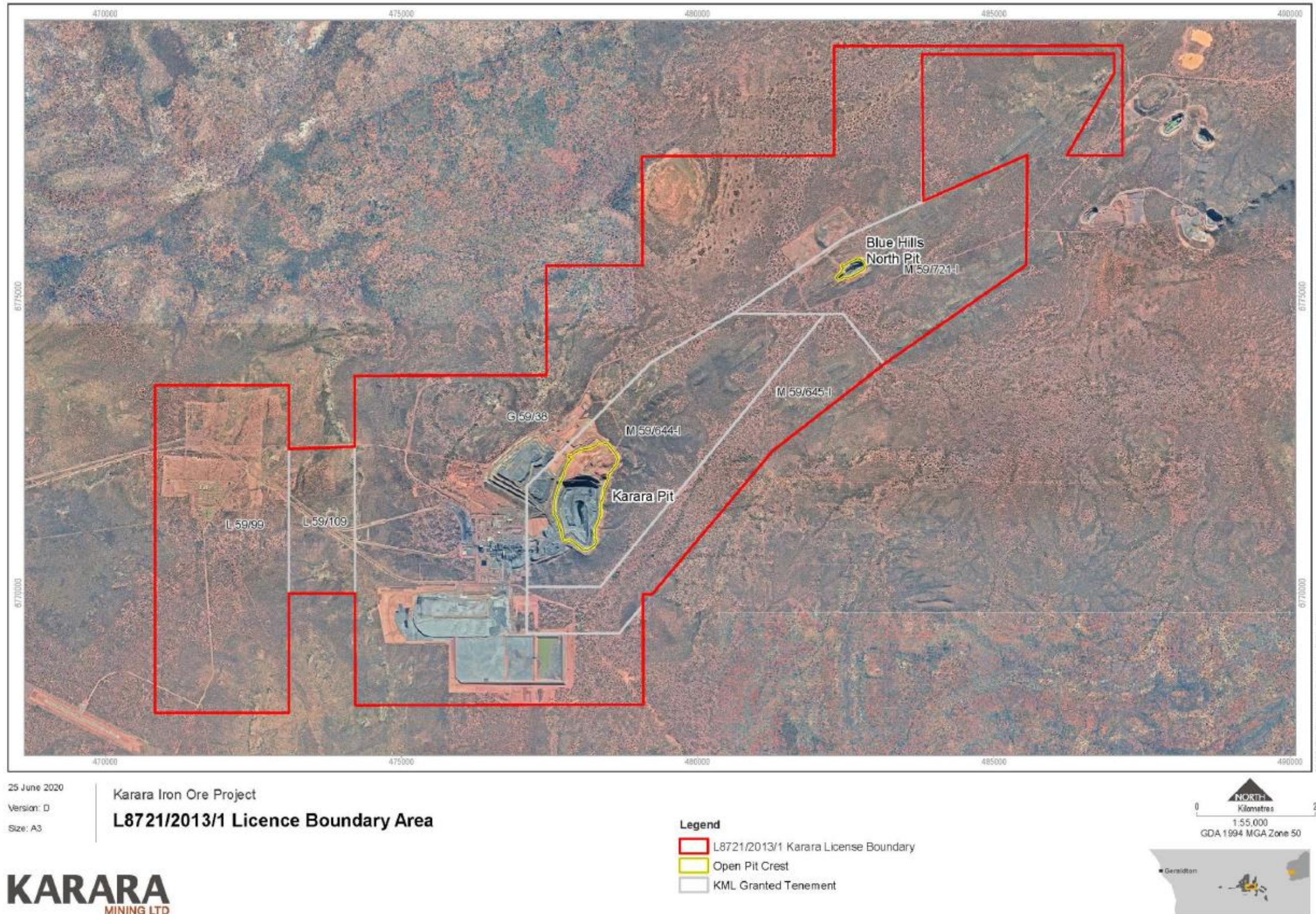


Figure 1: Map of the boundary of the prescribed premises.

L8721/2013/2 (Date of amendment: 21/11/2022)

Key infrastructure at the Premises

Key infrastructure at the prescribed premises is shaded in the map below (Figure 2).

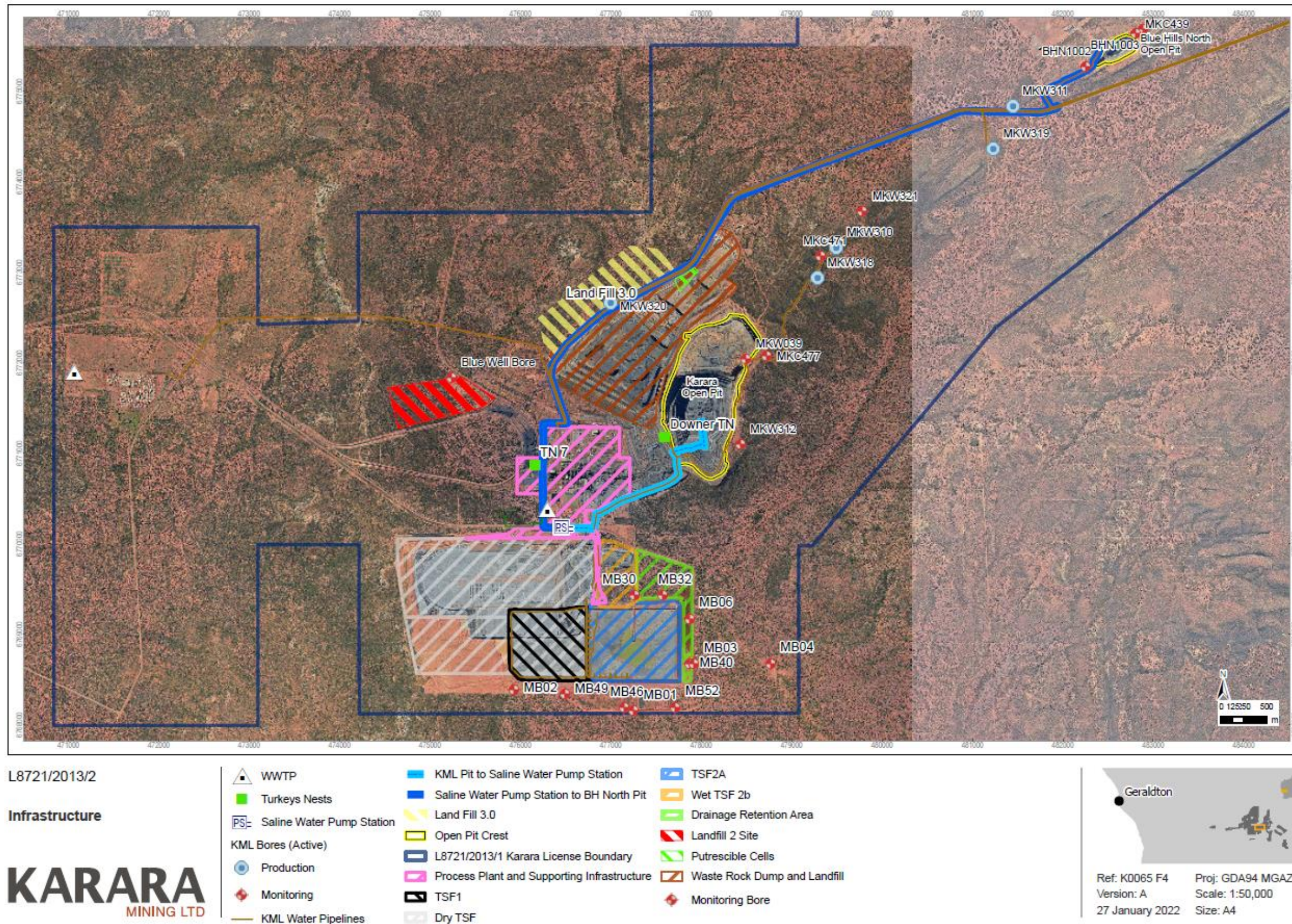


Figure 2: Map of key infrastructure at the prescribed premises.

L8721/2013/2 (Date of amendment: 21/11/2022)

Emission point – Karara Village WWTP and Spray Field

The location of the Karara Village WWTP and Spray Field are labelled in the map below (Figure 3).

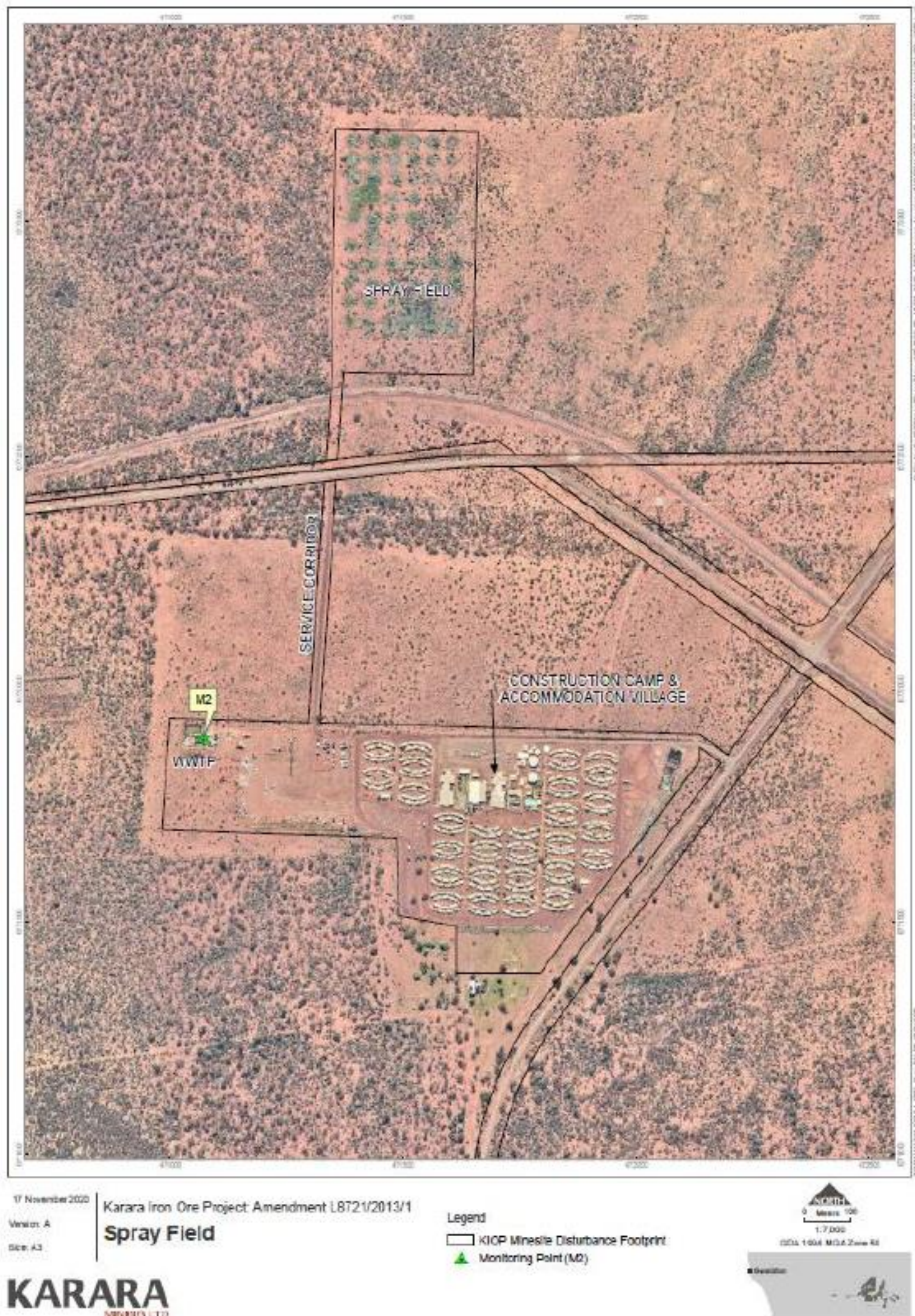


Figure 3: Map of the Karara Village WWTP and Sprayfield which are emission points.

Emission point – Plant WWTP and Spray Field

The location of the future Plant WWTP and Spray Field are shaded in purple and light blue in the map below (Figure 4)

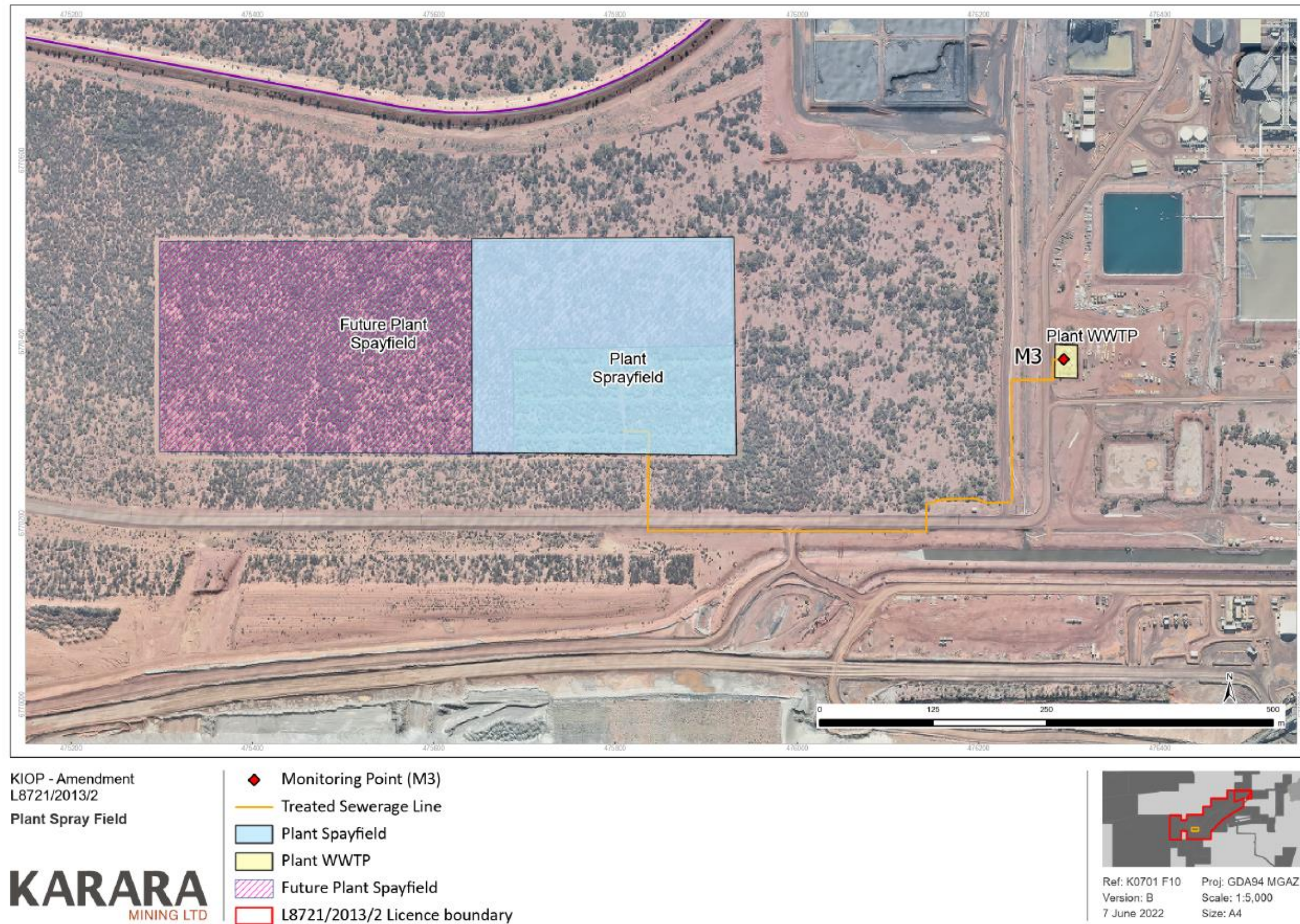
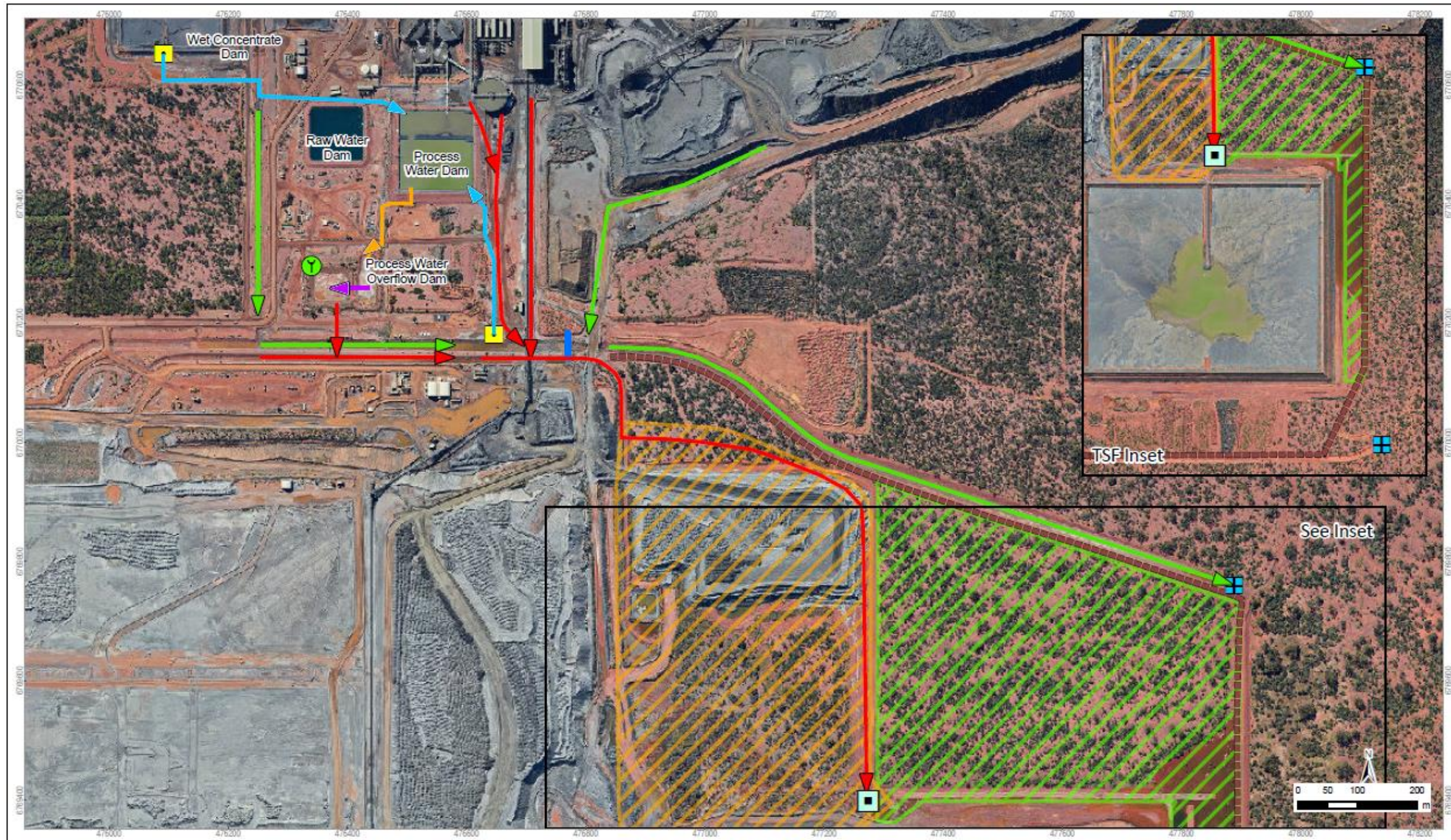


Figure 4: Map of the future Plant WWTP and Spray Field which are emission points.

Surface Water Drainage

Surface water drainage at the Premises is shown in red and green in the map below (Figure 5).



L8721/2013/2

Surface Water Drainage

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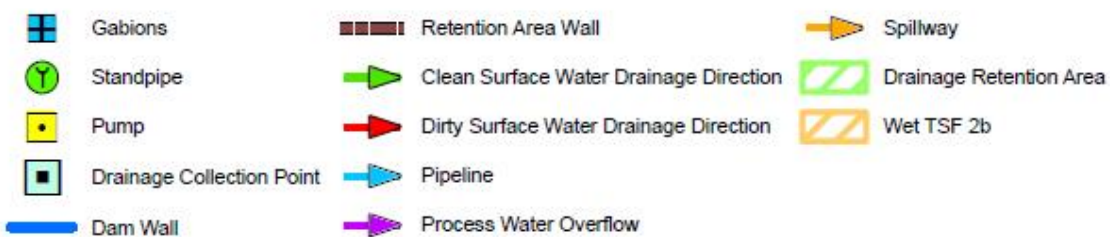
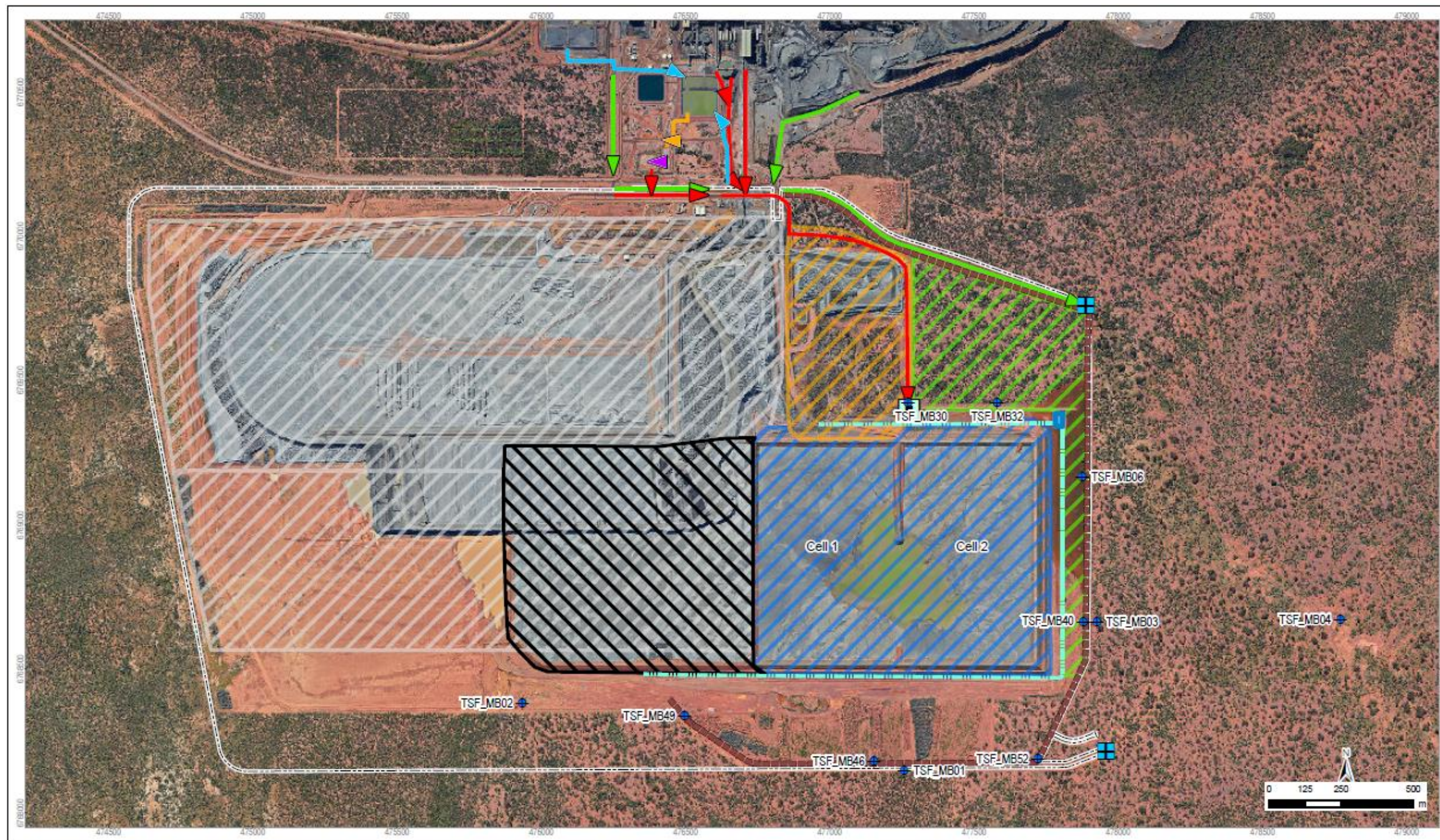


Figure 5: Map of Surface Water Drainage at the Premises. Red indicates 'dirty water' and green indicates 'clean water' channels.

TSF 2A layout, drainage and seepage collection sump, and monitoring bore locations


















The TSF 2A layout, drainage and seepage collection sump, and monitoring bore locations are shown in the map below (Figure 6).



L8721/2013/2

TSF Landform

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- | | | | | | |
|---|--|---|------------------------|---|-------------------------|
|  | Monitoring Bore |  | Pipeline |  | Drainage Retention Area |
|  | Gabions |  | Process Water Overflow |  | Dry TSF |
|  | Drainage Collection Point |  | Spillway |  | TSF2A |
|  | Seepage Collection Sump |  | Toe Drain |  | Wet TSF 2b |
|  | Clean Surface Water Drainage Direction |  | Retention Area Wall |  | TSF1 |
|  | Dirty Surface Water Drainage Direction |  | TSF Boundary | | |



Ref: K0065 F3 Proj: GDA94 MGAZ50
Version: A Scale: 1:17,500
27 January 2022 Size: A4

Figure 6: Map of TSF2A layout, drainage and seepage collection sump, and monitoring bore locations.

Landfill 2 – location of waste cell areas

The landfill boundary is shown red and the waste cells are shaded in yellow and green in the map below (Figure 7).

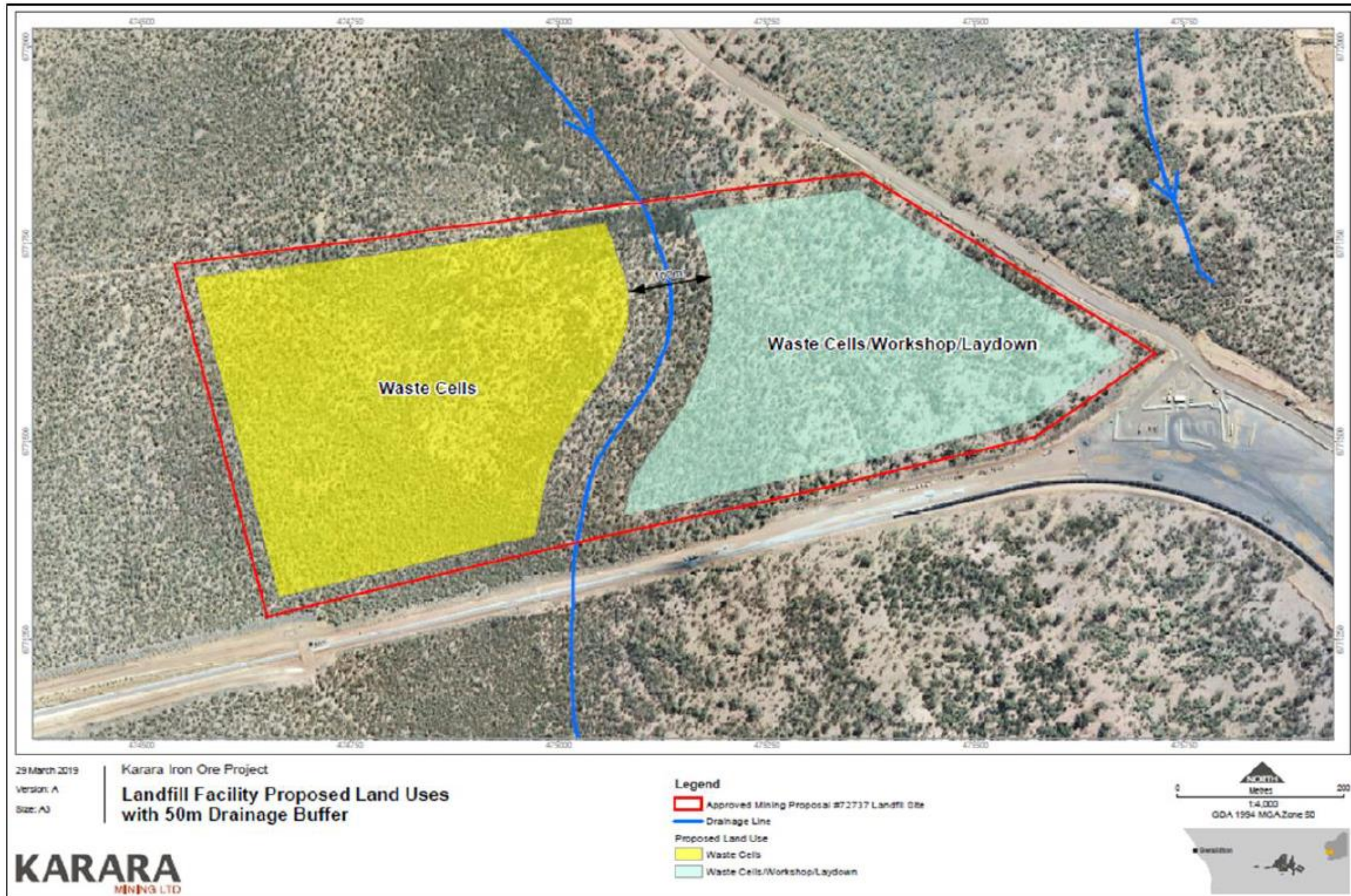
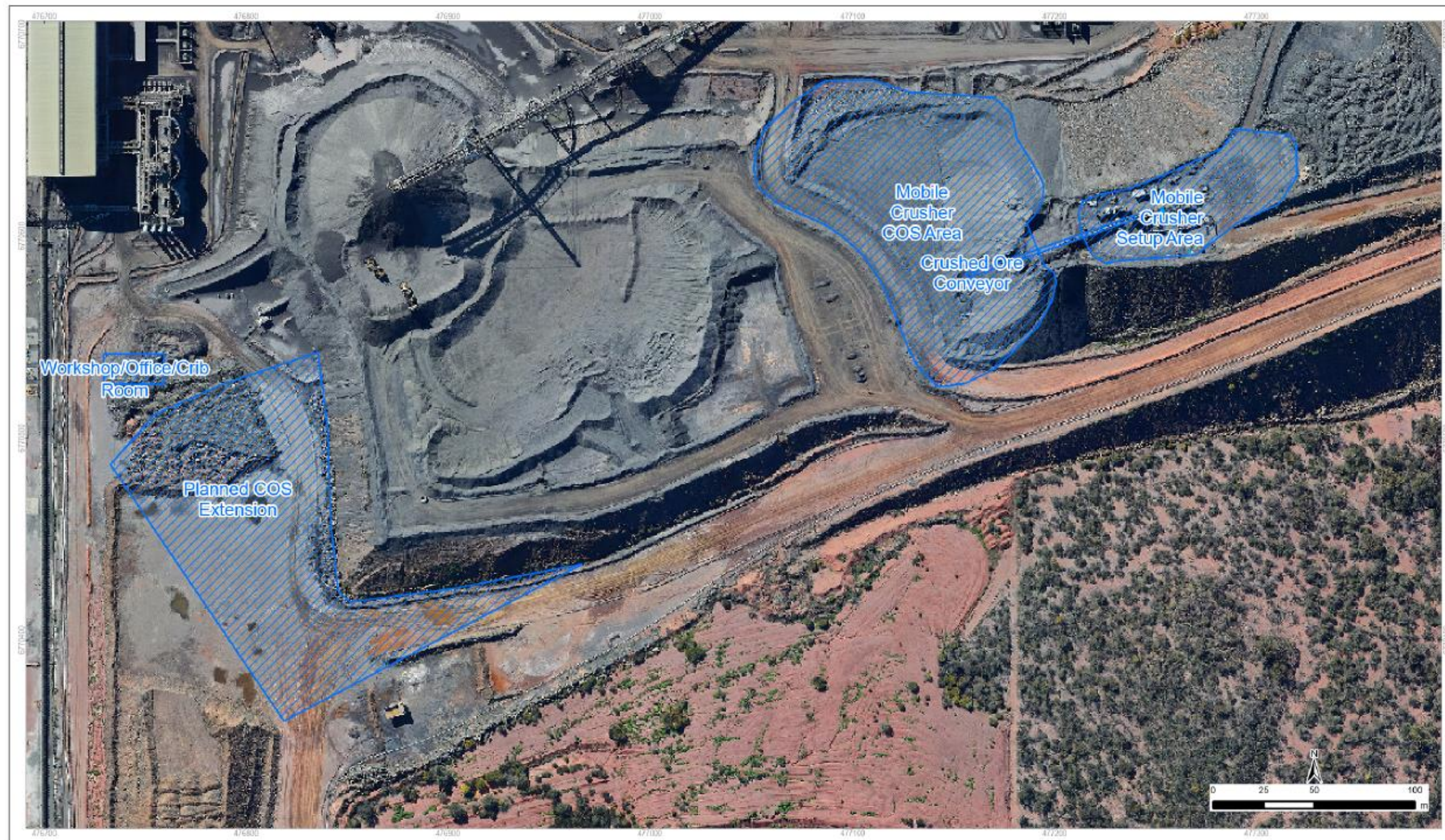


Figure 7: Map of Landfill 2. The waste cell areas are shaded in yellow and green.

Indicative location of the mobile crusher infrastructure


The location of the proposed mobile crusher and associated infrastructure are shaded in blue in the map below (Figure 8).



L8721/2013/2

Mobile Crusher Layout

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 Mobile Crusher and Associated Infrastructure


Ref: K0065 F5
Version: A
17 June 2022
Proj: GDA94 MGAZ50
Scale: 1:2,500
Size: A4

Figure 8: Map of the Mobile Crusher (Category 5 activities) operation areas and associated infrastructure.


The location of the Category 12 mobile crusher and stockpiles for processed materials are shaded in blue in the map below (Figure 9).



L8721/2013/2

WRD Mobile Crusher Layout

KARARA
MINING LTD

 WRD Mobile Crusher and Associated Infrastructure



Ref: K0065 F6 Proj: GDA94 MGAZ50
Version: A Scale: 1:4,000
20 September 2022 Size: A4

Figure 9: Map of Mobile Crusher (Category 12 activities) operation areas and associated infrastructure.

L8721/2013/2 (Date of amendment: 21/11/2022)

Wet TSF 2B Locality Plan

The wet TSF 2B locality plan and drawing list is shown in the map below (Figure 10).

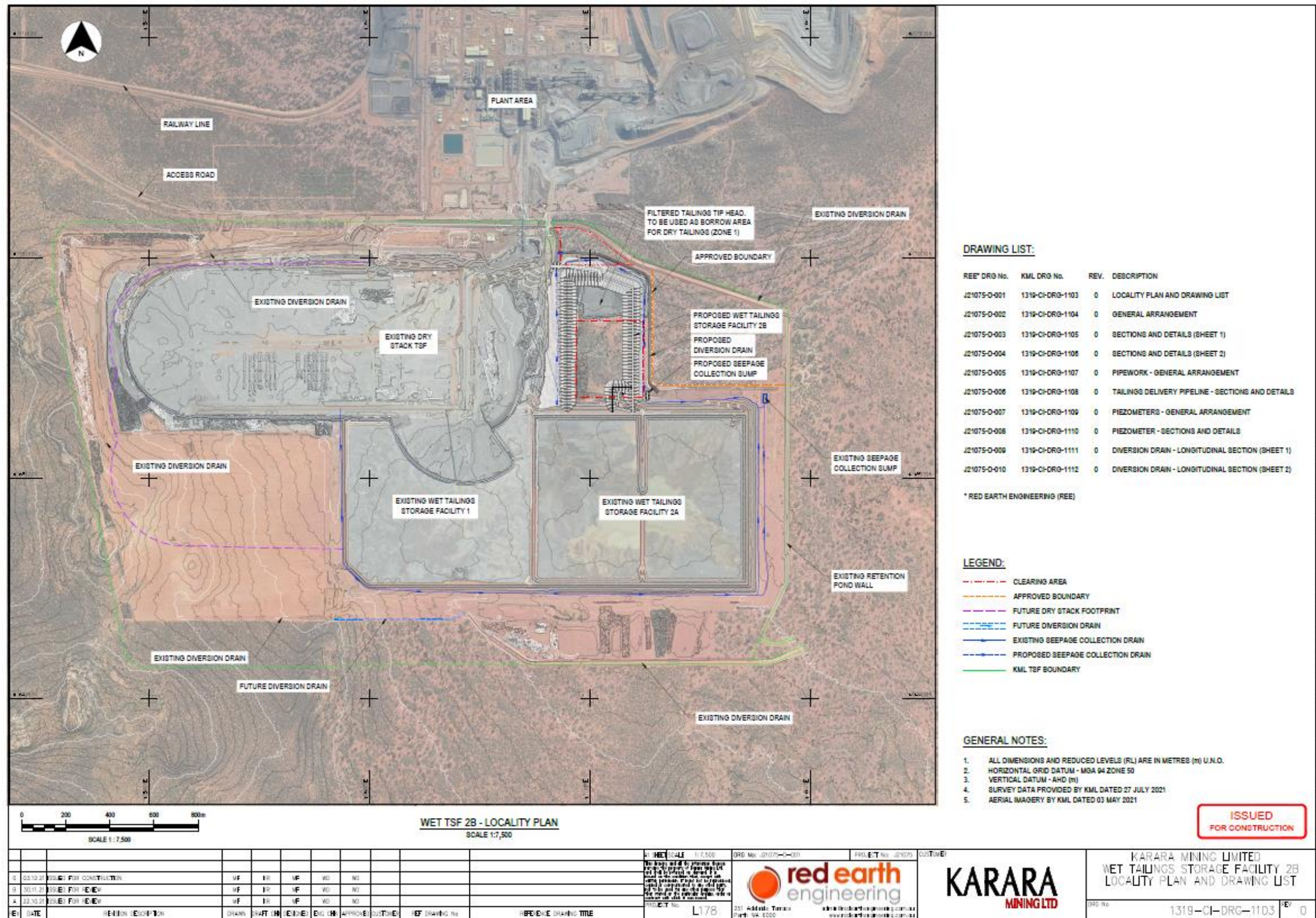


Figure 10: The wet TSF 2B locality plan.

L8721/2013/2 (Date of amendment: 21/11/2022)

The General Arrangement of the proposed Wet TSF 2B is shown in the map below (Figure 11Figure 11).



Wet TSF 2B Pipework

The arrangement of the pipework for the proposed Wet TSF 2B is shown in the map below (Figure 12).

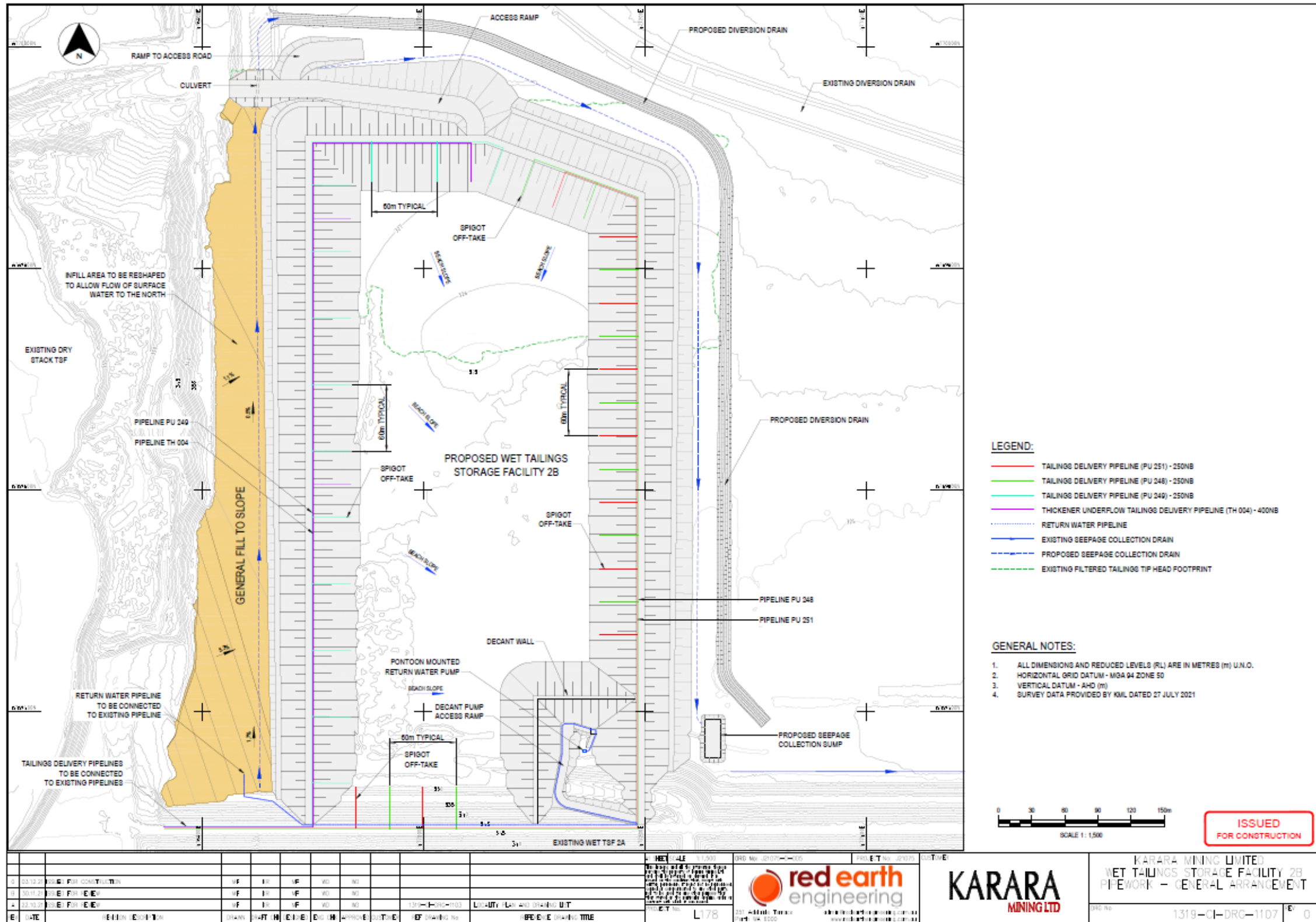


Figure 12: Map of the pipework for the proposed Wet TSF 2B.

Wet TSF 2B Piezometers

The arrangement of the Piezometers for the proposed Wet TSF 2B is shown in the map below (Figure 13).

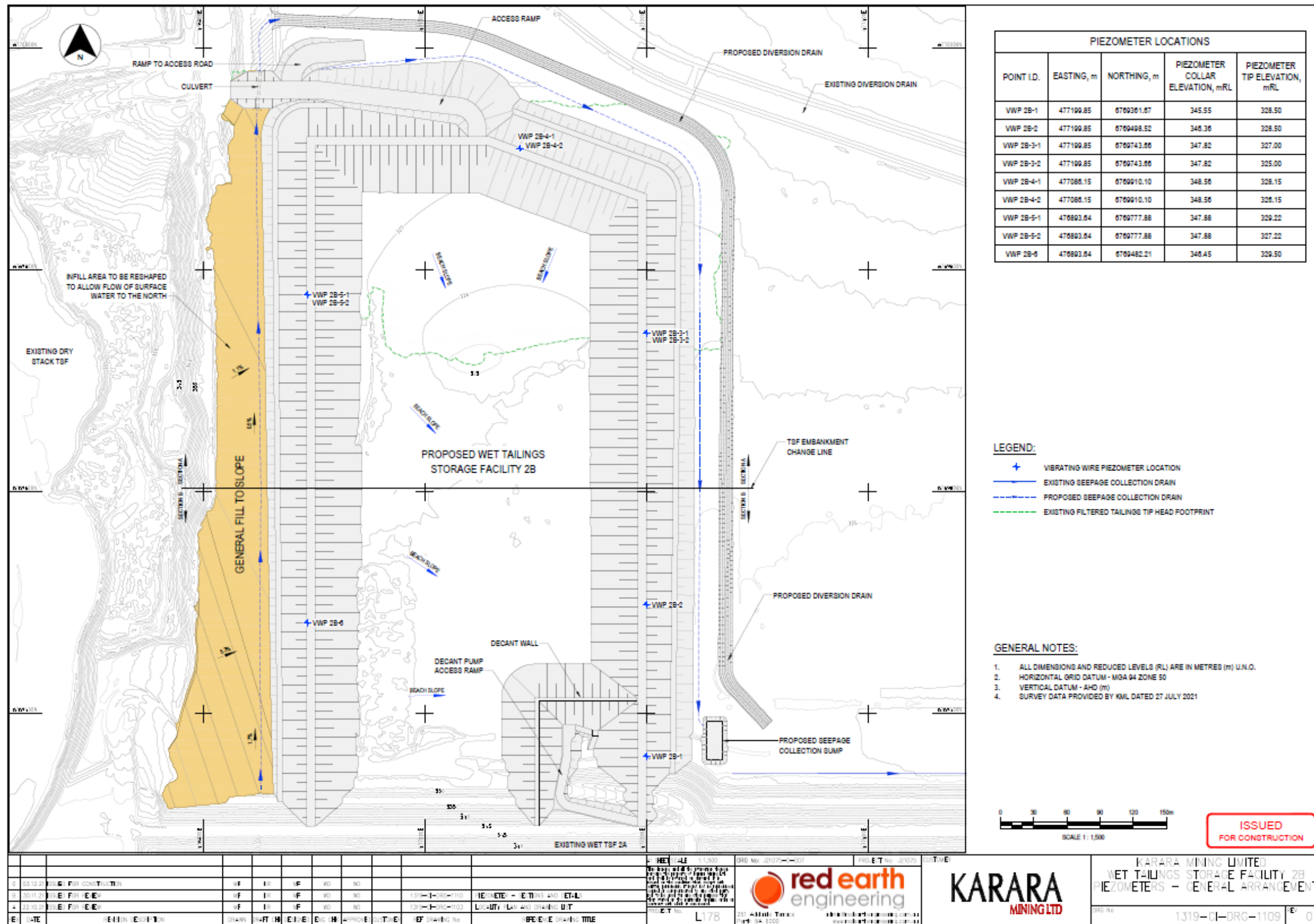


Figure 13: Map of Piezometers for the proposed Wet TSF 2B.

Schedule 2: Notification & Forms

Licence:

Licence holder:

Form: N1

Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements must be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence number	
Name of operator	
Location of premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of licence holder	
Date	