Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8148/2006/4
Licence Holder	Koolan Iron Ore Pty Ltd
ACN	099 455 277
Registered business address	First Floor 2 Kings Park Road WEST PERTH WA 6872
DWER file number	INS-0001605
Duration	12/06/2014 to 17/06/2045
Date of issue	12/06/2014
Date of amendment	03/06/2025
Premises details	Koolan Iron Ore Mine and Port Facility Mining Tenements M04/416, M04/417, L04/29 and L04/68 KOOLAN ISLAND (BUCCANEER ARCHIPELAGO) WA 6733 As depicted in Schedule 1.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed design / production capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore	5,000,000 tonnes per Annual Period
Category 6: Mine dewatering	10,000,000 tonnes per Annual Period
Category 12: Screening	2,000,000 tonnes per Annual Period
Category 54: Sewage facility	130 cubic metres per day
Category 58: Bulk material loading or unloading	75,000 tonnes per day
Category 64: Class II or III putrescible landfill site	4,500 tonnes per Annual Period
Category 73: Bulk storage of chemicals	1,200 cubic metres in aggregate

This amended licence is granted to the licence holder, subject to the attached conditions, on 03 June 2025 by:

Fiona Westcott

Digitally signed by Fiona Westcott
Date: 2025.06.03 16:19:42 +08'00'

MANAGER, RESOURCE INDUSTRIES

an officer delegated under section 20 of the Environmental Protection Act 1986

Licence history

The licences issued for the Premises since 20/06/2006 are:

Reference number	Date	Summary of changes
L8148/2006/1	18/06/2007	New licence application issued to allow operation of the processing plant, ship loader, bulk chemical storage facility, landfill and sewage facility.
L8148/2006/2	18/06/2009	New Licence.
L8148/2006/3	18/06/2012	New Licence.
L8148/2006/4	12/06/2014	New Licence and conversion to new format.
L8148/2006/4	18/06/2015	Licence amendment following Minister's appeal determination number 123 of 2014.
L8148/2006/4	31/03/2016	Licence amendment to include category 12 to allow for the crushing and screening of quartzite to produce aggregate for construction purposes, increase the category 73 design capacity and make changes to the groundwater monitoring requirements. The Licence also updated in accordance with licence template and relevant guidance statements.
L8148/2006/4	29/04/2016	Amendment of Licence expiry date.
L8148/2006/4	19/05/2016	Licence amendment to change the approved production limits for each Licence category to the minimum threshold amount (site in care and maintenance).
L8148/2006/4	17/02/2017	Amendment Notice 1 Licence amendment to increase the throughput for category 12.
L8148/2006/4	18/10/2017	Amendment Notice 2 Licence amendment to increase the design capacity of category 6 and 64.
L8148/2006/4	12/09/2018	Amendment Notice 3 Licence amendment to increase the design capacity for category 5, 58 and 73. Site coming out of care and maintenance, operations to resume.
L8148/2006/4	19/07/2019	Amendment Notice 4 Licence amendment to revert back to Total Suspended Solids with a limit of 20 mg/L for point source emissions to surface water.
L8148/2006/4	N/A	Amendment Notice 5 Withdrawn

Reference number	Date	Summary of changes
L8148/2006/4	19/05/2020	Amendment to consolidate Amendment Notices 1 to 5
L8148/2006/4	24/07/2020	Amendment to allow for contingency dewater discharge from emission point W1.
L8148/2006/4	13/10/2021	Amendment to increase category 5 throughput and refurbishment of existing crusher plant.
L8148/2006/4	26/08/2024	Amendment to construct and operate a Tertiary Circuit at the existing Processing Plant; operation of a mobile crushing and screening (MCS) plant; construction and operation of a new wastewater treatment plant (WWTP) and a new irrigation sprayfield; update the premises map to include Waste Dump 5 (WD5) and L04/68; and administrative amendment to remove three ambient groundwater monitoring bores.
L8148/2006/4	03/06/2025	Amendment to increase dewater discharge from 5,000,000 tonnes per year to 10,000,000 tonnes per year, removal of emission point W2, and change emission point W3 to the routine emission point. A definition for 'contingency discharge' has been added, along with volumetric flow limits for discharge points, and the CD1 form has been updated to include photographic evidence for reaching mine dewater storage capacity. The duration of the licence has also been extended.

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:
    (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 *Environmental Protection Act 1986;* and
(f) unless specified otherwise, all definitions are in accordance with the *Environmental Protection Act 1986*.

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

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

Infrastructure and equipment

1. The Licence Holder must maintain on site a register of the following Plant and Equipment:

(a) Loading systems, including but not limited to enclosures and launder systems;

(b) Crushing and screening plants;

(c) Sediment basins;

(d) Secondary containment infrastructure, including but not limited to bunding and hard stand areas; and

(e) Dust suppression systems including but not limited to sprinklers, enclosures and water carts.

2. All Plant and Equipment on the register must be maintained in accordance with a documented maintenance plan or program that ensures the Plant and Equipment is maintained in good working order.

3. The Licence Holder must:

(a) construct and/or install the infrastructure and/or equipment;

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

(c) at the corresponding infrastructure location; and

as set out in Table 1.

Table 1: Design and construction requirements / installation requirement

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1	Tertiary circuit of processing plant	a) Located on a pad. b) Area designed to drain stormwater to sumps in low points within operating area or directed to the low-flow surface water filter drain to appropriately manage stormwater and remove sediment loading. c) Low flow-filter water drain to be installed and designed to capture first-flush sediment in a 1 in 10-year (10% AER) 1 hour rainfall event at the location marked 'Surface Water Infrastructure' on figure 4, Schedule 1 d) In-built dust suppression system installed such as water outlets and sprays at each of the transfer points of the tertiary circuit.	As per Schedule 1: Figure 1, 4 and 7

		e) Built as per manufacturer instructions and procedures.	
2	Wastewater Treatment Plant (WWTP)	a) Must be capable of treating up to 130 m^3 of sewage per day; b) Must be able to treat sewage influent to the following minimum requirements: • pH 6.5 – 8.5; • Biochemical Oxygen Demand <20 mg/L; • Total Suspended Solids <30 mg/L; • Total Nitrogen <30 mg/L; • Total Phosphorus <8 mg/L; • E. coli <1,000 mg/L; and • Residual free chlorine 0.5 – 2.0 mg/L; c) Constructed as per the specifications in Figure 4 of Schedule 1 ; d) All sewage storage and treatment tanks must be enclosed; e) An alarm system must be installed to notify the operator of high water levels, pump failures and other failures; f) Flow meters are fitted on the WWTP outlet to the irrigation discharge areas; g) All sewage storage and treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks and defects; and h) Designed to prevent clean stormwater from entering the sewage treatment system and storage infrastructure.	As per Schedule 1: Figure 1 and 5
3	Irrigation spray field L4	a) Constructed with a minimum total size of 3.3 ha; b) Construct perimeter and internal windrows as marked on Figure 5; c) Pivot sprinklers must be positioned to ensure even distribution of treated wastewater across the spray field; and d) Pipelines must be impermeable and free of leaks.	As per Schedule 1: Figure 1, and 6

4. The Licence Holder must within 60 days of each item of infrastructure required by condition 3 being constructed:

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

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

5. The Environmental Compliance Report required by condition 4, must include as a minimum the following:

(a) certification by a suitability qualified and experienced engineer (eligible for membership of Engineers Australia) that the items of infrastructure or component(s) thereof, as specified in condition 3, have been constructed in accordance with the relevant requirements specified in condition 3;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 3; and

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

Premises operation

6. The Licence Holder must only bury waste on the Premises in the following locations:

(a) Waste Dumps 1, 2, 3, 4 and 5; and

(b) Main Pit East.

7. The Licence Holder must only bury waste on the Premises if:

(a) it is of a type listed in Table 2;

(b) the quantity accepted is below any limit listed in Table 2; and

(c) it meets any specification listed in Table 2.

Table 2: Waste acceptance

Waste	Quantity Limit	Specification
Clean fill	Combined total of up to 4,500 tonnes per Annual Period	None specified
Inert Waste Type 1		
Inert Waste Type 2		
Putrescible waste		
Special Waste Type 1 (Asbestos)		Must be wrapped in heavy duty plastic prior to acceptance

Special Waste Type 2 (Biomedical and Clinical Waste)		The Licence Holder or their representative must note in writing any discrepancies between waste declared and waste received
Contaminated Solid Waste		Must be supported by documentation that demonstrates compliance with the acceptance criteria for Class II landfills as defined in the document '*Landfill Waste Classification and Waste Definitions 1996 (As amended)*'.

8. The Licence Holder must ensure that wastes accepted onto the Premises are only subjected to the process(es) set out in Table 3 and in accordance with any process limits described in Table 3.

Table 3: Waste processing

Waste type	Process(es)	Process Limits[1,2]
All	Disposal of waste by landfilling	• Place waste within a defined trench or within an area enclosed by earthen or other bunds; • Cover waste on a weekly basis with at least 150 mm of cover material; • Restrict the tipping area to a maximum linear length of 30 m; • The separation distance between the base of the landfill and the highest groundwater level must not be less than 3 m; and • Maintain a minimum horizontal distance of at least 100 m between the tipping area and any surface water body.
Special Waste Type 1 (Asbestos)	Receipt, handling, storage prior to or disposal by landfilling	• Only to be disposed of into a designated asbestos disposal area within the landfill; • Not to be deposited within 2 m of the final tipping surface of the landfill; and • No works must be carried out on the landfill that could lead to a release of asbestos fibres.
Special Waste Type 2 (Biomedical and Clinical Waste)	Receipt, handling and disposal by landfilling	• Only to be disposed of into a designated biomedical waste disposal area within the landfill; • Not to be deposited within 2 m of the final tipping surface of the landfill; and • No works must be carried out on the landfill that could lead to biomedical wastes being excavated or uncovered.
Contaminated Solid Waste	Receipt, handling and disposal by landfilling	None specified

Note 1: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations1987*.

Note 2: Additional requirements for the acceptance and landfilling of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004.*

9. The Licence Holder must ensure that no ponding or surface run-off of wastewater occurs from application of wastewater to the Irrigation Area.

10. The Licence Holder must ensure the limits specified in Table 4 are not exceeded.

Table 4: Production or design capacity limits

Category[1]	Category description[1]	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	5,000,000 tonnes of ore per Annual Period
6	Mine dewatering	10,000,000 tonnes per Annual Period
12	Screening, etc. of material	2,000,000 tonnes per Annual Period
54	Sewage facility	130 cubic metres per day
58	Bulk material loading or unloading	75,000 tonnes per day
64	Class II or III putrescible landfill site	4,500 tonnes per Annual Period
73	Bulk storage of chemicals	1,200 cubic metres in aggregate

Note 1: *Environmental Protection Regulations 1987*, Schedule 1.

Infrastructure and equipment requirements

11. The Licence Holder must ensure that the site infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 5.

Table 5: Site infrastructure and operation requirement

Item	Site infrastructure and equipment	Operational requirement	Infrastructure location
1	Crushing and Screening Plant near WD4	a) Only to be used at locations stated in Figure 1. b) Located on a pad. c) Stormwater must be managed to ensure runoff does not adversely impact surrounding vegetation. d) Suppression sprays must be maintained operational on the mobile crushing plant crusher discharge and conveyor discharge point.	As per Schedule 1, Figure 1: 'Proposed Category 12 – Crushing and screening'

		e) All stockpiles must be wetted down as required to minimise dust. f) Watering unsealed roadways with water carts. g) Vehicle traffic confined to defined tracks and roadways	
2	Processing plant including Tertiary circuit	a) Located on a pad. b) Maintain stormwater infrastructure to be fit for purpose. c) Maintain in-built suppression sprays at all transfer points. d) Wet down all stockpiles as required to minimise dust. e) Watering unsealed roadways with water carts.	As per Schedule 1, Figure 1: 'Fixed and mobile crushers and processing facilities'
3	WWTP, comprising : • Primary Settling Tank (32 kL); • Secondary Settling Tank (32 kL); • Balance Tank (50 kL); • Anoxic Tank (27 kL); • Aeration Tank 1 (27 kL); • Aeration Tank 2 (27 kL); • Clarifier Tank 1 (15 kL); and • Clarifier Tank 2 (15 kL).	a) All sewage and storage treatment tanks, vessels transfer pipelines and conveyance infrastructure must be maintained impermeable and free of leaks or defects. b) Stormwater is prevented from entering the sewage treatment system and storage infrastructure. c) Flow meters are maintained on the WWTP inlet and outlet to the irrigated discharge area. d) Alarm system maintained functional; e) Daily inspection of pipelines to irrigation field; and f) WWTP maintained to treat sewage to • pH 6.5 – 8.5; • Biochemical Oxygen Demand <20 mg/L; • Total Suspended Solids <30 mg/L; • Total Nitrogen <30 mg/L; • Total Phosphorus <8 mg/L; • E. coli <1,000 mg/L; and • Residual free chlorine 0.5 – 2.0 mg/L.	As per Schedule 1: Figure 1 and 5
4	Irrigation Field	a) No more than 130 m^3/day of effluent in total can be applied per day to the irrigation fields. b) No more than 23m^3/day of effluent can be applied to irrigation field L2.	As per Schedule 1: Figure 1, 2 and 6

		c) No more than 23m³/day of effluent can be applied to irrigation field L1.	

Emissions

General

12. The Licence Holder must record and investigate the exceedance of any descriptive or numerical limit specified in this Licence.

Point source emissions to surface water

13. The Licence Holder must ensure that where waste is emitted to surface water from the emission points in Table 6, it is done so in accordance with the conditions of this Licence.

Table 6: Emission points to surface water

Emission point[1]	Description	Source including abatement
W1	Main Pit Dewatering Discharge Point	Mine dewater discharged from the settlement pond to the ocean via an ocean discharge diffuser
W1a	Main Pit Contingency Dewatering Discharge Point (Contingency dewatering only)	Mine dewater discharged to the ocean via an ocean discharge diffuser
W3	Main Pit Dewatering Discharge Point	Mine dewater discharged from the in-pit sump via an ocean discharge diffuser
W4	Mullet Pit Dewatering Discharge Point	Mullet Pit mine dewater discharged from Mullet Pit to the ocean

Note 1: Location of emission points shown in Schedule 1, Map of emission points.

14. The Licence Holder must only conduct contingency dewatering discharge in the event that reuse, in pit disposal and temporary storage are not available or have been exhausted, and in accordance with the definition of 'contingency discharge' as defined in Table 16.

15. The Licence Holder must not cause or allow point source emissions to surface water greater than the limits listed in Table 7.

Table 7: Point source emission and flow limits to surface water

Emission point[1]	Parameter	Limit (including units)	Averaging period	Frequency
W1 W3 W4	Total Recoverable Hydrocarbons	15 mg/L	Spot sample	Monthly
	Total Suspended Solids	20 mg/L		Daily
	Volumetric Flow Rate	317 L/s	Continuous	Quarterly
W1a	Volumetric Flow Rate	317 L/s		

Note 1: Location of emission points shown in Schedule 1, Map of emission points.

Emissions to land

16. The Licence Holder must ensure that where waste is emitted to land from the emission points in

17. Table 8, it is done so in accordance with the conditions of this Licence.

Table 8: Emissions to land

Emission point[1]	Description	Source including abatement
L1	Irrigation Area 1 – 0.7 hectare	Treated effluent from the premises wastewater treatment system
L2	Irrigation Area 2 – 2.5 hectare	Treated effluent from the premises wastewater treatment system
L3	Turkeys Nest Dam at workshop	Treated water from workshop oil water separator discharged from Turkeys Nest overflow pipe.
L4	Irrigation Area 3 – 3.3 hectare	Treated effluent from the premises wastewater treatment system

Note 1: Location of emission points shown in Schedule 1, Map of emission points.

18. The Licence Holder must not cause or allow point source emissions to land greater than the limits listed in Table 9.

Table 9: Emission limits to land

Emission point	Parameter	Limit (including units)	Averaging period
L3[1]	Total Recoverable Hydrocarbons	15 mg/L	Spot sample

Note 1: Location of emission points shown in Schedule 1, Map of emission points.

Monitoring

General monitoring

19. The Licence Holder must ensure that:

(a) all water sampling is conducted in accordance with AS/NZS 5667.1;

(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(c) all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9 as relevant;

(d) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;

(e) all microbiological samples are collected and preserved in accordance with AS/NZS 2031; and

(f) 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.

20. The Licence Holder must ensure that:

(a) daily monitoring is undertaken at least 8 out of every 10 consecutive days;

(b) monthly monitoring is undertaken at least 15 days apart; and

(c) quarterly monitoring is undertaken at least 45 days apart.

21. The Licence Holder must ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.

22. 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 point source emissions to surface water

23. The Licence Holder must undertake the monitoring in Table 10 according to the specifications in Table 10.

Table 10: Monitoring of point source emissions to surface water

Monitoring point[1]	Parameter	Units	Frequency	Analytical Specifications
M12 M12a	Volumetric flow rate	m^3	Monthly	Flow meter
M13 M14 M15	Volumetric flow rate	m^3	Monthly	Estimate
M12 M12a M13 M14 M15	Total Suspended Solids	mg/L	Daily (during discharge)	Analysis in premises onsite laboratory in accordance with laboratory procedure specified in Schedule 3
M12 M13 M14 M15	Total Recoverable Hydrocarbons	mg/L	Monthly	NATA Accredited Laboratory

Note 1: Location of monitoring points shown in Schedule 1, Map of monitoring points.

Monitoring of emissions to land

24. The Licence Holder must undertake the monitoring in Table 11 according to the specifications in Table 11.

Table 11: Monitoring of emissions to land

Monitoring point[1]	Parameter	Units	Frequency
M11	Volumetric flow rate[2]	m^3	Monthly
M11	Biochemical Oxygen Demand	mg/L	Quarterly
M11	Total Suspended Solids	mg/L	
M11	pH[1]		
M11	Total Nitrogen	mg/L	
M11	Total Phosphorus	mg/L	
M11	*E. coli*	Organisms / 100mL	
M11	Residual chlorine	mg/L	
M16	Total Recoverable Hydrocarbons	mg/L	

Note 1: Location of monitoring points shown in Schedule 1, Map of monitoring points.
Note 2: In-field non-NATA accredited analysis permitted.

Ambient environmental quality monitoring

25. The Licence Holder must undertake the monitoring in
26. Table 12 according to the specifications in Table 12.

Table 12: Monitoring of ambient groundwater quality

Monitoring point[1]	Parameter	Units	Averaging period	Frequency
M1	Standing water level2	m(AHD)		Annually

M3 M4 M5 M6 M9 M10	pH[2]		Spot sample	
	Electrical conductivity[2]	µS/cm		
	Total Recoverable Hydrocarbons	mg/L		
	Hardness (as equivalent $CaCO_3$)			
	Total Alkalinity (as $CaCO_3$)			
	Total Nitrogen			
	Total Phosphorus			
	Bicarbonate			
	Carbonate			
	Nitrate			
	Sulfate			
	Aluminium			
	Arsenic			
	Barium			
	Boron			
	Cadmium			
	Calcium			
	Chromium			
	Copper			
	Iron			
	Lead			
	Magnesium			
	Manganese			
	Mercury			
	Molybdenum			
	Nickel			
	Potassium			
	Selenium			

	Sodium			
	Zinc			

Note 1: Location of monitoring points shown in Schedule 1, Map of monitoring points.
Note 2: In-field non-NATA accredited analysis permitted.

Information

Records

27. 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 27(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence; and

(d) for those following records, be retained until the expiry of the Licence:

(i) off-site environmental effects; or

(ii) matters which affect the condition of the land or waters.

28. The Licence Holder must submit to the CEO within 90 days after the end of the Annual Period, an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the conditions of this Licence for the Annual Period.

29. 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

30. The Licence Holder must submit to the CEO an Annual Environmental Report within 90 calendar days after the end of the Annual Period. The report must contain the information listed in Table 13 in the format or form specified in Table 13.

Table 13: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form[1]
-	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
Table 5	Report on performance of stormwater infrastructure within the tertiary crushing precinct, including any sediment removal. Report on mangrove canopy cover and vegetation quality monitoring at Mangrove inlet (the tidal inlet	None specified

	between the tertiary crushing precinct and the shiploader jetty)	
Table 6	Contingency dewatering discharge activities	CD1
Table 2, 4, 7 and 9	Limit Exceedances	None specified
Table 10	Volumetric Flow Rate, Total Suspended Solids and Total Recoverable Hydrocarbons	WR1
Table 11	Volumetric flow rate, Biochemical Oxygen Demand, Total Dissolved Solids, pH, Total Nitrogen, Total Phosphorus, *E.coli*, Total Recoverable Hydrocarbons	LR1
Table 12	Standing water level, pH, Electrical conductivity, Total Recoverable Hydrocarbons, Hardness (as equivalent $CaCO_3$), Total Alkalinity (as $CaCO_3$), Total Nitrogen, Total Phosphorus, Bicarbonate, Carbonate, Nitrate, Sulfate, Aluminium, Arsenic, Barium, Boron, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Sodium, Zinc	GR1
Condition 26	Compliance	Annual Audit Compliance Report
Condition 27	Complaints summary	None specified

Note 1: Forms are in Schedule 2

31. The Licence Holder must ensure that the Annual Environmental Report required by condition 28 also contains:

(a) an assessment of the information contained within the report against previous monitoring results and Licence limits; and

(b) a list of any original monitoring reports submitted to the Licence Holder from third parties for the Annual Period and make these reports available on request.

32. The Licence Holder must submit the information in Table to the CEO according to the specifications in Table 14.

Table 14: Non-annual reporting requirements

Condition or table (if relevant)	**Parameter**	**Reporting period**	**Reporting date (after end of the reporting period)**	**Format or form1**
Table 7	Total Suspended Solids limit exceedances	Quarterly	28 calendar days	ET1

Note 1: Forms are in Schedule 2

Notification

33. The Licence Holder must ensure that the parameters listed in Table 15 are notified to the CEO in accordance with the notification requirements of Table 15.

Table 15: Notification requirements

Condition or table	Parameter	Notification requirement[1]	Format or form[2]
Table 2, 4, 7 and 9	Breach of any limit specified in the Licence (exempt parameter of Total Suspended Solids from Table 7)	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
Table 6	Contingency dewatering discharge	Within 24 hours of activation of a contingency dewatering discharge activity	CD1
Table 6	Contingency dewatering discharge	Within 7 days of cessation of a contingency dewatering discharge activity	CD1

Note 1: Notification requirements in the Licence must not negate the requirement to comply with s72 of the EP Act.
Note 2: Forms are in Schedule 2

Definitions

In this licence, the terms in Table 16 have the meanings defined.

Table 16: Definitions

Term	Definition
ACN	Australian Company Number
Act	means the Environmental Protection Act 1986.
Annual Audit Compliance Report (AACR)	means a report in a format approved by the CEO as presented by the Licence Holder or as specified by the CEO from time to time and published on the Department's website. (relevant guidelines and templates may be available on the Department's website).
Annual Period	means a 12 month period commencing from 1 January until 31 December in that year.
AS/NZS 2031	means the Australian Standard AS/NZS 2031 Selection of containers and preservation of water samples for microbiological analysis.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples.
AS/NZS 5667.4	means the Australian Standard AS/NZS 5667.4 Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made.
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 Water Quality – Sampling – Guidance on sampling of rivers and streams.
AS/NZS 5667.9	means the Australian Standard AS/NZS 5667.9 Water Quality – Sampling – Guidance on sampling from marine waters.
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 Water Quality – Sampling – Guidance on sampling of waste waters.
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 Water Quality – Sampling – Guidance on sampling of groundwaters.
averaging period	means the time over which a limit is measured or a monitoring result is obtained.
books	has the same meaning given to that term under the EP Act.

Term	Definition
bund	means an embankment or wall which may form part of or all of the perimeter of secondary containment infrastructure.
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department Administering the Environmental Protection Act 1986 Locked Bag 10 JOONDALUP DC WA 6919 or: info@dwer.wa.gov.au
contingency discharge	Dewatering that occurs when reuse, in-pit storage and temporary storage are at capacity.
controlled waste	has the definition in Environmental Protection (Controlled Waste) Regulations 2004.
Department	means the department established under section 35 of the Public Sector Management Act 1994 (WA) and designated as responsible for the administration of Division 3 Part V 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.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Irrigation Area	means the wastewater irrigation areas on the premises on which treated wastewater is discharged to land (as depicted in Schedule 1).
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
mg/L	means milligrams per litre
mL	means millilitre

Term	Definition
m(AHD)	means metres in Australian Height Datum
monthly period	means a one-month period commencing from day 2of a month until day 1 of the immediately following month.
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.
Plant and equipment	means equipment, infrastructure, drainage systems and monitoring equipment associated with the authorised activities, but does not include items that have been decommissioned but are still on the premises.
Premises	refers to 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 licence.
prescribed premises	has the same meaning given to that term under the EP Act.
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year.
Schedule 1	means Schedule 1 of this Licence unless otherwise stated.
Schedule 2	means Schedule 2 of this Licence unless otherwise stated.
spot sample’	means a discrete sample representative at the time and place at which the sample is taken.
SWL or standing water level	means the water level of any surface water or in any piezometer measured prior to sampling and expressed in metres AHD.
STP dry	means standard temperature and pressure (0^{o}Celsius and 101.325 kilopascals respectively), dry.
µS/cm	means microseimens per centimetre.
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map - The Premises is shown in the map below (in Figure 1).

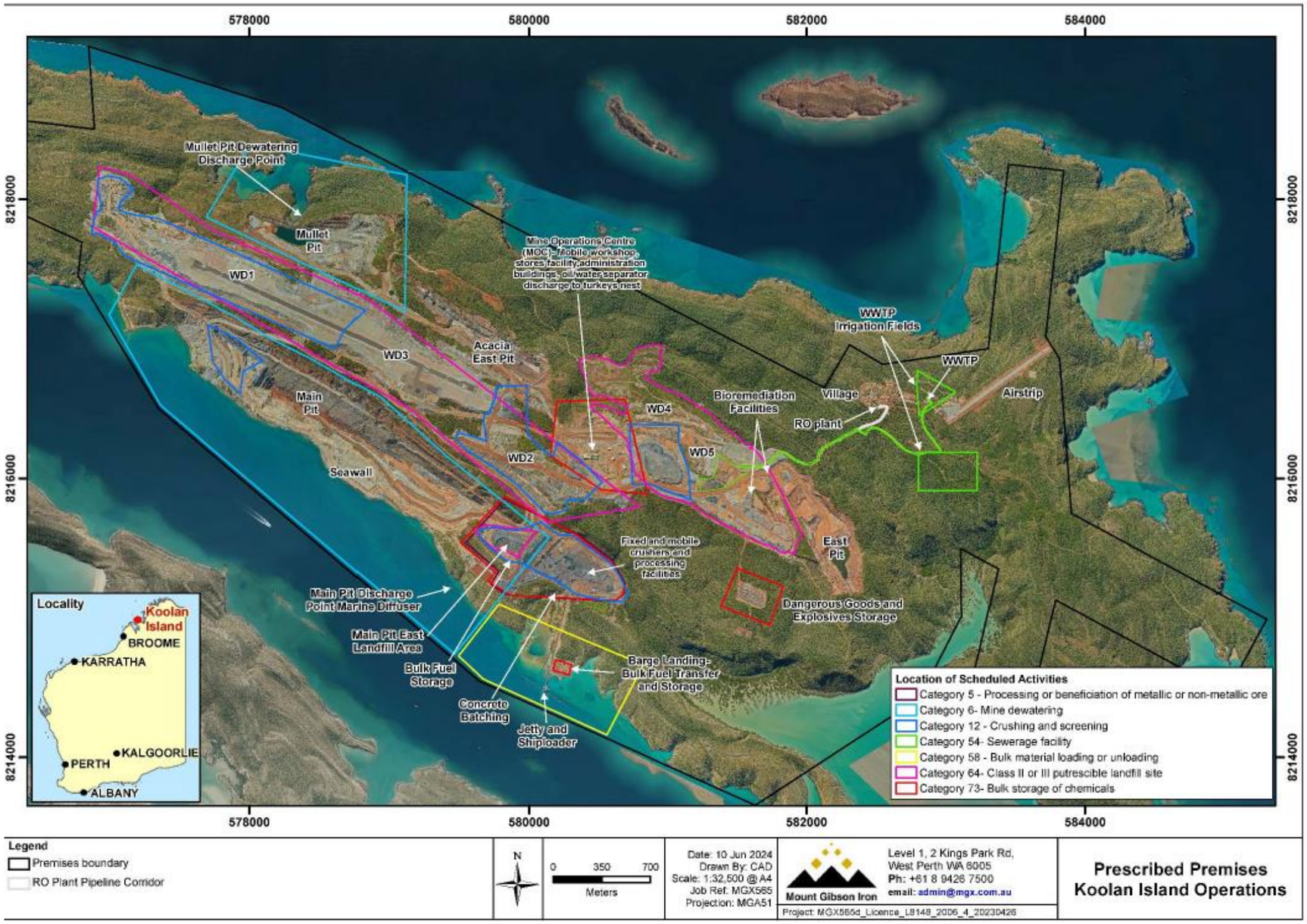


Figure 1: Premises and infrastructure map. The outer black line depicts the Premises boundary.

Map of emission points

The locations of the emission points defined in Table 8 and 9 are shown below (in Figure 2).

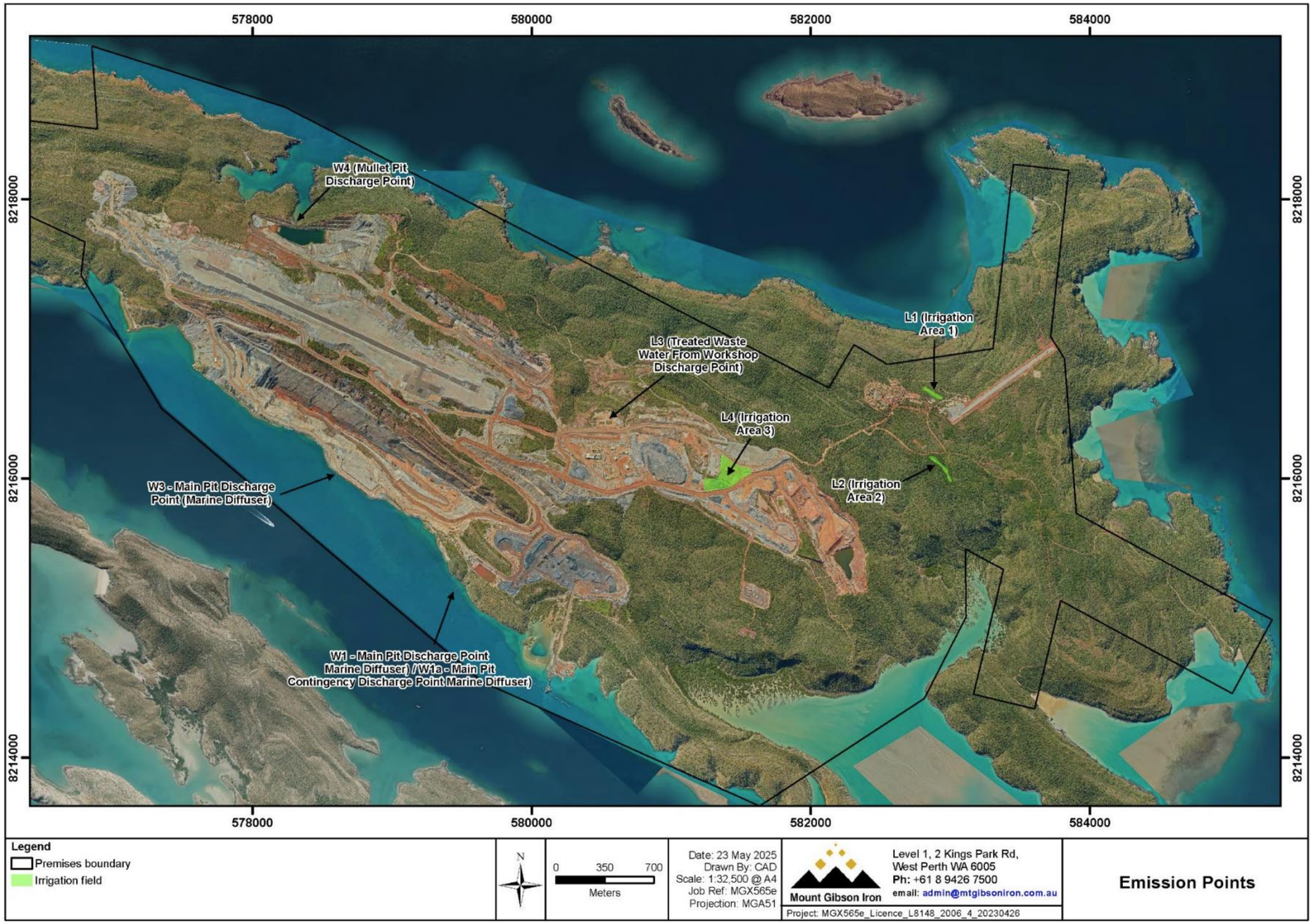


Figure 2: Emission point locations

Map of monitoring locations

The locations of the monitoring points defined in Table 10, Table 11 and Table 12 are shown below (Figure).

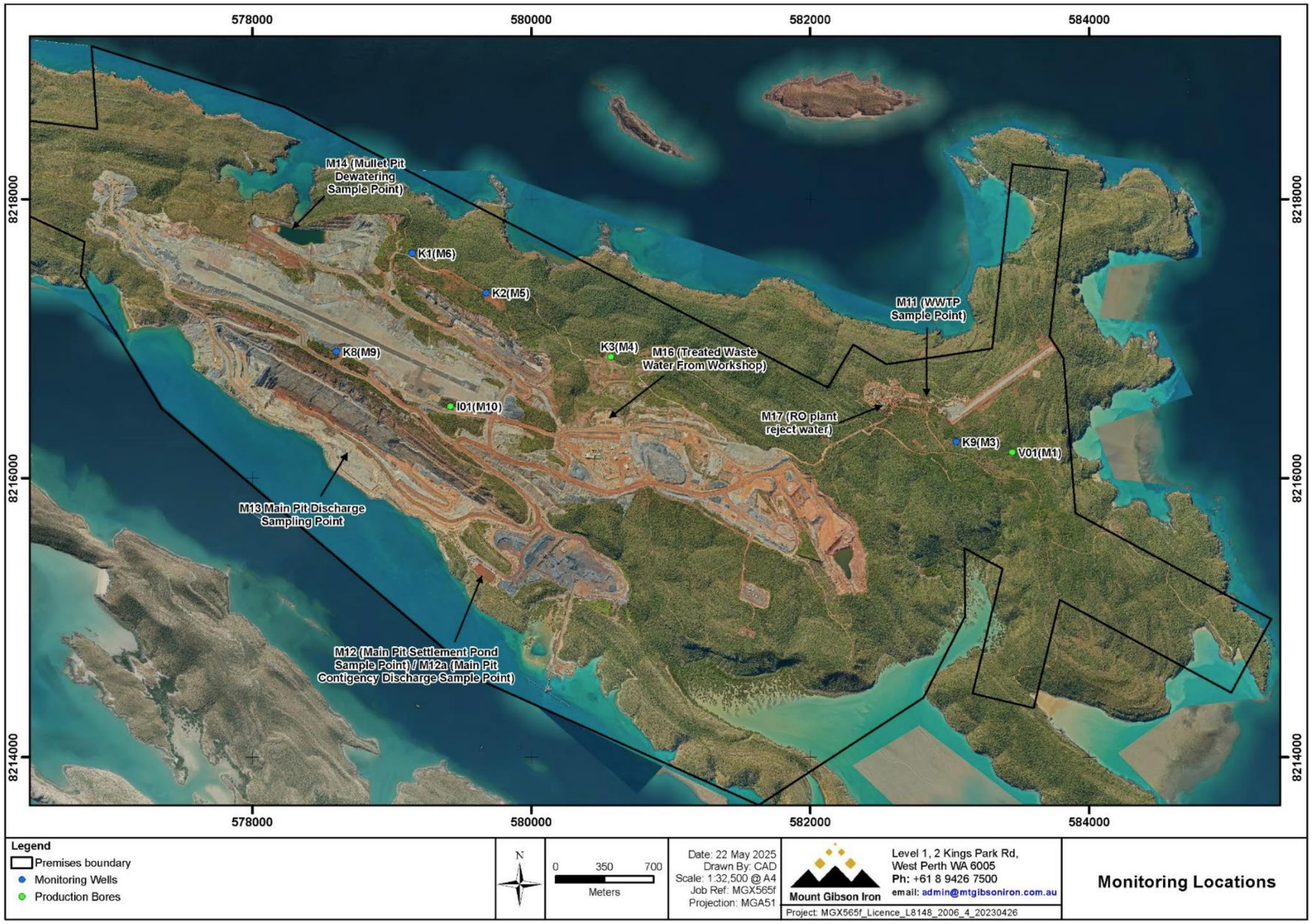


Figure 3: Monitoring points locations.

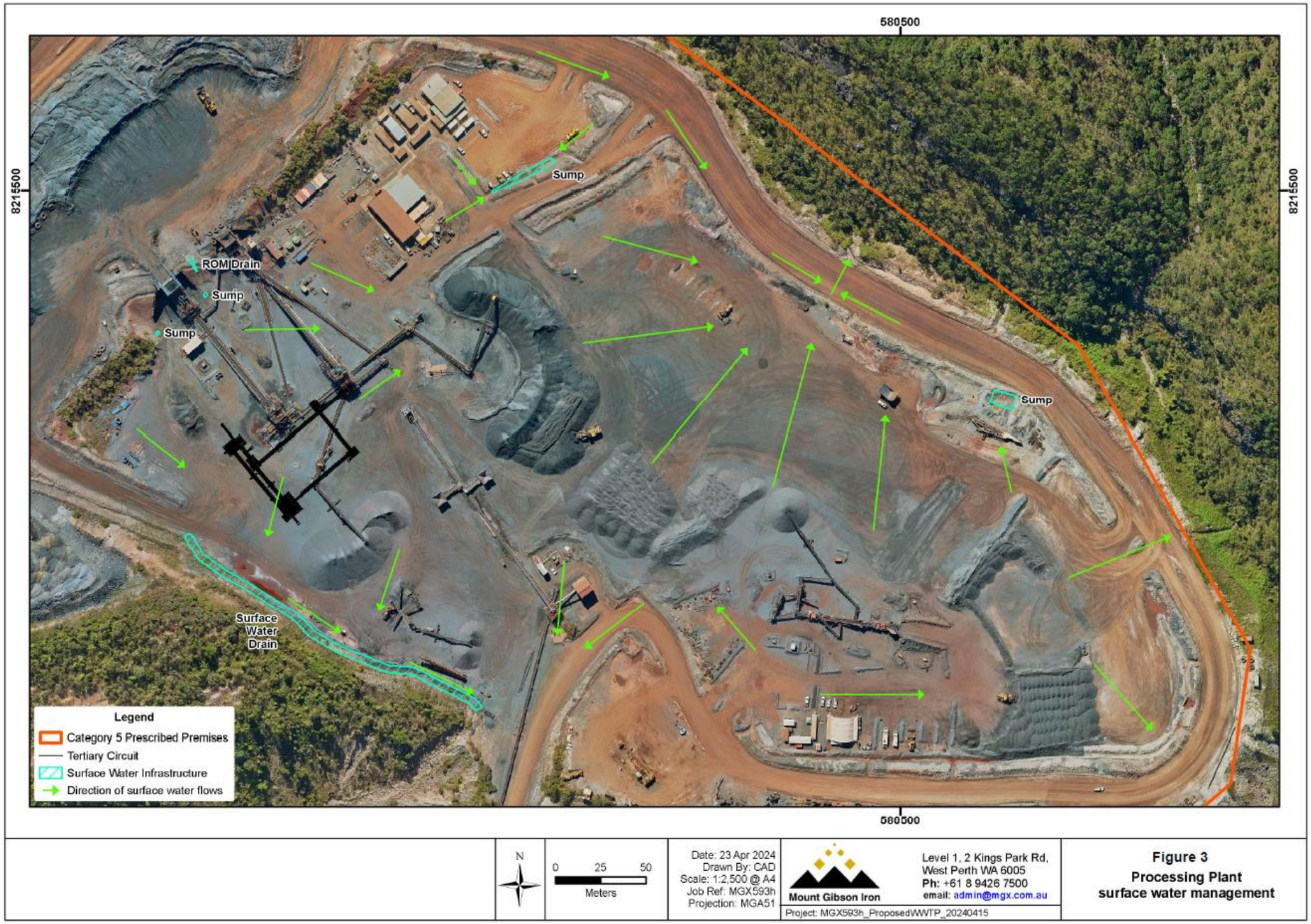


Figure 4: Location and design of tertiary crushing circuit and stormwater infrastructure

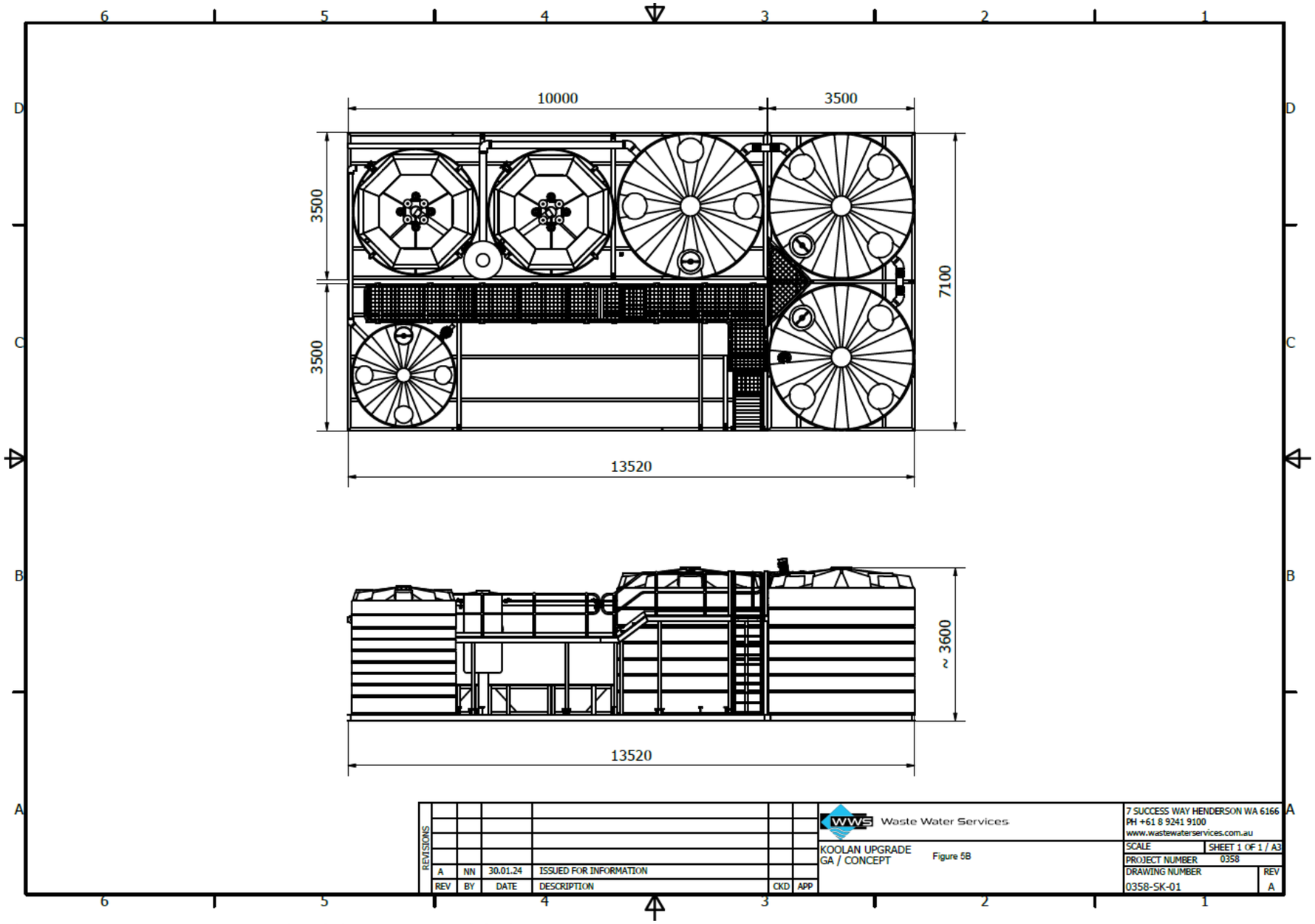


Figure 5: Wastewater Treatment plant infrastructure and design.

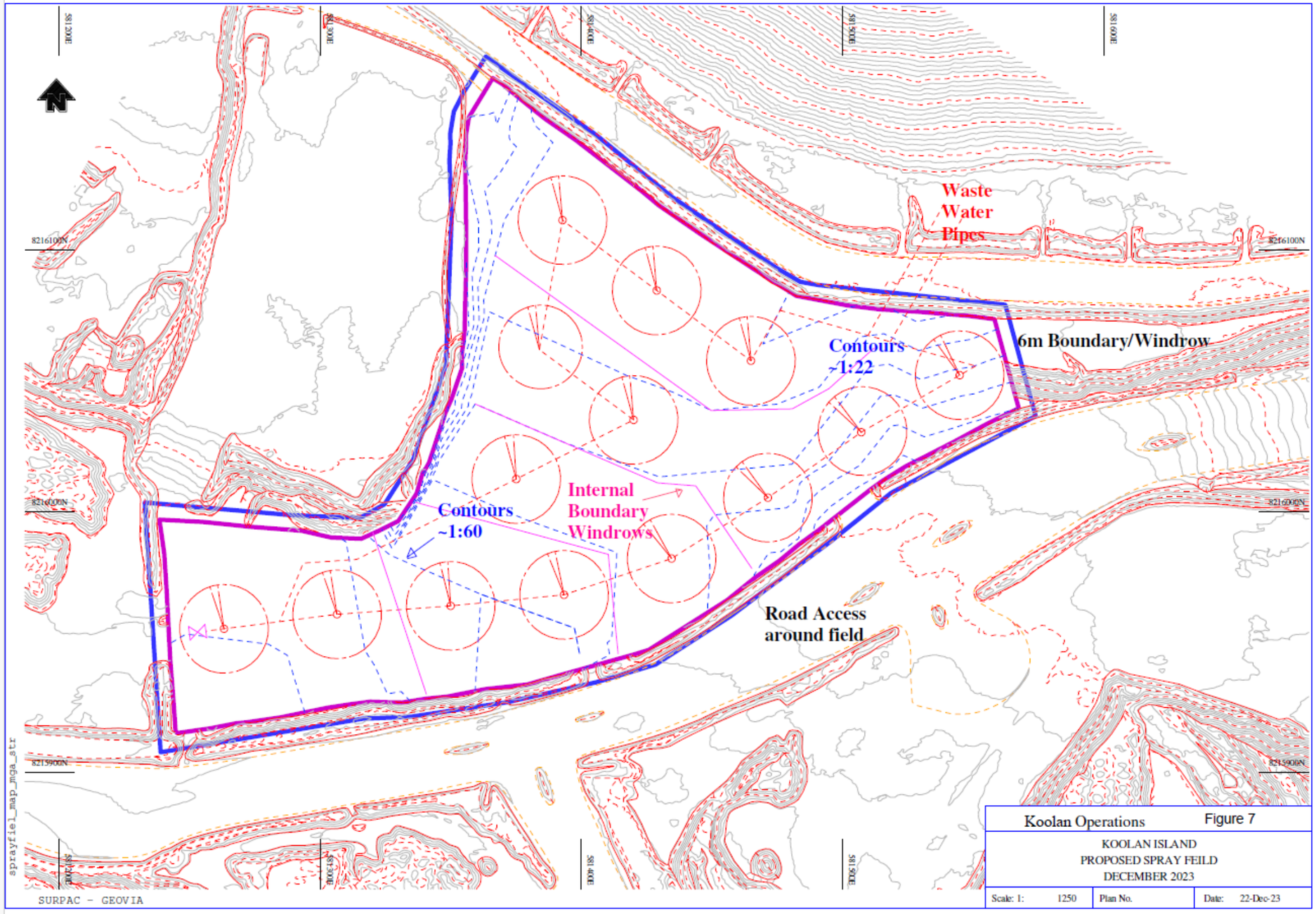


Figure 6: Irrigation field L4 design.

Schedule 2: Reporting & notification forms

Licence: L8148/2006/4 Licence Holder: Koolan Iron Ore Pty Ltd
Form: WR1 Period:
Name: Monitoring of point source emissions to surface water

Form WR1: Monitoring of point source emissions to surface water							
Emission point	**Parameter**	**Limit**	**Result[1]**	**Result[1]**	**Averaging period**	**Method**	**Sample date & times**
M12	Volumetric flow rate	-	m^3/day	m^3/month	Spot sample		
M12a	Volumetric flow rate	-	m^3/day	m^3/month	Spot sample		
M13	Volumetric flow rate	-	m^3/day	m^3/month	Spot sample		
M14	Volumetric flow rate	-	m^3/day	m^3/month	Spot sample		
M15	Volumetric flow rate	-	m^3/day	m^3/month	Spot sample		
M12	Total Suspended Solids	20 mg/L	mg/L		Spot sample		
M12a	Total Suspended Solids	-	mg/L		Spot sample		
M13	Total Suspended Solids	20 mg/L	mg/L		Spot sample		
M14	Total Suspended Solids	20 mg/L	mg/L		Spot sample		
M15	Total Suspended Solids	20 mg/L	mg/L		Spot sample		
M12	Total Recoverable Hydrocarbons	15 mg/L	mg/L		Spot sample		
M13	Total Recoverable Hydrocarbons	15 mg/L	mg/L		Spot sample		
M14	Total Recoverable Hydrocarbons	15 mg/L	mg/L		Spot sample		
M15	Total Recoverable Hydrocarbons	15 mg/L	mg/L		Spot sample		

Note 1: All units are referenced to STP dry

Signed on behalf of Koolan Iron Ore Pty Ltd: …….. Date: …….

Licence: L8148/2006/4 Licence Holder: Koolan Iron Ore Pty Ltd
Form: GR1 Period:
Name: Monitoring of ambient groundwater quality

Form GR1: Monitoring of point source emissions to groundwater					
Emission point	**Parameter**	**Result[1]**	**Averaging period**	**Method**	**Sample date & times**
M1 – M10	Standing water level	m(AHD)	Spot sample		
M1 – M10	pH		Spot sample		
M1 – M10	Electrical conductivity	µS/cm	Spot sample		
M1 – M10	Total Recoverable Hydrocarbons	mg/L	Spot sample		
M1 – M10	Hardness (as equivalent $CaCO_3$)	mg/L	Spot sample		
M1 – M10	Total Alkalinity (as $CaCO_3$)	mg/L	Spot sample		
M1 – M10	Total Nitrogen	mg/L	Spot sample		
M1 – M10	Total Phosphorus	mg/L	Spot sample		
M1 – M10	Bicarbonate	mg/L	Spot sample		
M1 – M10	Carbonate	mg/L	Spot sample		
M1 – M10	Nitrate	mg/L	Spot sample		
M1 – M10	Sulfate	mg/L	Spot sample		
M1 – M10	Aluminium	mg/L	Spot sample		
M1 – M10	Arsenic	mg/L	Spot sample		
M1 – M10	Barium	mg/L	Spot sample		
M1 – M10	Boron	mg/L	Spot sample		
M1 – M10	Cadmium	mg/L	Spot sample		
M1 – M10	Calcium	mg/L	Spot sample		
M1 – M10	Chromium	mg/L	Spot sample		

Form GR1: Monitoring of point source emissions to groundwater					
Emission point	**Parameter**	**Result[1]**	**Averaging period**	**Method**	**Sample date & times**
M1 – M10	Copper	mg/L	Spot sample		
M1 – M10	Iron	mg/L	Spot sample		
M1 – M10	Lead	mg/L	Spot sample		
M1 – M10	Magnesium	mg/L	Spot sample		
M1 – M10	Manganese	mg/L	Spot sample		
M1 – M10	Mercury	mg/L	Spot sample		
M1 – M10	Molybdenum	mg/L	Spot sample		
M1 – M10	Nickel	mg/L	Spot sample		
M1 – M10	Potassium	mg/L	Spot sample		
M1 – M10	Selenium	mg/L	Spot sample		
M1 – M10	Sodium	mg/L	Spot sample		
M1 – M10	Zinc	mg/L	Spot sample		

Note 1: All units are referenced to STP dry

Signed on behalf of Koolan Iron Ore Pty Ltd: …….. Date: …….

Licence: L8148/2006/4
Form: LR1
Name: Monitoring of emissions to land

Licence Holder: Koolan Iron Ore Pty Ltd
Period:

Form LR1: Monitoring of emissions to land						
Emission point	**Parameter**	**Limit**	**Result[1]**	**Averaging period**	**Method**	**Sample date & times**
M11	Volumetric flow rate	-	m^3/month	Spot sample		
M11	Biochemical Oxygen Demand	-	mg/L	Spot sample		
M11	Total Dissolved Solids	-	mg/L	Spot sample		
M11	pH	-		Spot sample		
M11	Total Nitrogen	-	mg/L	Spot sample		
M11	Total Phosphorus	-	mg/L	Spot sample		
M11	*E Coli*	-		Spot sample		
M16	Total Recoverable Hydrocarbons	15 mg/L	mg/L	Spot sample		

Note 1: All units are referenced to STP dry

Signed on behalf of Koolan Iron Ore Pty Ltd: …….. Date: …….

Licence: L8148/2006/4 Licence Holder: Koolan Iron Ore Pty Ltd
Form: ET1 Period:
Name: Total Suspended Solids limit exceedances

Form ET1: Total Suspended Solids limit exceedances
Please provide an analysis of the limit exceedances for the month, including but not limited to: (a) the emission point (b) the root cause analysis for the exceedances; (c) any common or contributory factors; (d) a description of remedial measures taken or planned to be taken, including those taken to prevent recurrence of the exceedances; (e) complaints received that may have been caused by this exceedance; and (f) for those exceedances that may have caused complaints, meteorological details: rainfall, temperature, wind speed and wind direction, humidity.

Signed on behalf of Koolan Iron Ore Pty Ltd: …….. Date: …….

Licence: L8148/2006/4
Form: CD1
Name: Contingency Discharge Form

Licence Holder: Koolan Iron Ore Pty Ltd
Date of discharge:

Form CD1: Contingency Discharge					
Emission point	**Discharge Commencement Date & Time**	**Discharge Cessation Date & Time**	**Total Volume Discharged**	**Volumetric flow rate**	**Total Suspended Solids levels (average of daily analysis)**
			m^3	m^3/day	mg/L
			m^3	m^3/day	mg/L
Please provide details of the contingency discharge, including but not limited to: (a) Copies of daily results of Total Suspended Solids monitoring during discharge; (b) Other monitoring data as relevant (e.g. Visual / photographic monitoring) (c) Reason discharge required (including time-stamped, photographic evidence of maximum design capacity for dewater storage having been reached); and (d) Recorded rainfall (mm) onsite during discharge period.					

Signed on behalf of Koolan Iron Ore Pty Ltd: …….. Date: …….

Licence: L8148/2006/4 Licence Holder: Koolan Iron Ore Pty Ltd
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	

Schedule 3: Gravimetric Determination of Total Suspended Solids

SGS	Minerals Geochemistry Global	Revision Doc Type Document Code Document Number Service Issued Date Review Date Approved by	0.0 Method G_PHY13V Testing 17/May/2019 17/May/2021 Russ Calow Stuart Fryer
Minerals	Gravimetric Determination of Total Suspended Solids		

Method Origin: This method has been developed at SGS Minerals.

File / Intranet Ref: https://sgs.sharepoint.com/sites/global-min-techgov/Tech%20Document%20Library/Geochem1/Forms/AllItems.aspx?viewpath=%2Fsites%2Fglobal-min-techgov%2FTech%20Document%20Library%2FGeochem1%2FForms%2FAllItems.aspx

Date	Revision	Description	Reviewed By	Authorized
17/May/2019	0.0	First Edition as Global Method	L. Marjanovic, E. Matthews	M. Caverly

Page 1 of 8

Confidential - Uncontrolled Document Whenever Printed

SGS	Minerals Geochemistry Global	Revision 0.0 Doc Type Method Document Code G_PHY13V Document Number Service Testing Issued Date 17/May/2019 Review Date 17/May/2021 Approved by Russ Calow Stuart Fryer
Minerals	Gravimetric Determination of Total Suspended Solids	

1. SCOPE

Analyte	TSS (Total Suspended Solids)
Units	mg/L
Lower Report Limit	1
Upper Report Limit	10000
Limiting Repeatability (SLIM)	10%
Analysis Detection Limit (SLIM)	1
Statistical Detection Limit (SLIM)	2.5
Sample size	500mL to 1000mL
Matrix	Water and process solutions
Accreditation status	Refer to laboratory accreditation scope
Performance Study (PT/RR)	Internal RR, CALA

Note: * units for reporting are based on default settings and may be modified according to customer needs based on the information in section 12.

NOTE:
For process solutions less than 500mL can be used as long as the weight of the residue is more than 0.5mg.

2. SUMMARY

Total suspended solids (TSS) is the quantity of material suspended in a known volume of water that is trappable in a filter.

In this gravimetric method, it is determined by filtering the water sample, drying the residue, and reporting the weight of the dried residue as TSS.

3. RESPONSIBILITIES

The Laboratory Manager is responsible to ensure that all resources are available to meet the requirements of GQP-MIN-21 and OIMS. All Minerals Technicians are responsible for following the procedure as written.

4. OPERATIONAL INTEGRITY

This procedure raises several potential safety and health hazards. As part of the work order review and before any testing or preparation activities are performed, a lab specific risk assessment must be included in the work instructions. These documents must consider all relevant local laws, client / site safety rules and programs. They must comply with SGS OIMS Standards and the SGS Rules for Life. The following hazards are referenced in the Global Risk Assessment and must be reviewed by operational managers before job / work order commences. Supervisors must assess the risks before commencing any testing procedures and inform their line managers of any deviations or new hazards that have been identified.

All staff must have appropriate PPE (personal protective equipment) in accordance with OIMS Standard "L2- 313 PPE", Local / Site Regulations and SGS Rules for Life / SOP's. This must include Lab Coats (preferably flame retardant), safety shoes, safety glasses, and where applicable respiratory protection.

4.1 Hazards

- Electrical shock – equipment
- Material disposal – waste regulations (e.g. all hazardous by-products)
- Slips, trips and falls – poor housekeeping
- Thermal Burns - hot, molten equipment and materials

4.2 Safety Requirements:

- Loose clothing, long hair, dangling accessories, jewelry or other similar items that are likely to be hazardous to the health or safety of an employee in a work place shall not be worn unless they are so tied, covered or otherwise secured as to prevent the hazard. Jewelry must not be worn when working around machinery that may cause entanglement.
- Perform and record any maintenance checks prior to starting equipment. The Lockout/Tagout procedure must be followed prior to any maintenance of the electrical equipment, as per HSE.
- Be aware of and take any additional precautions and containment required due to sample type (e.g. asbestos, NORM). If the work area is temporarily designated for work requiring containment, ensure containment designation is clearly posted. Specific training on the hazards and handling of silica, asbestos, NORM and arsenic must be completed prior to working with samples identified as such. Consult your Supervisor for details and training materials.
- Ensure all ventilation/fume hoods are fully operational. Fume hood draw is critical for safety, and the draw must be kept within specified values to ensure no fumes escape. Extraction systems all indicate their function differently (lights, measurement, readout). Ensure you are aware of the method for your type that indicates it is functioning properly and always check before beginning work. Generally, sashes should be kept closed while processing a sample requiring a fume hood. If fumes escape the fume hood at any time, shut the sash, step away and allow the samples to react. If fumes still escape, stop work and report to the area Supervisor. The fume hood draw is also critical to maintaining consistent analytical recovery.
- Glassware must be inspected prior to use for chipping and cracking and discarded if compromised. Cut resistant gloves are required while cleaning or washing lab glassware, handling glass pipettes, manipulating connections between lab glassware components or handling damaged lab glassware, unless a risk-assessment has been performed to determine this is unnecessary for that step.

- Disposal of solution/solid material will only be done in a designated waste container specific for the matrix (acidic, basic, cyanide, organic, NORM, etc.). Care must be taken not to mix incompatible material.
- Wear approved PPE for the specific work area:
  - **Weighing** - must wear long pants and work shirt or coveralls or lab coat; nitrile gloves when handling samples; safety glasses, protective footwear. Respirators with appropriate cartridges must be worn when working with hazardous substances. Employees are required to complete a training program and fit test prior to working with a hazardous substance that requires a respirator. Cut resistant gloves must be worn when using safety blades to open boxes or packages.

The MSDS shall have been read and understood prior to handling any reagent.

Always follow the SGS Rules for LIFE

5. DEFINITIONS

Terminology	Definition
DI water	Deionized water, but may also refer to distilled or reverse osmosis water.
SLIM	SGS Laboratory Information Management System
Sub-sample	A sample drawn from a larger sample in order to produce a representative sample aliquot for preparation and measurement.
CAR	Corrective Action Report
CRM	Certified Reference Material. A reference material, accompanied by documentation issued by an authoritative body and providing one or more specified property value with uncertainty and traceability, using valid procedures.
IHRM	In-house Reference Material. A material, sufficiently homogeneous and stable with reference to specified properties, which has been established to be fit for its intended use in measurement, or in examination of nominal properties.

6. INTERFERENCES, LIMITATIONS AND NOTES

Suspended solids are the portion of total solids in the sample retained by a filter. The chemical and physical nature of the material in suspension, the pore size of the filter, the area and thickness of the filter mat, and the amount and physical state of the materials deposited on the filter are the principle factors affecting separation of non-filterable from filterable residue.

Note: Some clays and colloids will pass through a 2-µm filter

Residues dried at 105°C may retain not only water of crystallization but also some mechanically occluded water. Loss of CO_2 will result in conversion of bicarbonate to carbonate. Loss of organic matter by volatilization usually is very slight at this temperature. Because removal of occluded water is marginal at 105°C, attainment of constant weight is very slow.

7. EQUIPMENT AND MATERIALS

7.1 Equipment

Refer to site equipment listing for equipment details

7.1.1 Analytical balance (4 decimal places)
7.1.2 Drying oven
7.1.3 Vacuum Aparatus

7.2 Materials

7.2.1 Dessicator
7.2.2 Glass fiber filter disks
7.2.3 Beakers, assorted
7.2.4 Filter funnels
7.2.5 Pipettes
7.2.6 Filtering apparatus
7.2.7 Graduated cylinder

8. REAGENTS

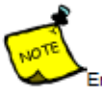
Reagent name	Traceability / Grade	Storage	Shelf Life
DI water	See water quality testing or certificate on label.	Ambient	Not applicable

9. SAMPLE COLLECTION, PRESERVATION AND HANDLING

Sample Size	>500 mL
Sample Container Requirements	Suitable container, leak proof
Pre-Treatment (sub sampling)	Samples should be well mixed to ensure a homogenous aliquot is taken
Sample Storage Conditions	Refrigerate at 5°C ± 3°C.
Holding Time	Max 7 days
Labeling	SLIM work order #, sample #

10. PROCEDURE

10.1 Instrument set up



Ensure that daily verification of the analytical balance and laboratory oven has been performed and duly recorded in the associated logbooks. Refer to site work instructions.

10.1.1 Turn on laboratory oven and set to 105ºC ± 5ºC at least one hour before use to allow temperature to stabilize.

10.2 Analysis

10.2.1 Rinse glass filter disk (wrinkle side up) with de-ionized water. Dry at 105ºC ± 5ºC, cool and weigh to a constant weight (B), not differing more than 0.0005g of the previous weight). Store in desiccator prior to use.

10.2.2 Assemble the filter apparatus.

10.2.3 Using forceps, place the pre-weighed filter on the filter apparatus.

10.2.4 Shake each sample vigorously, prior to pouring.

10.2.5 Use a class A graduated cylinder to measure 500mL (to maximum 1000mL) sample into the filter funnel (volume of sample may depend on sample matrix/availability; see scope)

10.2.6 Record the volume used.

10.2.7 With the vacuum on, rinse the filter funnel wall with deionized water. Allow complete drainage between each washing.

10.2.8 Remove all traces of water by continuing to apply vacuum after the water has passed through.

10.2.9 Remove the funnel then turn off the vacuum. Using forceps carefully remove the filter from the filter support.

10.2.10 Dry filter disk containing residue at 105ºC ± 5ºC for a minimum of 60 minutes, remove from the oven, and cool in the dessicator for 60 minutes.

10.2.11 Repeat the oven drying and desiccating cycle until a constant weight (weight loss < 0.0005g) is obtained. Record the constant weight (A).

10.3 Maintenance

For daily, routine, preventive maintenance and trouble-shooting of equipment used, refer to site work instruction.

11. CALCULATIONS

$$\text{TSS (mg/L)} = \frac{(A - B) \times 1000000}{\text{Sample volume (mL)}}$$

Where A = Weight of filter + dried residue (g) (10.2.11)
B = Weight of filter (g) (10.2.1)

12. REPORTING

In SLIM the data is reviewed, validated and reported according to GQP-MIN-21.

Refer to site work instructions for additional requirements for approving and reporting data.

FREQUENTLY REQUESTED EQUIVALENTS FOR REPORTING

%	mg/L	µg/L	ppm	ppb
1	10,000	10,000,000	10,000	10,000,000
0.1	1000	1,000,000	1000	1,000,000
0.01	100	100,000	100	100,000
0.001	10	10,000	10	10,000
0.0001	1	1000	1	1000

13. QUALITY CONTROL

13.1 Quality Control Specifics

Material	Source of Material	Method Protocols/Frequency
Method Blank	Reagents taken through the decomposition stages	Refer to GQP-MIN-21 for the frequency of insertion of method blanks.
Solution Replicate	Customer sample taken at the weighing/volume measurement stage	Refer to GQP-MIN-21 for the frequency of insertion of pulp replicates
Reference Materials - Suspended Solids Check Solution	Suitable certified or in-house reference material at suitable concentration range of customer samples	Refer to GQP-MIN-21 for the frequency of insertion of reference materials.

13.2 Quality Control Objectives

Material	Data Acceptance Criteria	Actions
Method Blank	The tolerance is calculated by SLIM (Refer to GQP-MIN-21)	If outside these limits then refer to GQP-MIN-21
Solution Replicate	The tolerance is calculated by SLIM (Refer to GQP-MIN-21)	If outside these limits then refer to GQP-MIN-21
Reference Materials - Suspended Solids Check Solution	The tolerance is calculated by SLIM (Refer to GQP-MIN-21)	If outside these limits then refer to GQP-MIN-21

The Supervisor or designated analyst must be informed of quality control parameter failure. Refer to GQP-MIN-21 for Laboratory QC protocols. When required, a CAR will be filed for data failure or inability to repeat the analysis and provide the customer with quality data.

13.3 Validation

The validation process tests the method performance and determines its fitness for purpose. This method is fit for purpose and the validation data and calculations are located in the validation and measurement uncertainty spreadsheet GQT-MIN-05. Refer to GQP-MIN-15 for Method Validation and Measurement Uncertainty procedure.

14. REFERENCES

14.1 Associated Documents

GQP-MIN-21: Laboratory Quality Control
GQP-MIN-15: Method validation and Measurement Uncertainty
GQT-MIN-05: Method Validation and Measurement Uncertainty Template

OI Management System Procedures:
https://sgs.sharepoint.com/intranet/functions/oi/Pages/20180214-OIMS.aspx
OIMS Training Manual(s):
https://sgs.sharepoint.com/intranet/functions/oi/Pages/20180320-TrainingMaterials.aspx
SGS Rules for Life:
https://sgs.sharepoint.com/intranet/functions/oi/Pages/20180330-RulesforLife.aspx

Refer to Addendum for site specific documents which may include quality procedures, work instructions, quality forms, logs and spreadsheets