



Licence number	L7967/2003/6
Licence holder	Savannah Nickel Mines Pty Ltd
ACN (if applicable)	103 729 282
Registered business address	Level 9, 533 Hay Street, Perth WA 6000
DWER file number	DER2013/001406
Duration	02/08/2014 to 01/08/2032
Date of issue	31/07/2014
Premises details	Savannah Project Mining tenements M80/179, M80/180 and M80/181 WARMUN WA 6740

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	950,000 tonnes per annual period
Category 54: sewage facility	100 cubic metres per day
Category 64: Class II putrescible landfill site	10,000 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 24 June 2020, by:

Lauren Fox

A/MANAGER – RESOUCÉ INDUSTRIES

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

Licence amendment history

Introduction

Savannah Nickel Mines Pty Ltd (Licence Holder) submitted a licence amendment application on 13 November 2019 in relation to Category 54 sewage facility and Category 64 Class II putrescible landfill site. The application is to:

- replace the existing wastewater treatment plant;
- extend the existing landfill site; and
- allow construction of additional landfill cells.

The Licence Holder is not proposing to increase the production or design capacity or throughput of the WWTP or landfill on the existing licence.

The CEO has:

- incorporated the amendment notices 1 and 2 issued in 2018, and as listed below in the instrument log table;
- updated that style and appearance of the Licence;
- deleted the redundant AACR form set out previously in schedule 2 of the licence and advise the Licence Holder to obtain the form from the Department's website; and
- corrected clerical mistakes and unintentional errors.

The licences and works approvals issued for the Premises since 2011 are:

Instrument	Issued	Amendment
L7967/2003/4	02/02/2012	Licence amendment to allow emergency response training onsite.
L7967/2003/5	02/08/2012	Licence reissued
L7967/2003/5	17/10/2013	Licence amendment to allow new putrescible landfill
L7967/2003/6	01/08/2014	Licence reissue and conversion to new licence format
L7967/2003/6	09/10/2014	Licence amendment to increase category 5 production and design capacity.
L7967/2003/6	18/07/2016	Licence amendment to allow for tyre burial within waste rock dump and to reduce design capacities of premises while during Care and Maintenance.
L7967/2003/6	24/04/2018	Licence Amendment Notice (#1) to change annual period to 1 July – 30 June.
L7967/2003/6	21/12/2018	Licence Amendment Notice (#2) to reinstate the approved premises production and design capacities and include amended conditions for the TSF as recommended during the TSF lift assessment (Works Approval W5208/2012/1), in anticipation of recommencement of production. Removal of category 6 for mine dewatering. Inclusion of an improvement condition to address the elevated Total Nitrogen and Total Phosphorus loading rates at the WWTP irrigation area. A typographical error has also been corrected from Amendment

		Notice #1, finalised 24 April 2018, where the annual period date has been written as 1 July – 31 June, instead of 1 July - 30 June in the Definitions section.
L7967/2003/6	24 June 2020	Amalgamated Licence & amendment to replace the existing WWTP with activated sludge bioreactor, increase in irrigation area and additional landfill cells.

Licence Conditions

1. General

1.1 Interpretation

1.1.1 In the Licence, definitions from the Environmental Protection Act 1986 apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears;

‘Act’ means the *Environmental Protection Act 1986*;

‘Annual period’ means the inclusive period from 1 July – 30 June in the same year;

‘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 5667.6’ means the Australian Standard AS/NZS 5667.6 *Water Quality – Sampling – Guidance on sampling of rivers and streams*;

‘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*;

‘AS/NZ 2031’ means the Australian Standard AS/NZS 2031: 2001 *Selection of containers and preservation of water samples for microbiological analysis*;

‘ANZECC’ Australian and New Zealand Environment Conservation Council

‘Averaging period’ means the time over which a limit is measured or a monitoring result is obtained;

‘CEO’ means Chief Executive Officer of Department of Water and Environmental Regulation;

‘CEO’ for the purposes of notification means:

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6027
Telephone: (08) 6367 7000

Facsimile: (08) 6367 7001
Email: info@dwer.wa.gov.au;

'cfu/100mL' means colony forming units per 100 millilitres;

'Clean fill' has the meaning defined in Landfill Definitions;

'Contaminated solid waste' has the meaning defined in Landfill Definitions;

'Controlled waste' has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*;

'Delegated Officer' an Officer under section 20 of the EP Act

'Environmental Commissioning Report' means a report on any commissioning activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, or equipment and infrastructure to establish or test a steady state operation and confirm design specifications.

'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 Definitions;

'Inert waste type 2' has the meaning defined in Landfill Definitions;

'Landfill' means a site used for disposal of solid material (i.e. is spadeable) by burial in the ground that is licensed as a landfill under the Environmental Protection Act 1986 and as defined in the document *Landfill Waste Classification and Waste Definitions' 1996* (As amended December 2009);

'Landfill Definitions' refers to the document *Landfill Waste Classification and Waste Definitions 1996* - as amended from time to time and published on Department's website;

'Licence' refers to this document, which evidences the grant of a Licence by the CEO under s.57 of the EP Act, subject to the Conditions;

'Licence Holder' refers to the occupier of the premises being the person to whom this Licence has been granted, as specified at the front of this Licence;

'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;

'NWQMS 1997' means the most recent version and relevant parts of the "National Water Quality Management Strategy, Australian Guidelines for Sewerage Systems - Effluent Management" as published by the Agriculture and Resource Management Council of Australia and New Zealand and Australian and New Zealand Environment and Conservation Council, 1997;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

‘Putrescible’ has the meaning defined in Landfill Definitions;

‘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;

‘Schedule 1’ means Schedule 1 of this Licence unless otherwise stated;

‘Schedule 2’ means Schedule 2 of this Licence unless otherwise stated;

‘Special Waste Type 1’ has the meaning defined in Landfill Definitions;

‘Special Waste Type 2’ has the meaning defined in Landfill Definitions;

‘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 (Australian Height Datum);

‘TSF’ means Tailings Storage Facility; and

‘WSF’ means Water Storage Facility.

1.1.3 Any reference the Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 Premises operation

1.2.1 The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit in this section.

1.2.2 The Licence Holder shall ensure that where waste produced on the Premises are not taken off-site for lawful use or disposal, they are managed according to the requirements in Table 1.2.1.

Table 1.2.1: Management of Waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements ¹
Waste Water Treatment Plant	Sewage	Biological and physical treatment (activated sludge bioreactor)	Treatment of sewage waste shall be at or below the treatment capacity of 100 m ³ /day.

Table 1.2.1: Management of Waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements ¹
Landfill	Clean fill Inert Waste Type 1 Inert Waste Type 2 Putrescible waste Contaminated Solid Waste Special Waste Type 1 (Asbestos) Special Waste Type 2 (Biomedical and Clinical Waste)	Handling, storage prior to or disposal of waste by landfilling	<u>All waste types</u> No more than 10,000 tonnes per annual period of all waste types cumulatively shall be disposed of by landfilling. Disposal of waste (except tyres) by landfilling shall only take place within the Landfill area shown on the Premises map in Schedule 1. Place waste within a defined trench or within an area enclosed by earthen or other bunds. 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 shall not be less than 3 m. Must meet the acceptance criteria for a Class II landfill. <u>Special Waste Type 1 (Asbestos)</u> 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. No works shall be carried out on the landfill that could lead to a release of asbestos fibres. <u>Special Waste Type 2 (Biomedical and Clinical Waste)</u> 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. No works shall be carried out on the landfill that could lead to biomedical wastes being excavated or uncovered.
North and South Waste rock dumps	Inert Waste Type 2 (Tyres only)	Handling and disposal by landfilling	<u>Inert Waste Type 2 (Tyres)²</u> No more than 70 tonnes of tyres per annual period shall be disposed of by landfilling. Tyres shall only be landfilled within the North waste rock dump and South waste rock dump as shown on the Premises map in Schedule 1. The location of where tyres are buried will be surveyed and latitude and longitude recorded.

Table 1.2.1: Management of Waste			
Facility as depicted in Schedule 1	Waste type	Management Strategy	Requirements ¹
TSF1	Tailings	Containment in TSF or directed to paste plant	Disposal of tailings shall only take place within TSF1 as shown on the Premises map in Schedule 1.

Note 1: 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*.

Note 2: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

- 1.2.3 The Licence Holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.2.2 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.2.2 Cover requirements ¹			
Waste Type	Material	Depth	Timescales
Inert Waste Type 1	No cover required.		
Inert Waste Type 2	Tyres only ¹		
Inert Waste Type 2 (excluding tyres)	Inert Waste Type 1 or soil	150 mm	By the end of the working day in which the waste was deposited. Plastic waste with the potential to become windblown shall be covered as soon as practicable after deposit.
Special Waste Type 1		300 mm	As soon as practicable after deposit and prior to compaction.
Special Waste Type 2		300 mm	By the end of the working day in which the asbestos waste was deposited.
Putrescible Waste		300 mm	As soon as practicable after deposit and prior to compaction.
		300 mm	Weekly.

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

- 1.2.4 The Licence Holder shall ensure that tailings, decant water, dewater effluent and process water are only discharged into containment cells and/or a water storage facility with the relevant infrastructure requirements and at the locations specified in Table 1.2.3 and identified in Schedule 1.

Table 1.2.3: Containment infrastructure			
Containment point reference	Vessel or compound	Material	Requirements
TSF1	TSF1	Tailings	Maintain a minimum top of embankment freeboard of 300 mm Minimise the volume of water stored by preferentially pumping decant water to the Process Water Dam (PWD) for reuse in processing
	Paste Plant	Tailings	Tailings from Paste Plant to report to Underground operations.
WSF1	WSF1	Seepage water from TSF1	Maintain a minimum top of embankment freeboard of 500 mm Minimise the volume of water stored by preferentially pumping water to and storing water within WSF2 and WSF3

Table 1.2.3: Containment infrastructure			
Containment point reference	Vessel or compound	Material	Requirements
WSF2	WSF2	Bore field water	1.5 mm HDPE liner to achieve a permeability of $<10^{-9}$ m/s or equivalent. Maintain a minimum top of embankment freeboard of 300 mm in the process area run-off pond.
WSF3	WSF3	Bore field water	1.5 mm HDPE liner to achieve a permeability of $<10^{-9}$ m/s or equivalent. Maintain a minimum top of embankment freeboard of 300 mm.
P1	Process area run-off water pond	Process water and stormwater from process plant	1.5 mm HDPE liner to achieve a permeability of $<10^{-9}$ m/s or equivalent. Maintain a minimum top of embankment freeboard of 300 mm.

1.2.5 The Licence Holder shall manage the irrigation of treated wastewater such that:

- (a) no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the defined irrigation area(s);
- (b) treated wastewater is evenly distributed over the irrigation area;
- (c) no soil erosion occurs;
- (d) irrigation does not occur on land that is waterlogged; and
- (e) vegetation cover is maintained over the irrigation areas identified in Table 2.3.1.

1.2.6 The Licence Holder shall ensure that all pipelines containing tailings, decant water, dewater effluent and process water are either:

- (a) equipped with automatic cut-outs in the event of a pipe failure; or
- (b) provided with a secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

1.2.7 The Licence Holder shall:

- (a) undertake inspections as detailed in Table 1.2.4; and
- (b) maintain a record of all inspections undertaken.

Table 1.2.4: Inspection of infrastructure		
Scope of inspection	Type of inspection	Frequency of inspection
Mine dewater pipelines	Visual integrity	Daily
Tailings delivery pipelines	Visual integrity	
Tailings return water lines	Visual integrity	
Internal embankment freeboard of the TSF	Visual to confirm required freeboard capacity is available	

1.2.8 The Licence Holder shall ensure the limits specified in Table 1.2.5 are not exceeded.

Table 1.2.5: Production or design capacity limits		
Category¹	Category description¹	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	950,000 tonnes per annual period

Note 1: Environmental Protection Regulations 1987, Schedule 1.

1.2.9 The Licence Holder must:

- (a) construct and/or install the equipment;
 - (b) in accordance with the corresponding installation requirements; and
 - (c) at the corresponding infrastructure location; and
 - (d) within the corresponding timeframe,
- as set out in Table 1.2.6.

Table 1.2.6: Design and construction / installation requirements			
	Infrastructure	Installation requirements	Infrastructure location
1.	Wastewater treatment plant	100m ³ /day activated sludge bioreactor (ASBR) WWTP	As shown in Schedule 1 (Wastewater treatment plant)

1.2.10 The Licence Holder must within 30 calendar days of an item of equipment required by condition 1.2.9 being installed:

- (a) undertake an audit of their compliance with the requirements of condition 1.2.9; and
- (b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

2 Emissions

2.1 General

2.1.1 The Licence Holder shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to surface water

2.2.1 The Licence Holder shall ensure that where waste is emitted to surface water from the emission point in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to surface water		
Emission point reference and location on Map of emission points	Description	Source including abatement
E1	Overflow from WSF1 via spillway to mine creek	Overflow from WSF1

2.3 Emissions to land

2.3.1 The Licence Holder shall ensure that where waste is emitted to land from the emission points in Table 2.3.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emissions to land		
Emission point reference and location on Map of emission points	Description	Source including abatement
L1	Discharge of treated wastewater from oil water separator at Generator shed	Treated wastewater from the oil water separator at Generator shed
L2	Discharge of wastewater to a 2.4 ha spray irrigation field	Treated wastewater from the accommodation camp wastewater treatment plant

- 2.3.2 The Licence Holder shall not cause or allow emissions to land greater than the limits listed in Table 2.3.2.

Table 2.3.2: Emission limits to land			
Emission point reference	Parameter	Limit (including units)	Averaging period
L1	Total Recoverable Hydrocarbons	15 mg/L	Spot sample

- 2.3.3 The Licence Holder must ensure that treated wastewater is only discharged via irrigation to the specified authorised areas in accordance with the limits specified in Table 2.3.3

Table 2.3.3: Irrigation emission limits			
Discharge point	Parameter	Concentration limit	Loading limit
L2	Total nitrogen	19 mg/L	300 kg/ha/yr
	Total phosphorus	3.1	50 kg/ha/yr

3 Monitoring

3.1 General monitoring

- 3.1.1 The Licence Holder shall 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 groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
 - (d) 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.
- 3.1.2 The Licence Holder shall ensure that:
- (a) quarterly monitoring is undertaken at least 45 days apart; and
 - (b) monthly monitoring is undertaken at least 15 days apart.
- 3.1.3 The Licence Holder shall 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.
- 3.1.4 The Licence Holder shall, 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.

3.2 Monitoring of point source emissions to surface water

3.2.1 The Licence Holder shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to surface water			
Emission point reference	Parameter	Units	Frequency
E1	Estimated volume discharged	m³/day	When discharging
	pH¹	pH units	Weekly when discharging
	Total Dissolved Solids	mg/L	
	Selenium		
	Sulfate		
	Manganese		
	Nickel		
	Copper		
	Cobalt		

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

3.3 Monitoring of emissions to land

3.3.1 The Licence Holder shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of emissions to land			
Emission point reference	Parameter	Units	Frequency
L1	Total Recoverable Hydrocarbons	mg/L	Quarterly
L2 - Wastewater Treatment Plant – outlet sample tap	pH ¹	-	Quarterly
	Biochemical Oxygen Demand	mg/L	
	Total Suspended Solids		
	Total Nitrogen		
	Total Phosphorus		
	<i>E.coli</i>	cfu/100mL	
	Total dissolved soils	mg/L	
	Total Chlorine	mg/L	
	Volumetric flow rate	m³/day	Continuous

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

3.4 Monitoring of inputs and outputs

3.4.1 The Licence Holder shall undertake the monitoring in Table 3.4.1 according to the specifications in that table.

Table 3.4.1: Monitoring of inputs and outputs					
Input/output	Monitoring point reference	Parameter	Units	Averaging period	Frequency
Treated wastewater discharge to irrigation areas	L2 – Flow meter devices on outgoing pipelines	Volumetric flow rate (cumulative)	m ³ /day	Daily	Continuous
Waste Inputs	Landfill	Clean fill, Inert Waste Type 1, Inert Waste Type 2, Putrescible waste, Contaminated Solid Waste, Special	m ³	N/A	Monthly

Table 3.4.1: Monitoring of inputs and outputs					
Input/output	Monitoring point reference	Parameter	Units	Averaging period	Frequency
		Waste Type 1, Special Waste Type 2			
	North and South Waste Rock Dumps	Inert Waste Type 2 (tyres)			
Water	TSF WSF1 WSF2 WSF3	Volumetric flow rate (cumulative)	m ³ /day	Monthly	Continuous
TSF seepage	Seepage recovery bores: SMPB03 SMPB12	Volume	m ³ /day	Daily	Continuous

3.5 Ambient environmental quality monitoring

3.5.1 The Licence Holder shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Monitoring of ambient groundwater and surface water quality						
Monitoring point reference and location as specified on Map in schedule 1.	Parameter	Trigger	Limit	Units	Averaging period	Frequency
Groundwater monitoring bores: SMMB1 SMMB2 SMMB3 PARPMB01	Standing Water Level	-	-	m(AHD)	Spot sample	Quarterly
	pH ¹	6.5-8.5	-	pH units		
	Electrical Conductivity	5,000	-	µS/cm		
	Total Dissolved Solids	4,000	-	mg/L		
	Total Recoverable Hydrocarbons	-	-			
	Aluminium	5	-			
	Ammonia	2.5	-			
	Arsenic	0.5	-			
	Cadmium	0.01	-			
	Calcium	-	-			
	Chloride	-	-			
	Chromium	0.05	-			
	Cobalt	1	-			
	Copper	2	-			
	Iron	0.3	-			
	Lead	0.1	-			

Table 3.5.1: Monitoring of ambient groundwater and surface water quality						
Monitoring point reference and location as specified on Map in schedule 1.	Parameter	Trigger	Limit	Units	Averaging period	Frequency
	Magnesium	-	-			
	Manganese	20	-			
	Mercury	0.002	-			
	Nickel	3	-			
	Nitrate	-	-			
	Potassium	-	-			
	Selenium	0.02	-			
	Silicon	-	-			
	Silver	0.02	-			
	Sodium	-	-			
	Sulfate	4,000	-			
	Zinc	20	-			
Production bores: SMPB02 SMPB10	Standing Water Level	-	-	m(AHD)	Spot sample	Quarterly
	pH ¹	6.5-8.5	-	pH units		
	Electrical Conductivity	1,500	-	µS/cm		
	Total Dissolved Solids	4,000	-	mg/L		
	Total Recoverable Hydrocarbons	-	-			
	Aluminium	5	-			
	Ammonia	2.5	-			
	Arsenic	0.01	-			
	Cadmium	0.01	-			
	Calcium	-	-			
	Chloride	-	-			
	Chromium	0.05	-			
	Cobalt	1	-			
	Copper	1	-			
	Iron	0.3	-			
	Lead	0.1	-			
	Magnesium	-	-			
	Manganese	0.1	-			
	Mercury	0.002	-			
	Nickel	0.05	-			
	Nitrate	-	-			
	Potassium	-	-			
	Selenium	0.01	-			
	Silicon	-	-			
	Silver	0.02	-			
	Sodium	-	-			
	Sulfate	500	-			
	Zinc	20	-			
Surface water monitoring points: WSF1 Seepage	pH ¹	-	-	pH units	Spot sample	Quarterly
	Electrical Conductivity	-	-	µS/cm		
	Total Dissolved Solids	-	-	mg/L		

Table 3.5.1: Monitoring of ambient groundwater and surface water quality						
Monitoring point reference and location as specified on Map in schedule 1.	Parameter	Trigger	Limit	Units	Averaging period	Frequency
Spillway 1 Spillway 2	Total Recoverable Hydrocarbons	-	15			
	Aluminium	-	-			
	Ammonia					
	Arsenic	-	-			
	Cadmium	-	-			
	Calcium	-	-			
	Chloride					
	Chromium	-	-			
	Cobalt	-	-			
	Copper	-	-			
	Iron	-	-			
	Lead	-	-			
	Magnesium	-	-			
	Manganese	-	-			
	Mercury	-	-			
	Nickel	-	-			
	Nitrate	-	-			
	Potassium	-	-			
	Selenium	-	-			
	Silicon	-	-			
	Silver	-	-			
	Sodium	-	-			
	Sulfate	-	-			
	Zinc	-	-			
Surface water monitoring point: Mine Creek @ HWY	pH ¹	-	-	pH units	Spot sample	Quarterly
	Electrical Conductivity	-	-	µS/cm		
	Total Dissolved Solids	-	-	mg/L		
	Total Recoverable Hydrocarbons	-	15			
	Aluminium	-	-			
	Ammonia					
	Arsenic	-	-			
	Cadmium	-	-			
	Calcium	-	-			
	Chloride	-	-			
	Chromium	-	-			
	Cobalt	1	-			
	Copper	1	-			
	Iron	-	-			
	Lead	-	-			
	Magnesium	-	-			
	Manganese	-	-			
	Mercury	-	-			
	Nickel	1	-			
	Nitrate	-	-			
	Potassium	-	-			

Table 3.5.1: Monitoring of ambient groundwater and surface water quality						
Monitoring point reference and location as specified on Map in schedule 1.	Parameter	Trigger	Limit	Units	Averaging period	Frequency
	Selenium	-	-			
	Silicon	-	-			
	Silver	-	-			
	Sodium	-	-			
	Sulfate	1,800	5,000			
	Zinc	-	-			
Surface water monitoring points: FCNCP (Fletchers Creek Northern Control Point) FCSCP2 (Fletchers Creek Southern Control Point 2)	pH ¹			pH units	Spot sample	Quarterly
	Electrical Conductivity	-	-	µS/cm		
	Total Dissolved Solids	-	-	mg/L		
	Total Recoverable Hydrocarbons	-	15			
	Aluminium	-	-			
	Ammonia					
	Arsenic	-	-			
	Cadmium	-	-			
	Calcium	-	-			
	Chloride	-	-			
	Chromium	-	-			
	Cobalt	0.003	-			
	Copper	0.0062	-			
	Iron	-	-			
	Lead	-	-			
	Magnesium	-	-			
	Manganese	-	-			
	Mercury	-	-			
	Nickel	0.067	-			
	Nitrate	-	-			
	Potassium	-	-			
	Selenium	-	-			
	Silicon	-	-			
	Silver	-	-			
	Sodium	-	-			
	Sulfate	350	700			
	Zinc	-	-			

4 Information

4.1 Records

4.1.1 All information and records required by the Licence shall:

- (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 4.1.1(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.

- 4.1.2 The Licence Holder shall 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.
- 4.1.3 The Licence Holder shall 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.

4.2 Reporting

- 4.2.1 The Licence Holder shall submit to the CEO an Annual Environmental Report within 120 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: 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
-	Summary of surface water monitoring data as required by <i>Savannah Nickel Project Operating Strategy</i> , prepared by RPS Aquaterra Pty Ltd for Savannah Nickel Mines Pty Ltd, 20 November 2013	None specified
Table 3.2.1	Monitoring results for the discharge of overflow water from WSF1 during discharge events	None specified
Table 3.3.1	Total Recoverable Hydrocarbons	LR1
	Monitoring results for the wastewater treatment plant with a comparison against the NWQMS Australian Guidelines for Sewerage Systems, Effluent Management, 1997	None specified
Table 3.4.1	Cumulative volumes to irrigation area, waste inputs, water and TSF seepage	None specified
Table 3.5.1	Groundwater bore monitoring results – pH, Electrical Conductivity, Total Dissolved Solids, Total Recoverable Hydrocarbons, Aluminium, Ammonia, Arsenic, Cadmium, Calcium, Chloride, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Nitrate, Potassium, Selenium, Silicon, Silver, Sodium, Sulfate and Zinc	AWQ1
Table 3.5.1	Surface water monitoring results - pH, Electrical Conductivity, Total Dissolved Solids, Total Recoverable Hydrocarbons, Aluminium, Ammonia, Arsenic, Cadmium, Calcium, Chloride, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Nitrate, Potassium, Selenium, Silicon, Silver, Sodium, Sulfate and Zinc	AWQ1
Table 3.5.1	Breach of any trigger and/or limit specified in the Licence	None specified

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form
4.1.2	Compliance	Annual Audit Compliance Report (AACR)
4.1.3	Complaints summary	None specified

4.2.2 The Licence Holder shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and Licence limits.

4.2.3 The Licence Holder shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: 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 CEO's request	As received by the Licence Holder from third parties

4.3 Notification

4.3.1 The Licence Holder shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
-	Recommencing start-up of operations (after a period of care and maintenance)	At least 90 days prior to recommencing production	None specified
1.3.1, 2.1.1, 2.3.3, 3.5.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
3.1.4	Calibration report	As soon as practicable	None specified

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

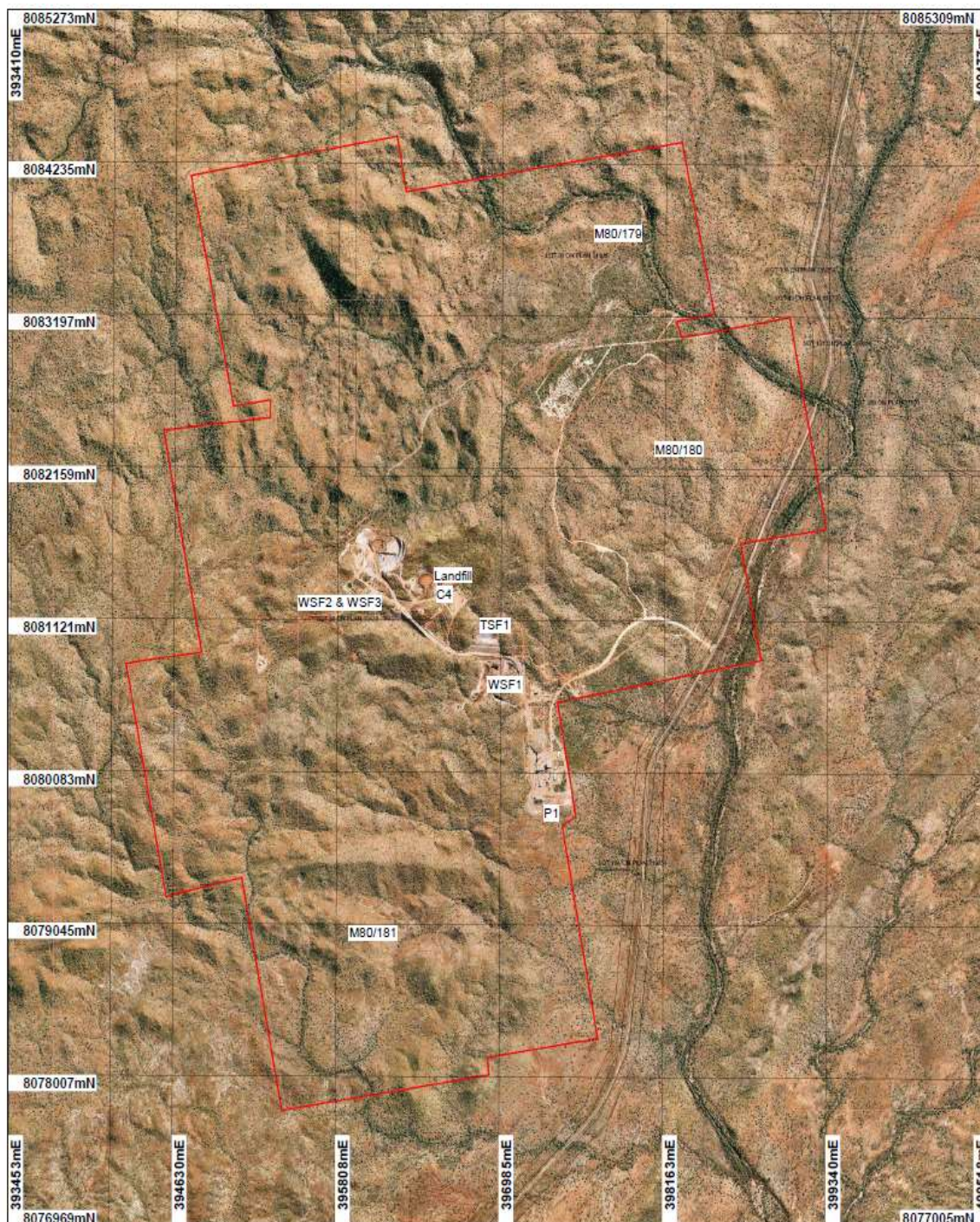
Note 2: Forms are in Schedule 2

END OF CONDITIONS

Schedule 1: Maps

Premises map

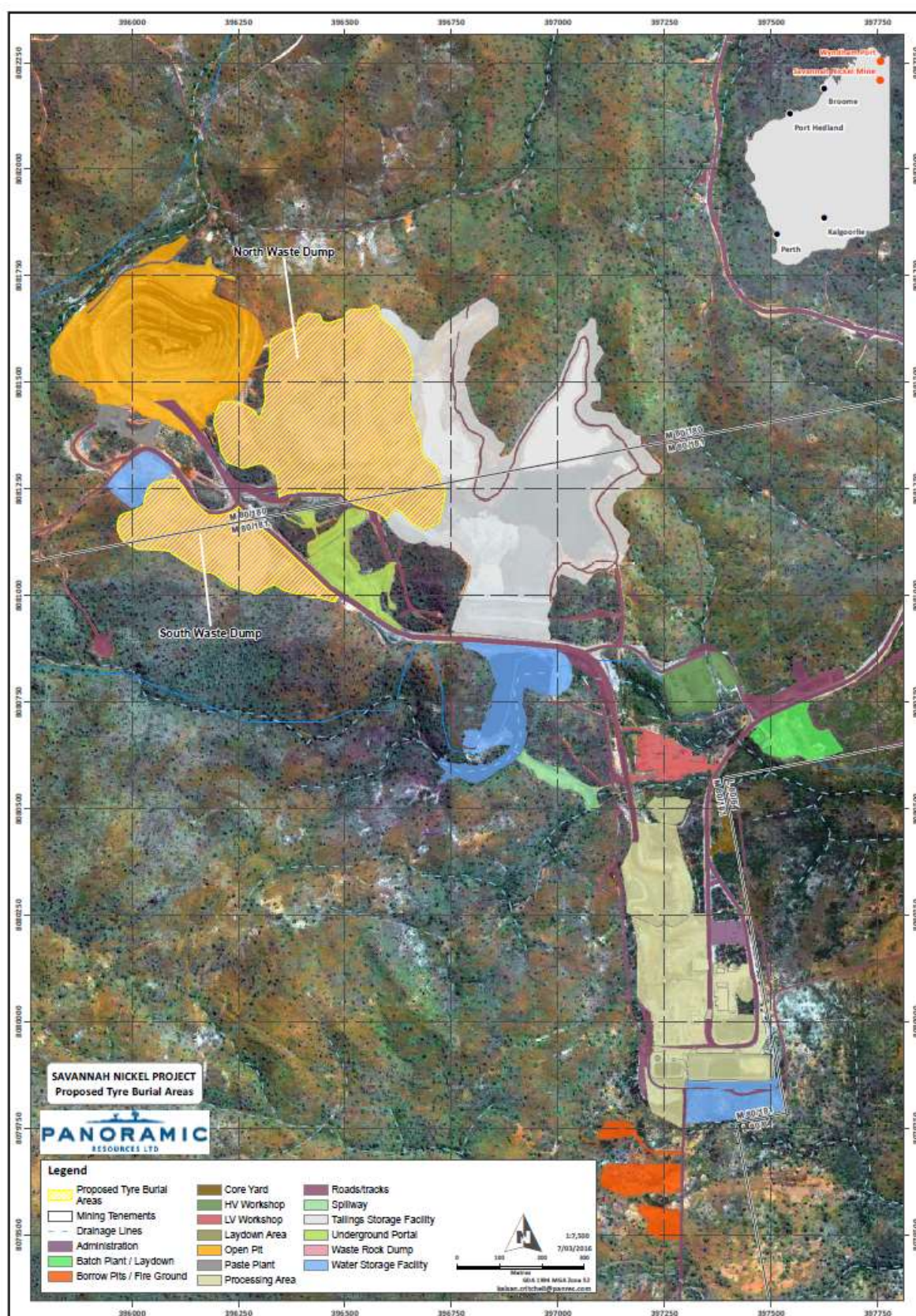
The boundary of the prescribed premises is shown in the map below.



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IR-T06 Licence template (v5.0) (September 2019)

The location of the waste facilities and storage areas defined in Tables 1.2.1 and 1.2.3 are shown below.

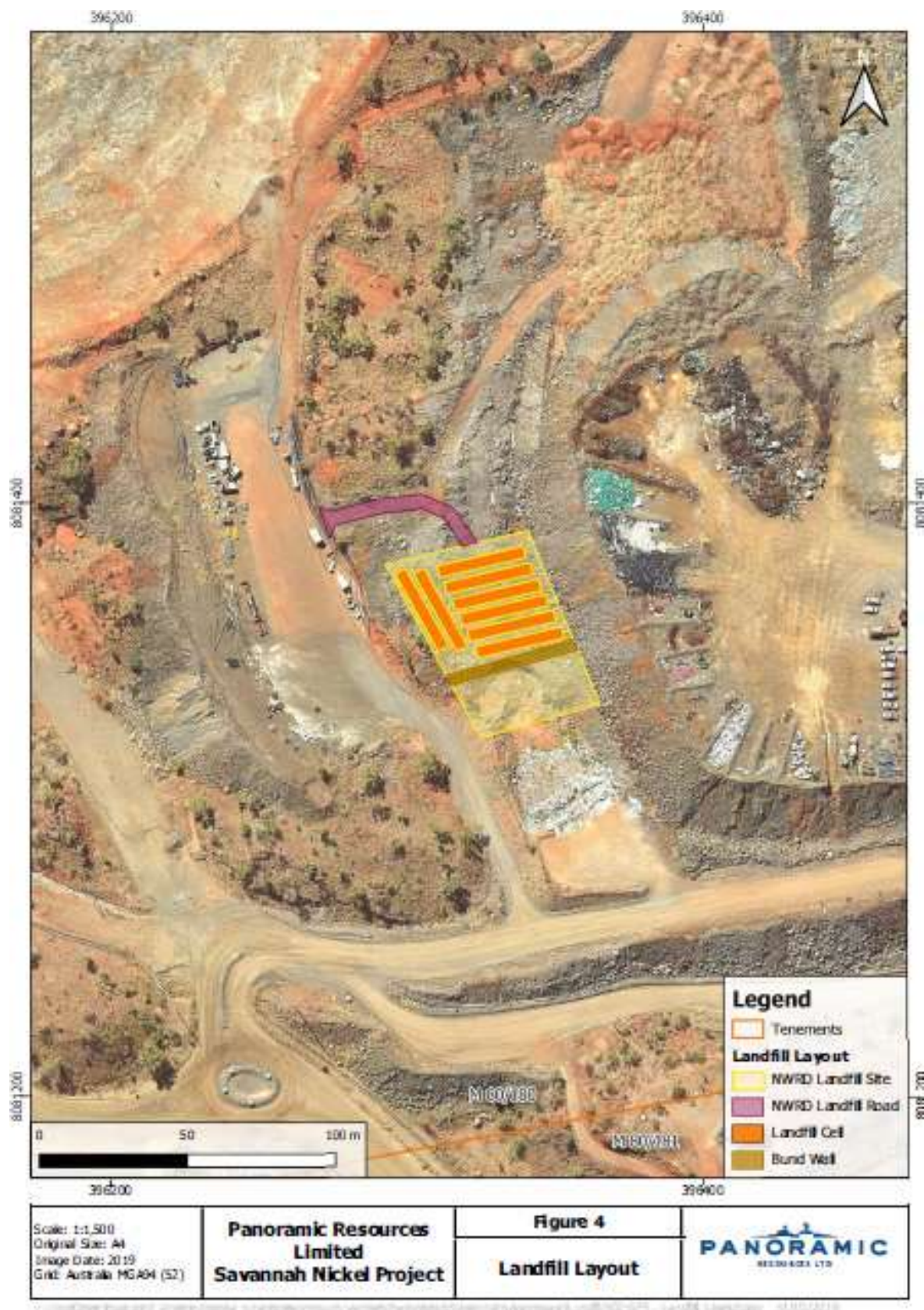


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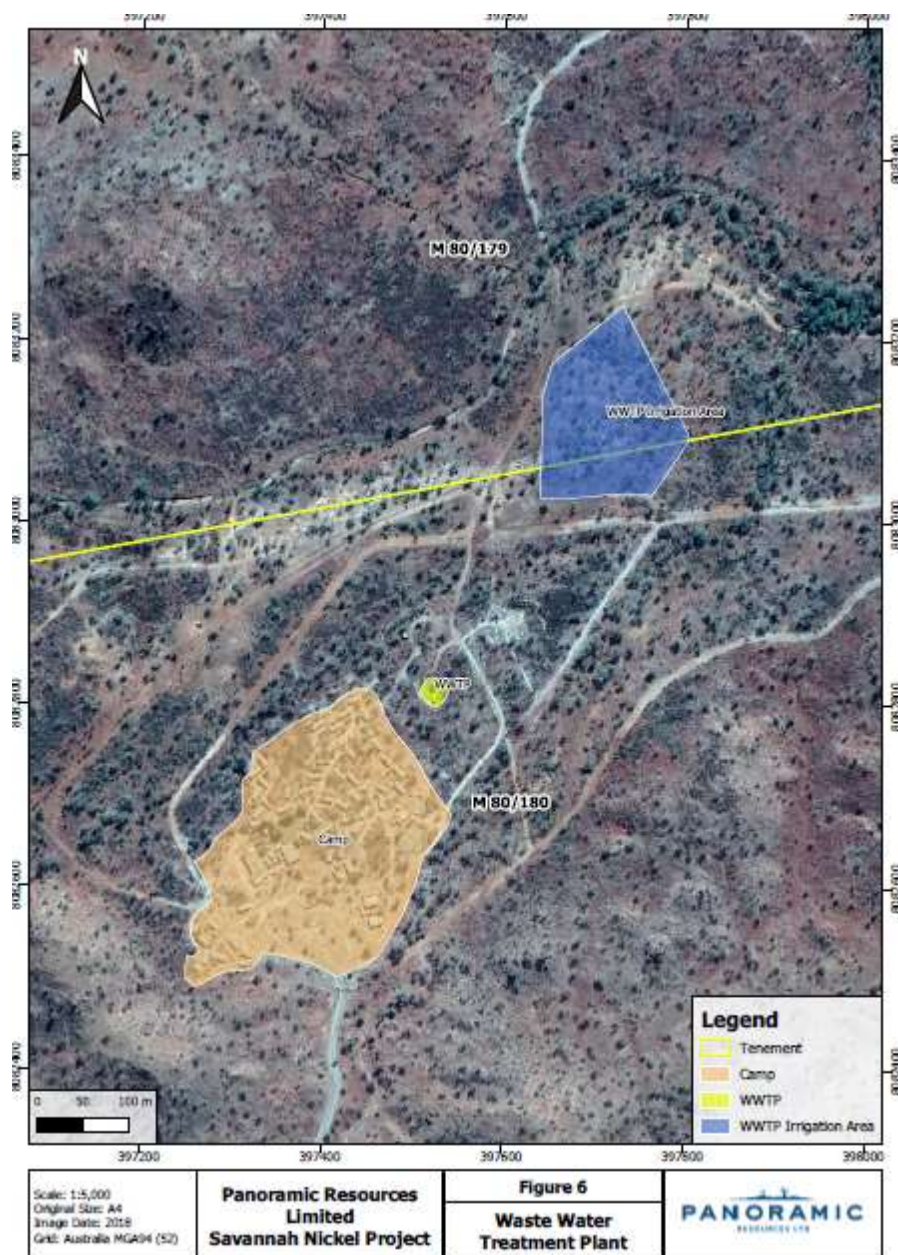
IR-T06 Licence template (v5.0) (September 2019)

The location of the emission point E1 defined in Table 2.2.1 is shown below.





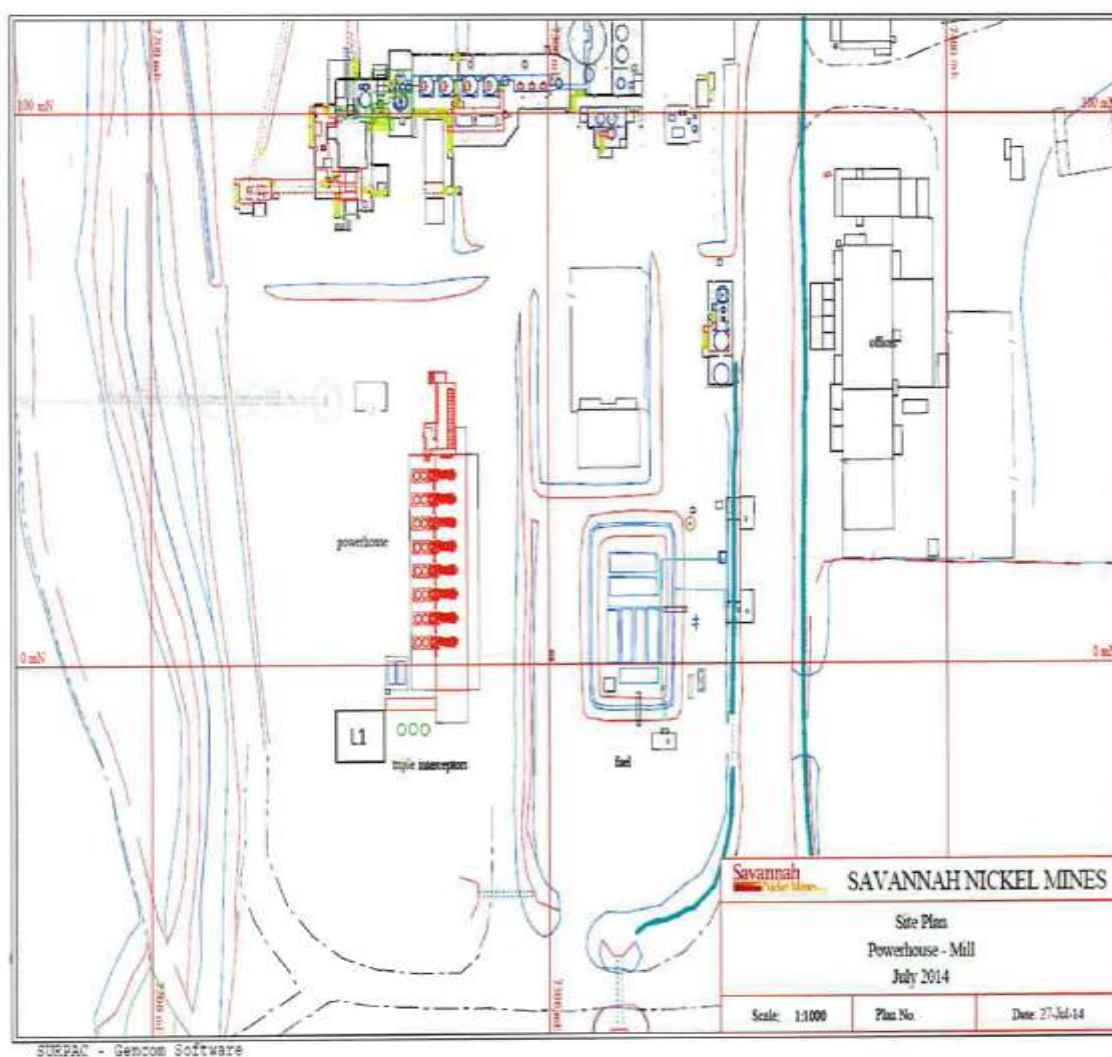
Wastewater Treatment Plant

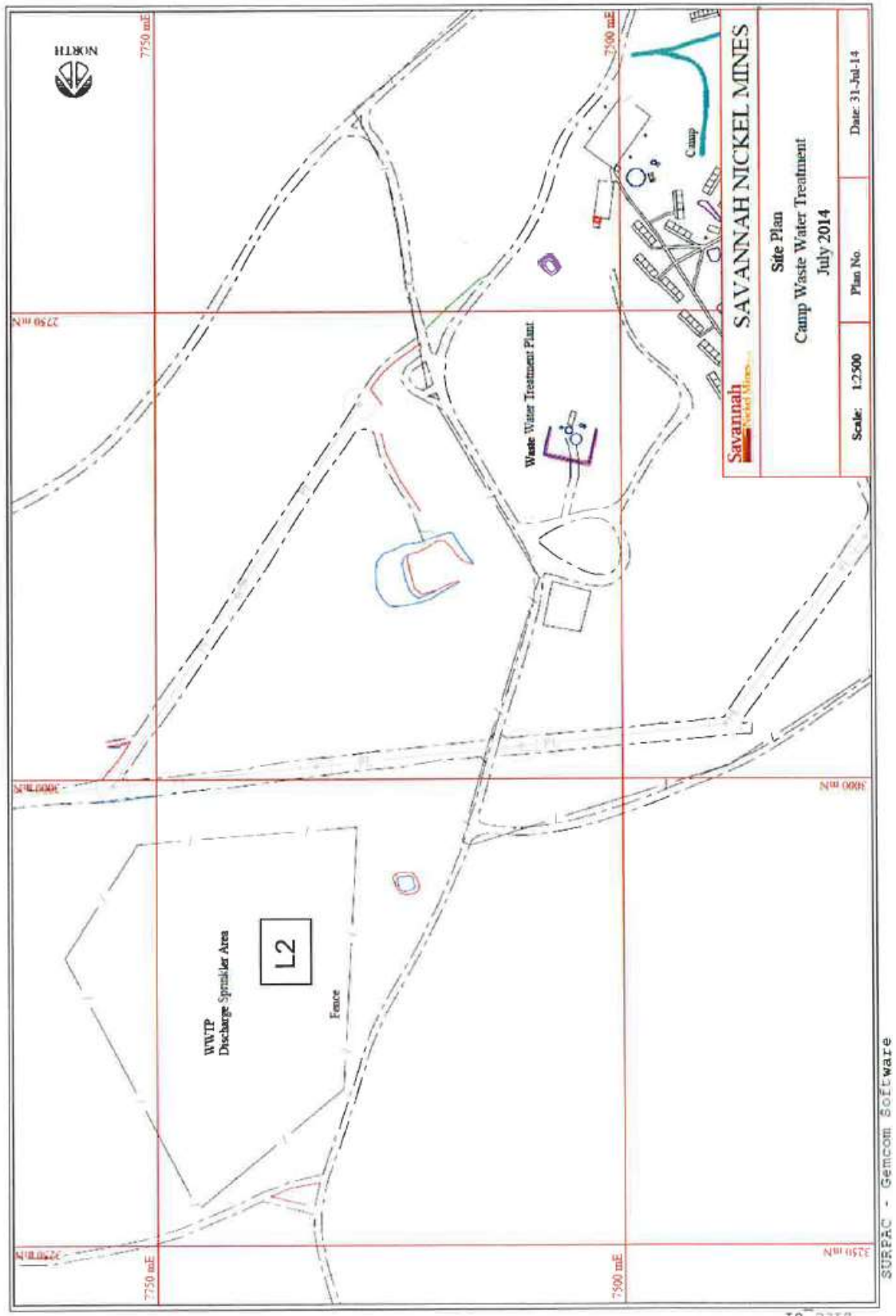


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IR-T06 Licence template (v5.0) (September 2019)

The locations of the emission points L1 and L2 defined in Table 2.3.1 are shown below.



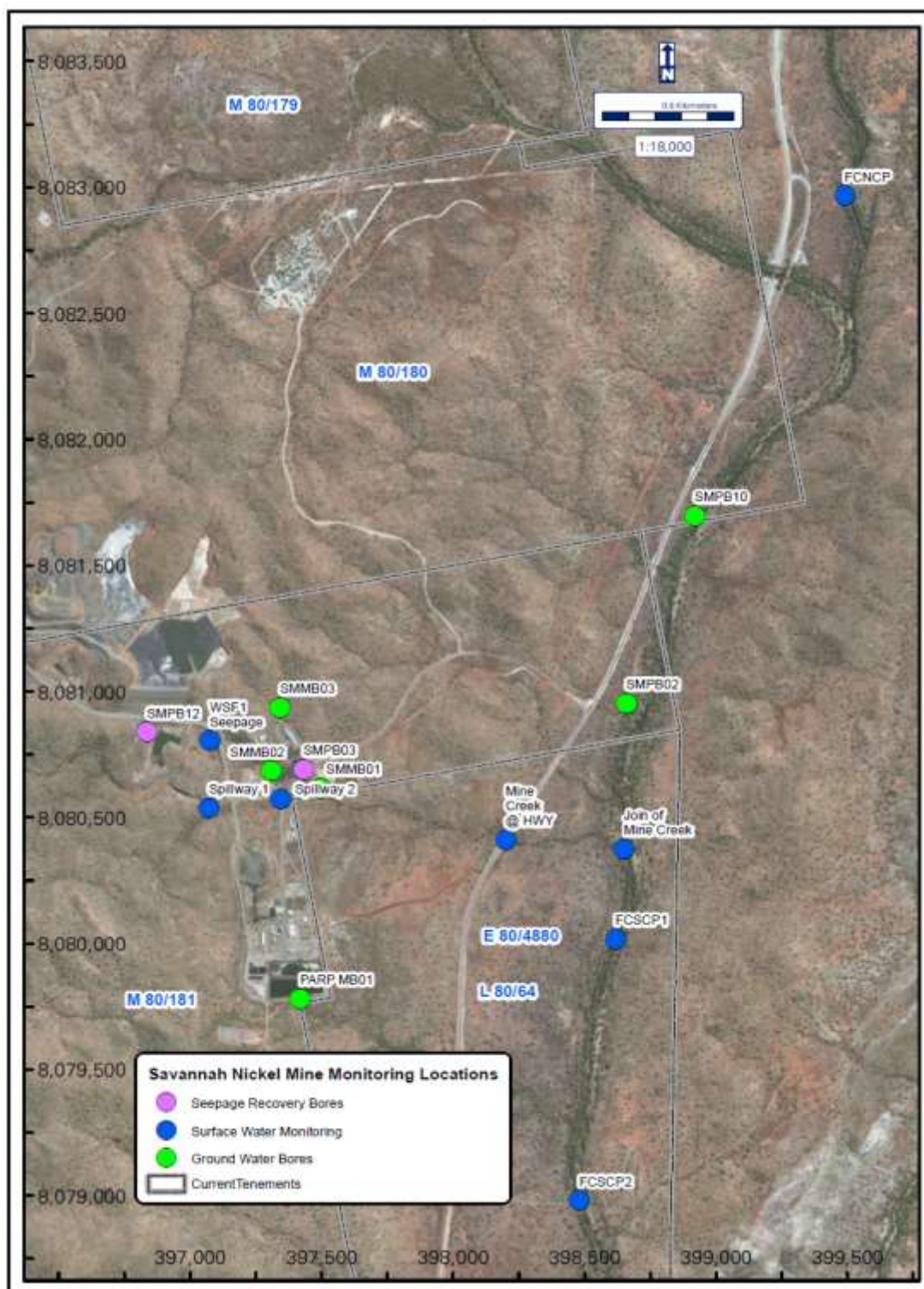


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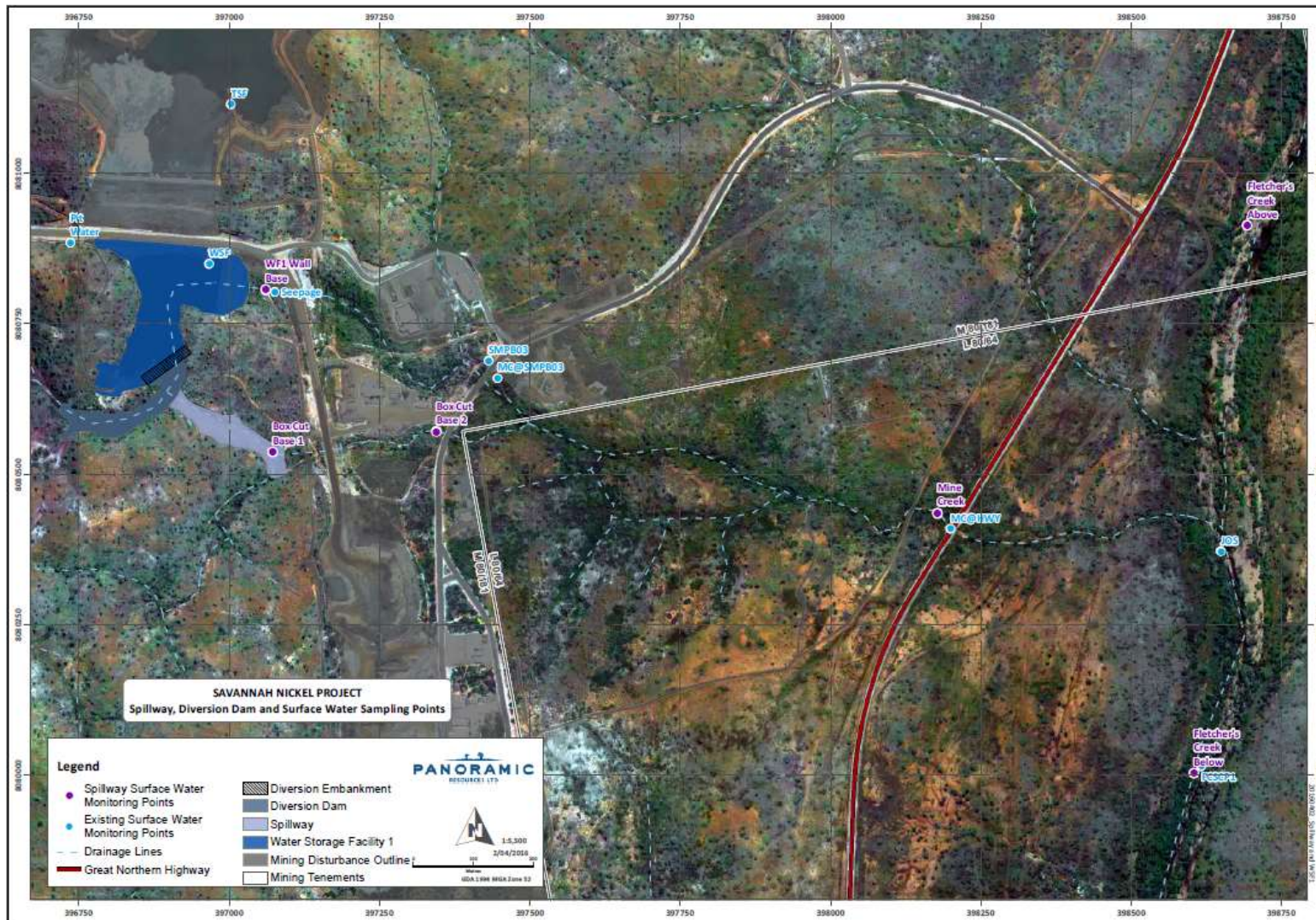
IR-T06 Licence template (v5.0) (September 2019)

Map of monitoring locations

The locations of the monitoring points defined in Table 3.4.1 Table 3.5.1 are shown below.



Surface water monitoring sites



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IR-T06 Licence template (v5.0) (September 2019)

Schedule 2:

Licence: L7967/2003/6

Licensee: Savannah Nickel Mines Pty Ltd

Form: AGWQ1

Period:

Name: Monitoring of ambient groundwater quality

Form AGWQ1: Monitoring of ambient groundwater quality							
Emission point	Parameter	Trigger	Limit	Result	Averaging period	Method	Sample date & times
Groundwater monitoring bores: SMMB1 SMMB2 SMMB3 PARPMB01	Standing Water Level	-	-	m(AHD)	Spot sample		
	pH ¹	6.5-8.5	-	pH units	Spot sample		
	Electrical Conductivity	5,000	-	µS/cm	Spot sample		
	Total Dissolved Solids	4,000	-	mg/L	Spot sample		
	Total Recoverable Hydrocarbons	-	-	mg/L	Spot sample		
	Aluminium	5	-	mg/L	Spot sample		
	Ammonia	2.5	-	mg/L	Spot sample		
	Arsenic	0.5	-	mg/L	Spot sample		
	Cadmium	0.01	-	mg/L	Spot sample		
	Calcium	-	-	mg/L	Spot sample		

	Chloride	-	-	mg/L	Spot sample		
	Chromium	0.05	-	mg/L	Spot sample		
	Cobalt	1	-	mg/L	Spot sample		
	Copper	2	-	mg/L	Spot sample		
	Iron	0.3	-	mg/L	Spot sample		
	Lead	0.1	-	mg/L	Spot sample		
	Magnesium	-	-	mg/L	Spot sample		
	Manganese	20	-	mg/L	Spot sample		
	Mercury	0.002	-	mg/L	Spot sample		
	Nickel	3	-	mg/L	Spot sample		
	Nitrate	-	-	mg/L	Spot sample		
	Potassium	-	-	mg/L	Spot sample		
	Selenium	0.02	-	mg/L	Spot sample		
	Silicon	-	-	mg/L	Spot sample		
	Silver	0.02	-	mg/L	Spot sample		
	Sodium	-	-	mg/L	Spot sample		
	Sulfate	4,000	-	mg/L	Spot sample		
	Zinc	20	-	mg/L	Spot sample		

Production bores: SMPB02 SMPB10	Standing Water Level	-	-	m(AHD)	Spot sample		
	pH ¹	6.5-8.5	-	pH units	Spot sample		
	Electrical Conductivity	1,500	-	µS/cm	Spot sample		
	Total Dissolved Solids	4,000	-	mg/L	Spot sample		
	Total Recoverable Hydrocarbons	-	-	mg/L	Spot sample		
	Aluminium	5	-	mg/L	Spot sample		
	Ammonia	2.5	-	mg/L	Spot sample		
	Arsenic	0.01	-	mg/L	Spot sample		
	Cadmium	0.01	-	mg/L	Spot sample		
	Calcium	-	-	mg/L	Spot sample		
	Chloride	-	-	mg/L	Spot sample		
	Chromium	0.05	-	mg/L	Spot sample		
	Cobalt	1	-	mg/L	Spot sample		
	Copper	1	-	mg/L	Spot sample		
	Iron	0.3	-	mg/L	Spot sample		
	Lead	0.1	-	mg/L	Spot sample		
	Magnesium	-	-	mg/L	Spot sample		

	Manganese	0.1	-	mg/L	Spot sample		
	Mercury	0.002	-	mg/L	Spot sample		
	Nickel	0.05	-	mg/L	Spot sample		
	Nitrate	-	-	mg/L	Spot sample		
	Potassium	-	-	mg/L	Spot sample		
	Selenium	0.01	-	mg/L	Spot sample		
	Silicon	-	-	mg/L	Spot sample		
	Silver	0.02	-	mg/L	Spot sample		
	Sodium	-	-	mg/L	Spot sample		
	Sulfate	500	-	mg/L	Spot sample		
	Zinc	20	-	mg/L	Spot sample		
Surface water monitoring points: WSF1 Seepage Spillway 1	pH ¹	-	-	pH units	Spot sample		
	Electrical Conductivity	-	-	µS/cm	Spot sample		
	Total Dissolved Solids	-	-	mg/L	Spot sample		
	Total Recoverable Hydrocarbons	-	15	mg/L	Spot sample		
	Aluminium	-	-	mg/L	Spot sample		
	Ammonia			mg/L	Spot sample		

Spillway 2	Arsenic	-	-	mg/L	Spot sample		
	Cadmium	-	-	mg/L	Spot sample		
	Calcium	-	-	mg/L	Spot sample		
	Chloride			mg/L	Spot sample		
	Chromium	-	-	mg/L	Spot sample		
	Cobalt	-	-	mg/L	Spot sample		
	Copper	-	-	mg/L	Spot sample		
	Iron	-	-	mg/L	Spot sample		
	Lead	-	-	mg/L	Spot sample		
	Magnesium	-	-	mg/L	Spot sample		
	Manganese	-	-	mg/L	Spot sample		
	Mercury	-	-	mg/L	Spot sample		
	Nickel	-	-	mg/L	Spot sample		
	Nitrate	-	-	mg/L	Spot sample		
	Potassium	-	-	mg/L	Spot sample		
	Selenium	-	-	mg/L	Spot sample		
	Silicon	-	-	mg/L	Spot sample		
	Silver	-	-	mg/L	Spot sample		

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	Sodium	-	-	mg/L	Spot sample		
	Sulfate	-	-	mg/L	Spot sample		
	Zinc	-	-	mg/L	Spot sample		
Surface water monitoring point: Mine Creek @ HWY	pH ¹	-	-	pH units	Spot sample		
	Electrical Conductivity	-	-	µS/cm	Spot sample		
	Total Dissolved Solids	-	-	mg/L	Spot sample		
	Total Recoverable Hydrocarbons	-	15	mg/L	Spot sample		
	Aluminium	-	-	mg/L	Spot sample		
	Ammonia			mg/L	Spot sample		
	Arsenic	-	-	mg/L	Spot sample		
	Cadmium	-	-	mg/L	Spot sample		
	Calcium	-	-	mg/L	Spot sample		
	Chloride	-	-	mg/L	Spot sample		
	Chromium	-	-	mg/L	Spot sample		
	Cobalt	1	-	mg/L	Spot sample		
	Copper	1	-	mg/L	Spot sample		
	Iron	-	-	mg/L	Spot sample		

	Lead	-	-	mg/L	Spot sample		
	Magnesium	-	-	mg/L	Spot sample		
	Manganese	-	-	mg/L	Spot sample		
	Mercury	-	-	mg/L	Spot sample		
	Nickel	1	-	mg/L	Spot sample		
	Nitrate	-	-	mg/L	Spot sample		
	Potassium	-	-	mg/L	Spot sample		
	Selenium	-	-	mg/L	Spot sample		
	Silicon	-	-	mg/L	Spot sample		
	Silver	-	-	mg/L	Spot sample		
	Sodium	-	-	mg/L	Spot sample		
	Sulfate	1,800	5,000	mg/L	Spot sample		
	Zinc	-	-	mg/L	Spot sample		
Surface water monitoring points: FCNCP (Fletchers Creek	pH ¹			pH units	Spot sample		
	Electrical Conductivity	-	-	µS/cm	Spot sample		
	Total Dissolved Solids	-	-	mg/L	Spot sample		
	Total Recoverable Hydrocarbons	-	15	mg/L	Spot sample		

Northern Control Point) FCSCP2 (Fletchers Creek Southern Control Point 2)	Aluminium	-	-	mg/L	Spot sample		
	Ammonia			mg/L	Spot sample		
	Arsenic	-	-	mg/L	Spot sample		
	Cadmium	-	-	mg/L	Spot sample		
	Calcium	-	-	mg/L	Spot sample		
	Chloride	-	-	mg/L	Spot sample		
	Chromium	-	-	mg/L	Spot sample		
	Cobalt	0.003	-	mg/L	Spot sample		
	Copper	0.0062	-	mg/L	Spot sample		
	Iron	-	-	mg/L	Spot sample		
	Lead	-	-	mg/L	Spot sample		
	Magnesium	-	-	mg/L	Spot sample		
	Manganese	-	-	mg/L	Spot sample		
	Mercury	-	-	mg/L	Spot sample		
	Nickel	0.067	-	mg/L	Spot sample		
	Nitrate	-	-	mg/L	Spot sample		
	Potassium	-	-	mg/L	Spot sample		
	Selenium	-	-	mg/L	Spot sample		

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	Silicon	-	-	mg/L	Spot sample		
	Silver	-	-	mg/L	Spot sample		
	Sodium	-	-	mg/L	Spot sample		
	Sulfate	350	700	mg/L	Spot sample		
	Zinc	-	-	mg/L	Spot sample		

Signed on behalf of Savannah Nickel Mines Pty Ltd: Date:

Licence: L7967/2003/6

Licensee: Savannah Nickel Mines 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 shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission triggers/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.	

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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 Savannah Nickel Mines Pty Ltd	
Date	