Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8628/2012/2
Licence holder	Poseidon Nickel Limited
ACN	060 525 206
Registered business address	Level 1, 3 Ord Street WEST PERTH, WA 6005
DWER file number	2012/001002
Duration	08/03/2021 to 07/03/2041
Date of issue	4 March 2021
Premises details	Lake Johnston Operations Hyden-Norseman Road M63/163, M63/283, M63/284, L63/51, G63/4 and G63/5 as depicted in Schedule 1

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production / design capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	1,500,000 tonnes per annual period
Category 6: Mine dewatering	5,000,000 tonnes per annual period
Category 52: Electric power generation	12.2 megawatts in aggregate (diesel)
Category 54: Sewage facility	100 cubic metres per day
Category 63: Class I inert landfill site	500 tonnes per annual period
Category 64: Class II or III putrescible landfill site	500 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 4 March 2021, by:

Terrel MacGregor

Digitally signed by Terrel MacGregor
Date: 2021.03.04 07:48:10 +08'00'

Terrel MacGregor
A/MANAGER – RESOURCE INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
28/5/2009	L7414/2000/7	Licence reissue
08/03/2012	L8628/2012/1	New licence to replace fallen over licence L7414/2000/7
13/12/2012	W5300/2014/1	Works approval for TSF2 lift
15/01/2015	W5300/2014/1	Amended works approval to increase TSF2 final lift height and conversion to new format
20/08/2015	L8628/2012/1	Transfer of licence to Poseidon and conversion to new format
29/11/2017	L8628/2012/1	Amendment to reduce frequency of groundwater level monitoring
4/03/2021	L8628/2012/2	Administrative licence renewal. Update of conditions to include Licence Holder proposed improvements IR1 and IR2. Administrative changes incorporated into licence.

Contents

Introduction

This introduction is not part of the Licence conditions.

DWER's industry licensing role

The Department of Water and Environmental Regulation (DWER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DWER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DWER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DWER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises Licence Holder the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link: https://www.legislation.wa.gov.au/legislation/statutes.nsf/default.html.

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.

- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.

Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non-payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

In November 2014, Poseidon Nickel Limited (Poseidon) purchased the Lake Johnston Operations (LJO) from Norilsk Nickel Australia. LJO encompasses mining operations at Maggie Hays and Emily Ann nickel mines, which send ore to the onsite processing facility (LJO concentrator). The LJO concentrator also accepts some ore from the Black Swan nickel mine and has a production capacity of 1,500,000 tonnes of ore per year. Prior to a period of care and maintenance in 2009, nickel bearing ore was mined from both deposits. However, since emerging from care and maintenance in 2011, ore was mined from Maggie Hays only with Emily Ann mine allowed to flood. In July 2013 Norilsk entered into another period of care and maintenance with Maggie Hays mine also becoming non-operational to this date. LJO's current occupier, Poseidon, has cared for and maintained the LJO concentrator to facilitate an eventual return to operations.

When operating, ore is processed on site using a conventional sulfide flotation plant to produce nickel concentrate. Once crushed the majority of ore is stored in the fine ore bin before being conveyed to the mill for further processing through the grinding, flotation tanks, thickeners and filters. Final nickel concentrate product is stored within an enclosed shed before it is trucked offsite to Esperance Port.

The coarser tails fraction is separated during the thickening stage and piped to a conventional Tailings Storage Facility (TSF) to the south of the treatment plant. The original TSF (TSF1) underwent four lifts before being extended with a second TSF (TSF2) in late 2007. TSF2 underwent a lift under works approval W5300/2012/1, to relative level (RL) 346.4 m.

The LJO Emily Ann Nickel Mine and Maggie Hays Nickel Mine are located 142km west of Norseman in the Shire of Dundas and within the Great Western Woodlands. Three plant species, all Eucalypts, found in the vicinity may be classified as rare or in need of special protection. The only regional surface water

features are Lake Johnston and Lake Hope, and their satellite salinas. They are both located about 10km south of LJO. Lake Hope North is being used for the disposal of saline groundwater and mine water from the LJO. The groundwater level (prior to dewatering) ranged from 22m below ground level at Emily Ann Mine, to 32m below ground level at Maggie Hays Mine. Groundwater salinity ranges from 27,000-200,000mg/L while the salinity of dewater taken from within LJO ranges from 29,000-200,000mg/L.

This licence was amended in 2017 which included:

- transfer the name of the Licence from Norilsk to Poseidon;
- no longer require regular invertebrate monitoring;
- introduce sediment monitoring to measure impacts of dewatering; and
- reduce TSF groundwater monitoring frequencies at the TSF.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION

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;*

'AHD' means the Australian height datum;

'annual period' means the inclusive period from 1 August until 31 July in the following 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 5667.10' 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/NZS 5667.12' means the Australian Standard AS/NZS 5667.12 *Water Quality – Sampling – Guidance on sampling of bottom sediments;*

'asbestos' means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophyllite, chrysolite, crocidolite, tremolite and any mixture containing 2 or more of those;

'asbestos fibres' has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia, (DOH, 2009);

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'biosolids' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996, as amended from time to time;

'**care and maintenance'** means the period during the suspension of mining operations as defined in the Mining Act 1978;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means;

Director General
Department Administering the Environmental Protection Act 1986
Locked Bag 10 JOONDALUP DC WA 6027

'Clean Fill' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996, as amended from time to time;

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

'Esperance Port' means the premises operated by Southern Ports Authority and licensed by DWER under L5099/1974/14;

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'hardstand' means a surface with a permeability of 10^{-9} metres/second or less;

'in-situ soils' means soils that are in place and have not been moved from their original place of deposition;

'Inert Waste Type 1' has the meaning defined in defined in Landfill Waste Classification and Waste Definitions 1996, as amended from time to time;

'Inert Waste Type 2' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996, as amended from time to time;

'leachate' means liquid released by or water that has percolated through waste and which contains some of its constituents;

'Licence' means this Licence numbered L8628/2012/1 and issued under the Act;

'Licence Holder' means the person or organisation named as Licence Holder on page 1 of the 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;

'mbgl' means metres below ground level;

'Operation/'s' means the period during mining operations as defined in the Mining Act 1978.

'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 Waste Classification and Waste Definitions 1996, as amended from time to time;

'quarterly' means the 4 inclusive periods from 1 August to 31 October, 1 November to 31 January in the following year, 1 February to 30 April and 1 May to 31 July;

'rehabilitation' means the completion of the engineering of a landfill cell and includes capping and/or final cover;

'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 2' has the meaning defined in defined in Landfill Waste

Classification and Waste Definitions 1996, as amended from time to time;

'spot sample' means a discrete sample representative at the time and place at which the sample is taken;

'SWL' means standing water level;

'TSF' means an engineered containment pond or dam used to store tailings;

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

'wastewater treatment vessels' means any vessel or tank containment infrastructure associated with the treatment of wastewater;

'WWTP' means the wastewater treatment plant; and

'zone of influence' means the area of a receiving environment with the potential to be altered or changed as a result of an emission or discharge.

1.1.3 Any reference to an 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.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:
(a) pollution;
(b) unreasonable emission;
(c) discharge of waste in circumstances likely to cause pollution; or
(d) being contrary to any written law.

1.2 General conditions

1.2.1 The Licence Holder shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.2 The Licence Holder shall immediately recover, or remove and dispose of spills of tailings, return water, saline water, or sewage effluent outside an engineered containment system.

1.2.3 The Licence Holder shall:
(a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises; and
(b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.[1]

Note1: *The Environmental Protection (Unauthorised Discharges) Regulations 2004* make it an offence to discharge certain materials into the environment.

1.3 Premises operation

1.3.1 The Licence Holder shall not process more than 1 500 000 tonnes of ore during the annual period.

1.3.2 The Licence Holder shall ensure that all pipelines containing tailings, return water or saline water are either:

(a) equipped with telemetry systems and pressure sensors along pipelines to allow for the detection of leaks and failures; or
(b) equipped with automatic cut-outs in the event of a pipe failure; or
(c) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections.

1.3.3 The Licence Holder shall ensure that any saline dewatering effluent shall only be managed in the following manner:

(a) used for dust suppression in a manner that minimises damage to surrounding vegetation; or
(b) discharged in accordance with conditions of this Licence.

1.3.4 The Licence Holder shall ensure that tailings, decant water, saline dewater and effluent are only discharged into containment cells and ponds with the relevant infrastructure requirements and at the locations specified in Table 1.3.1 and identified in Schedule 1.

Table 1.3.1: Containment infrastructure

Containment point reference	Material	Requirements
TSF 1 and TSF 2	Tailings	Lined with compacted in-situ or locally borrowed soils
Maggie Hays Mine dewater settling ponds (C1, C2, C3 C4 and C5)	Saline dewater	
Concrete batching settlement ponds	Washwater	None specified
Wastewater treatment vessels	Sewage	
Sewage treatment ponds (C6 and C7)	Sewage	Lined with compacted in-situ or locally borrowed soils
Emily Ann Mine dewater settling pond (C8)	Saline dewater	None specified
Emily Ann Mine dewater tank and catch pond (C9)	Saline dewater	
Emily Anne processing plant stormwater catchment pond (C10)	Potentially contaminated stormwater	
Process water ponds (C11, C12 and C13)	Saline dewater	
Evaporation/infiltration ponds (L1 and L2)	Treated wastewater	Unlined

1.3.5 The Licence Holder shall manage containment cells and ponds in Table 1.3.1 such that:

(a) a minimum top of embankment freeboard of 300mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained;
(b) methods of operation minimise the likelihood of erosion of the embankments by wave action; and
(c) vegetation and floating debris (emergent or otherwise) are prevented from encroaching onto pond surfaces or inner pond embankments

1.3.6 The Licence Holder shall manage TSFs such that:

(a) a seepage collection and recovery system is provided and used to capture seepage from the TSF;
(b) seepage is returned to the TSF or re-used in process; and
(c) the supernatant pond on the TSF is minimised.

1.3.7 The Licence Holder shall:
(a) undertake inspections as detailed in Table 1.3.2;
(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences; and
(c) maintain a record of all inspections undertaken.

Table 1.3.2: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection[1]
Tailings pipelines	Visual integrity	12 hourly
Return water lines	Visual integrity	Daily
TSF embankment freeboard	Visual to confirm required freeboard capacity is available	Daily
Tailings deposition	Visual to confirm tailings beach is managed appropriately	Daily
Ponding on the TSF surface	Visual to confirm ponding is minimised	Daily
External wall of the TSF	Visual to ensure that there are no signs of seepage	Daily
Dewatering pipelines	Visual to confirm there are no spills or leaks resulting from failures	Daily
Dewater settling ponds	Visual to identify seepage, spills or leaks	Daily
WWTP evaporation ponds	Visual to confirm required freeboard capacity is available	Daily

Note 1: Tailings pipelines, return water lines and TSF monitoring may be inspected on a monthly basis when not operating.

1.3.8 The Licence Holder shall undertake an annual water balance for TSF2. The water balance shall as a minimum consider the following:
(a) site rainfall;
(b) evaporation;
(c) decant water recovery volumes;
(d) seepage recovery volumes;
(e) volumes of tailings deposited; and
(f) total volume of liquid discharged to TSF2.

1.3.9 The Licence Holder shall ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 1.3.3.

Table 1.3.3: Management of waste

Waste type	Process	Process requirements[1,2]
Sewage	Disposal	100 m^3/day accepted through sewer inflows only. Disposed to evaporation ponds depicted in Schedule 1.
Sewage sludge	Disposal	Removed by a licensed controlled waste carrier
All landfill waste	Disposal of waste by landfilling	Not more than 500 tonnes per annual period cumulatively. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2m.
Hazardous waste	Storage prior to disposal	Must be stored in a bunded area/container prior to disposal offsite.
Inert Landfill (Maggie Hays Landfill)		
Clean Fill	Receipt, handling and storage prior to disposal	None specified
Inert Waste Type 1		Placed into landfill trenches.
Inert Waste Type 2		Tyres are not stored prior to burial in any location on the premises other than the Maggie Hays class I Inert Landfill. No more than 100 used tyres are stored at any one time before burial. Tyres are only stacked on level ground. All tyres are stacked on their side walls. Tyres are incorporated into waste rock material at the Maggie Hays Waste Rock Dump area as depicted in Schedule 1. No burnt tyres are disposed at the Maggie Hays Landfill. Tyres are not burnt.
Putrescible Landfill (Windy Hill Landfill as depicted in Schedule 1)		
Putrescible waste (including biosolids)	Disposal	Putrescible and domestic waste is placed within a defined trench or within an area enclosed by earth bunds. The active tipping area is less than 30 metres in length.
Inert Waste Type 1		Placed into landfill trenches.
Special Waste Type 1	Handling and disposal	Only to be disposed of into a designated asbestos disposal area within the Windy Hill Landfill and kept separate from putrescible waste. The disposal area(s) for asbestos material shall be

		defined by grid references on a site plan. Asbestos shall be offloaded at the foot of the excavation at the landfill site in such a manner as to avoid the generation of dust and the release of asbestos fibres . No works shall be carried out on the landfill that could lead to a release of asbestos fibres.

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

1.3.10 The Licence Holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.4 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.3.4: Cover requirements[1]

Waste Type	Material	Depth	Timescales
Special Waste Type 1	Type 1 Inert waste or soil	300 mm	As soon as practicable after deposit and prior to compaction
		1,000 mm	By the end of the working day in which the asbestos waste was deposited
Inert Waste Type 2		500 mm	As soon as practicable, but at least monthly after deposit. Plastic waste with the potential to become windblown shall be covered by a cage as soon as practicable after deposit.
Putrescible Waste (including biosolids)		150 mm	As soon as practicable, but at least monthly after deposit.
Inert Waste Type 1	No cover required		

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

1.3.11 The Licence Holder shall take measures to ensure that no wind-blown waste escapes from the Premises and that wind-blown waste is collected on at least a monthly basis and returned to the tipping area.

1.3.12 The Licence Holder shall manage the infiltration of treated wastewater such that:
(a) treated wastewater is evenly distributed over the infiltration area; and
(b) wastewater disposal is to be rotated between the infiltration areas on a regular basis to minimise soil erosion and surface ponding and allow the soils to dry between disposal; and

(c) sludges are removed on a periodic basis from the base of the pond to maintain the infiltration performance.

1.3.13 The Licence Holder shall manage the wastewater treatment vessels such that:
(a) overtopping of the vessels does not occur;
(b) stormwater runoff is prevented from entering the vessels; and
(c) there is no discernible seepage loss from the vessels.

1.3.14 The Licence Holder shall ensure that all vehicle washdown bays are sited on a hardstand area capable of containing contaminated water for:
(a) reuse on-site;
(b) treatment on-site; or
(c) removed off-site by a licensed controlled waste carrier to an approved liquid waste facility.

1.3.15 The Licence Holder shall ensure that the outside of containers leaving the premises for for the transportation of nickel concentrate are free of product.

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 air

2.2.1 The Licence Holder shall ensure that where waste is emitted to air from the emission points 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 air

Emission point reference	Emission Point	Emission point height (m)	Source
A1 – A6	Power station stack x 6	9	Diesel powered generators

2.3 Point source emissions to surface water

2.3.1 The Licence Holder shall ensure that where waste is emitted to surface water 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: Emission points to surface water		
Emission point reference and location on Map of emission points	**Description**	**Source including abatement**
Discharge Outlet (W1)	Dewater	Dewater discharge to Lake Hope (North) via an energy dissipation device that ensures minimal erosion and scouring impacts

2.3.2 The Licence Holder shall maintain the mine dewater settling pond(s) to maximise the removal of suspended solids from mine dewater prior to its discharge to Lake Hope (North).

2.4 Emissions to land

2.4.1 The Licence Holder shall ensure that where waste is emitted to land from the emission points in Table 2.4.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.4.1: Emissions to land		
Emission point reference and location on Map of emission points	**Description**	**Source including abatement**
L1 – L2 (Evaporation/ infiltration ponds)	Infiltration of treated wastewater	Treated wastewater pumped from C6 and/or C7 (sewage treatment ponds)

2.5 Fugitive emissions

2.5.1 The Licence Holder must ensure fugitive emissions are managed in accordance with the documents, or parts of documents, specified in Table 2.5.1.

Table 2.5.1: Management Plans		
Management Plan Reference	**Parts**	**Date of Document**
Lake Johnston Operations Environmental Management Plan	Section 4: Dust management	July 2012

3 Monitoring

3.1 General monitoring

3.1.1 The Licence Holder shall ensure that:
(a) all water samples are collected and preserved 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;
(d) all sediment sampling is conducted in accordance with AS/NZS 5667.12;
(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.

3.1.2 The Licence Holder shall ensure that:
(a) monthly monitoring is undertaken at least 15 days apart;
(b) quarterly monitoring is undertaken at least 45 days apart;
(c) six monthly monitoring is undertaken at least 5 months apart; and
(d) annual monitoring is undertaken at least 9 months apart.

3.1.3 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[2]
W1	Volumetric flow rate	L/s and m^3/day	Monthly
	pH[1]	N/A	Quarterly during operations
	Total Dissolved Solids	mg/L	
	Total Suspended Solids		
	Copper		
	Sodium		
	Chloride		
	Aluminium		
	Cadmium		
	Iron		
	Magnesium		Quarterly during
	Calcium		

Table 3.2.1: Monitoring of point source emissions to surface water			
Emission point reference	**Parameter**	**Units**	**Frequency[2]**
	Potassium	mg/L	operations
	Manganese		
	Nickel		
	Selenium		
	Arsenic		
	Lead		
	Mercury		
	Sulphate (SO_4)		
	Nitrate (NO_3)		
	Bicarbonate (HCO_3)		
	Chromium	mg/L	Annually during operations
	Cobalt		
	Zinc		

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

Note 2: Monitoring to take place when discharge occurs during the annual period.

3.3 Monitoring of inputs and outputs

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 inputs and outputs					
Input/ Output	**Monitoring point reference**	**Parameter**	**Units**	**Averaging period**	**Frequency**
Waste Inputs	None specified	Inert Waste Type 1, Inert Waste Type 2, Special Waste Type 1 and Putrescible Waste	m^3 (where no weighbridge is present)	N/A	Each load arriving at the Premises
Sewage -	Inflow meter	Volumetric flow	m^3/day	Monthly	Continuous

Inlet Flow	(M1)	rate (cumulative)			

3.4 Process monitoring

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: Process monitoring

Monitoring point reference and location	Process description	Parameter	Units	Averaging period	Frequency	Method
P1	Discharge from wastewater treatment plant to evaporation ponds	Volumetric flow rate (cumulative)	L/s or m^3/day	Monthly	Continuous	None specified
		Biochemical Oxygen Demand	mg/L	Spot sample	Six monthly	None specified
		Total Suspended Solids				
		Total Nitrogen				
		Total Phosphorus				

3.5 Ambient environmental quality monitoring

3.5.1 The Licence Holder shall undertake the sediment monitoring in Table 3.5.1 according to the specifications in that tables and record and investigate results that do not meet any limit specified.

Table 3.5.1: Monitoring of ambient sediment quality

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
Background: R1 Near-discharge: LHN CP2 (Figure 4) Downstream: S3 (Figure 5)	pH[1]	N/A	Spot sample	Annually in the same month each year
	Total Nitrogen	mg/kg		
	Total Phosphorus			
	Total soluble salts			
	Arsenic			
	Cadmium			
	Chromium			
	Copper			

Table 3.5.1: Monitoring of ambient sediment quality				
Monitoring point reference and location	**Parameter**	**Units**	**Averaging period**	**Frequency**
	Cobalt		Spot sample	Annually in the same month each year
	Lead			
	Manganese			
	Nickel			
	Selenium			
	Vanadium			
	Zinc			

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

3.5.2 The Licence Holder shall undertake the groundwater monitoring in Table 3.5.2 according to the specifications in that tables and record and investigate results that do not meet any limit specified.

Table 3.5.2: Monitoring of ambient groundwater quality					
Monitoring point reference and location	**Parameter**	**Limit**	**Units**	**Averaging period**	**Frequency**
TSMB01, TSMB02, TSMB05, TSMB06, TSMB08, TSMB09, TSMB10, TSMB11S, TSMB12S, TSMB13S, TSMB14S and TSMB15S.	SWL	>4.0	mbgl	Spot sample	Six-monthly
	pH[1]	N/A	N/A		
	Total Dissolved Solids		mg/L		
	Metals and metalloids				
	Aluminium				
	Cobalt				
	Chromium (as CrVI and total Cr)				
	Copper				
	Iron				
	Lead				

Table 3.5.2: Monitoring of ambient groundwater quality					
Monitoring point reference and location	**Parameter**	**Limit**	**Units**	**Averaging period**	**Frequency**
	Magnesium	N/A	mg/L	Spot sample	Six-monthly
	Manganese				
	Nickel				
	Selenium				
	Sodium				
	Zinc				
TSMB11D, TSMB12D, TSMB13D, TSMB14D, TSMB15D, TSMB16D and TSMB16S	SWL	>4.0	m bgl		Annually

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

3.5.3 In the event of standing water levels rising above 8.0 mbgl in monitoring bores listed in Table 3.5.2 the Licence Holder shall increase standing water level monitoring frequencies to monthly in all bores in which the standing water level exceeded 8.0 mbgl, until the standing waster level is greater than 8.0 mblg in those bores.

3.5.4 The Licence Holder shall undertake monitoring at Lake Hope North for areas historically inundated by mine dewater discharge as stated in Table 3.5.4.

Table 3.5.4: Monitoring at Lake Hope North		
Monitoring Location	**Parameters**	**Frequency**
Water level Six marker stakes at strategic locations in Lake Hope North approximately 20 metres up-gradient of areas historically inundated by mine water discharge.	Record the water level at Lake Hope	Quarterly during operations
Vegetation Two on the northern shore of the discharge lagoon; and Two on the western shoreline of greater Lake Hope North.	Riparian and native vegetation Photograph and record the presence and condition of key vegetation features within the zone of influence.	

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 ensure that:
(a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
(b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

4.1.3 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.

4.1.4 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 by 30 September after the end of each 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[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
-	Throughputs for each licensed category	
Table 1.3.2	Evidence of infrastructure monitoring	

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	**Parameter**	**Format or form[1]**
Table 1.3.3	Type and quantity of waste disposed	
1.3.5	Summary of any freeboard limit exceedances and any action taken.	
Table 3.2.1	Monitoring of point source emissions to surface waters	
3.2.1	Annual average contaminant loads in kilograms per hectare per year (kg/ha/yr) for analytes listed in Table 3.2.1.	
3.2.1	A salt balance of impacted and non-impacted areas of Lake Hope North using dewater discharge volumes and water quality data collected as part of condition 3.2.1.	
Table 3.3.1	Monitoring of inputs and outputs	
Table 3.4.1	Process monitoring data	
Table 3.5.1	Monitoring of sediments	
Table 3.5.2, condition 3.8.3	Monitoring of ambient groundwater	
3.5.4	Inundation monitoring Lake Hope North, Monitoring vegetation health	
4.1.3	Compliance	Annual Audit Compliance Report (AACR). Form available online on DWER website from: www.der.wa.gov.au
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.2.2 The Licence Holder shall ensure that the Annual Environmental Report also contains:

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

(b) discussion of the potential environmental impacts from dewatering over the annual period based on monitoring data and visual observations.

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 CEOs 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 requirement[1]**	**Format or form[2]**
2.1.1	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
3.1.5	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

Schedule 1: Maps

Premises map

The Premises is shown in the map below. The thick purple line depicts the Premises boundary. The emission point defined in Table 2.2.1 is shown below.

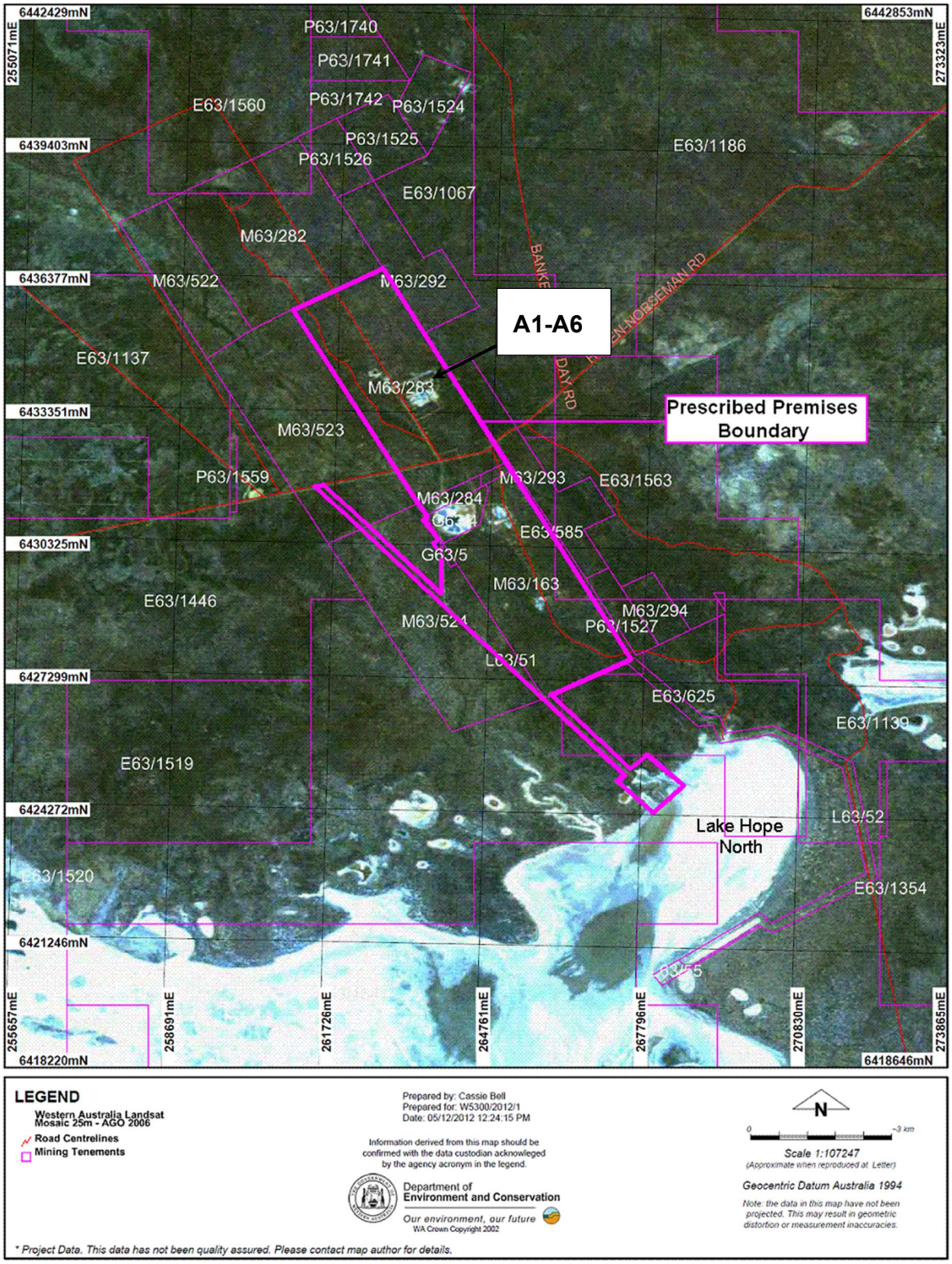

Figure Premises map

Map of emission points and monitoring locations

The locations of the emission points defined in Table 2.3.1 are shown below. The locations of the monitoring points defined in Table 3.8.1 shown below.

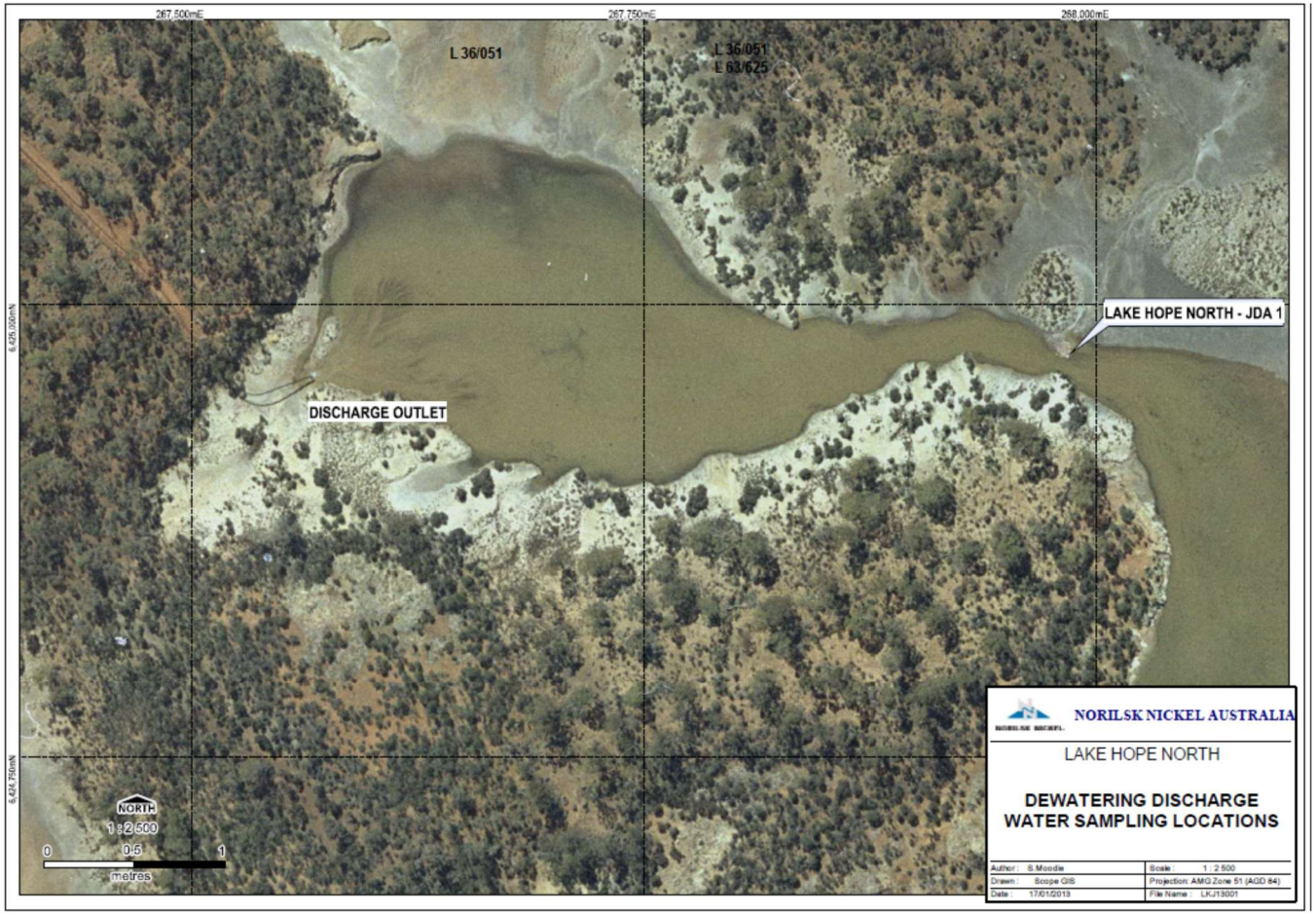

Figure 1 Emission and monitoring points defined in Table 2.3.1 and Table 3.8.1.

Map of emission points

The location of the emission points and containment infrastructure defined in Tables 1.3.1 and 2.5.1 is shown below.

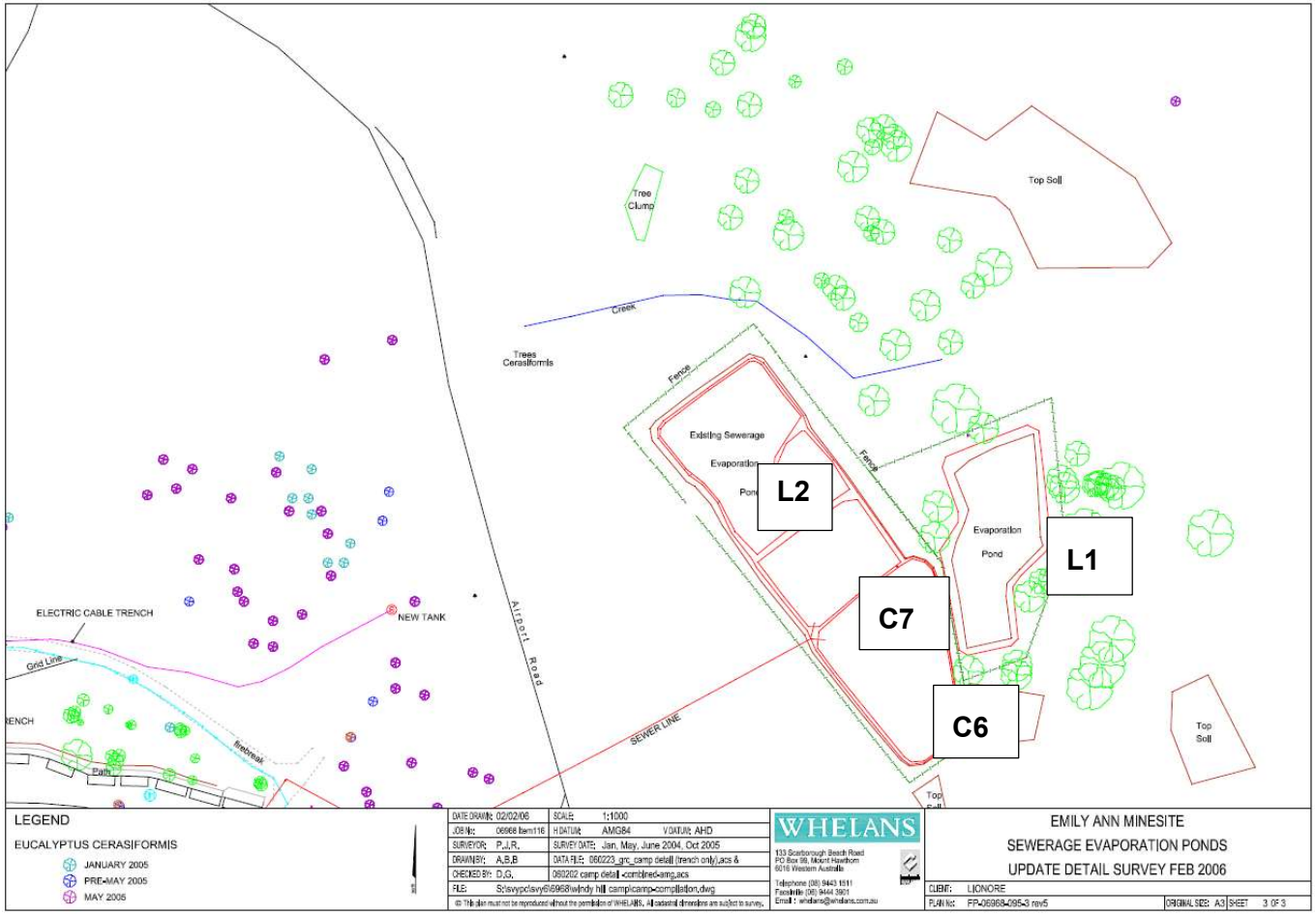

Figure 2 Emission points and containment infrastructure defined in Tables 1.3.1 and 2.5.1

Map of monitoring locations

The locations of the monitoring points defined in Table 3.8.2; and containment infrastructure defined in Table 1.3.1 are shown below.

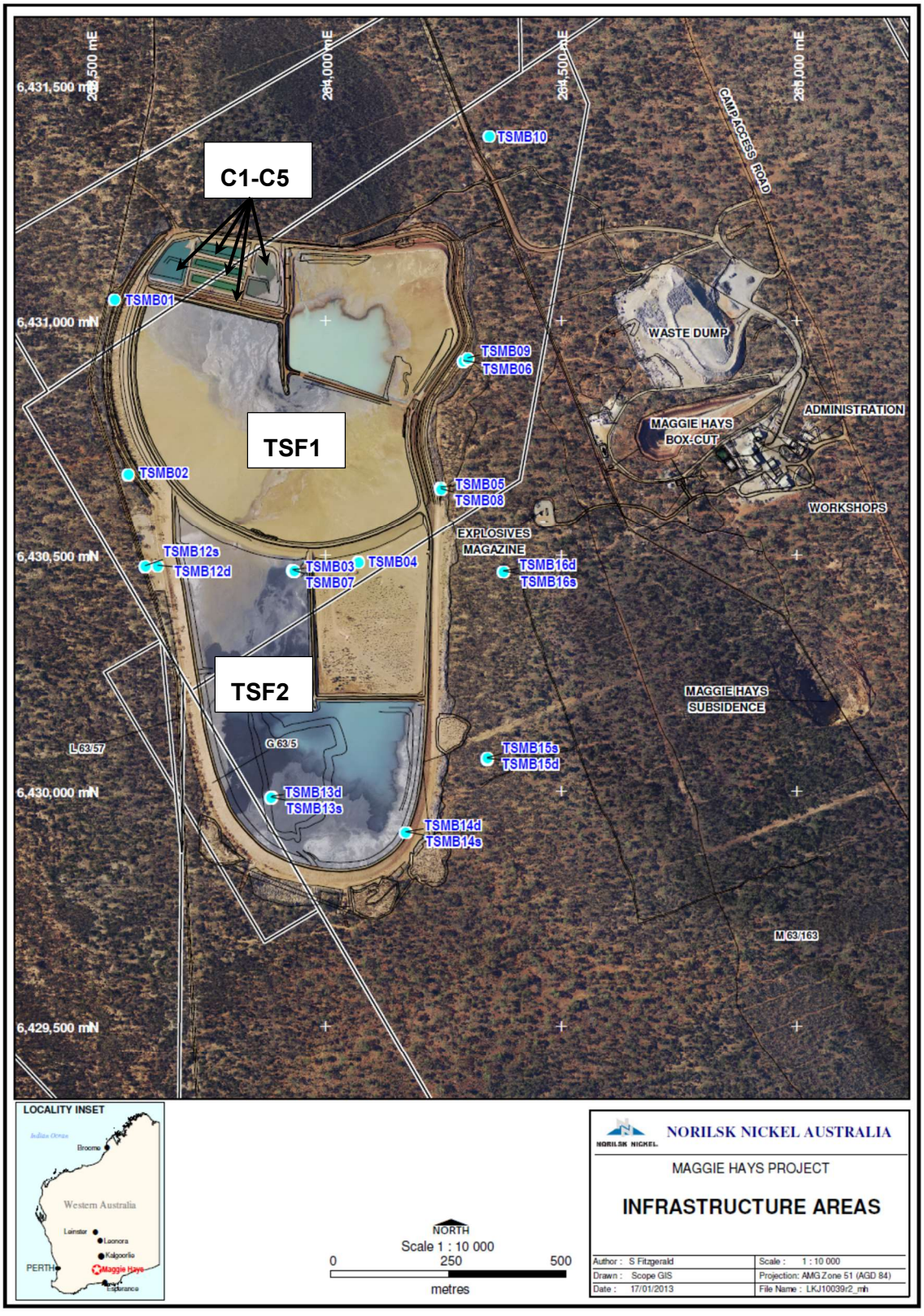

Figure 3 Map of monitoring locations defined in Table 3.8.2 and containment infrastructure defined in Table 1.3.1

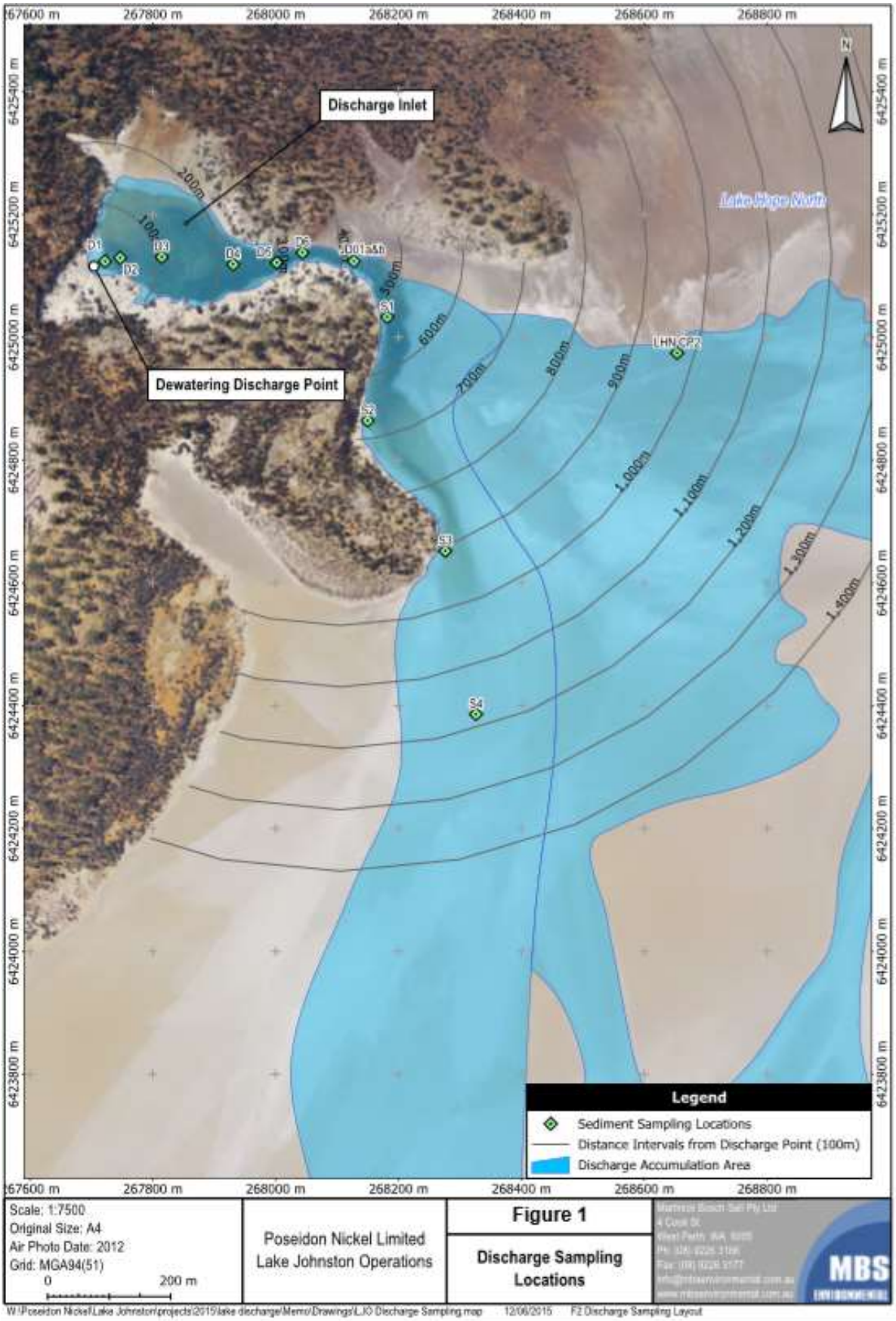

Figure 4 Map of Monitoring locations defined in Table 3.5.1

Figure 5 Map of monitoring locations defined in Table 3.5.1

Map of containment infrastructure

The locations of the containment infrastructure defined in Table 1.3.1 are shown below.

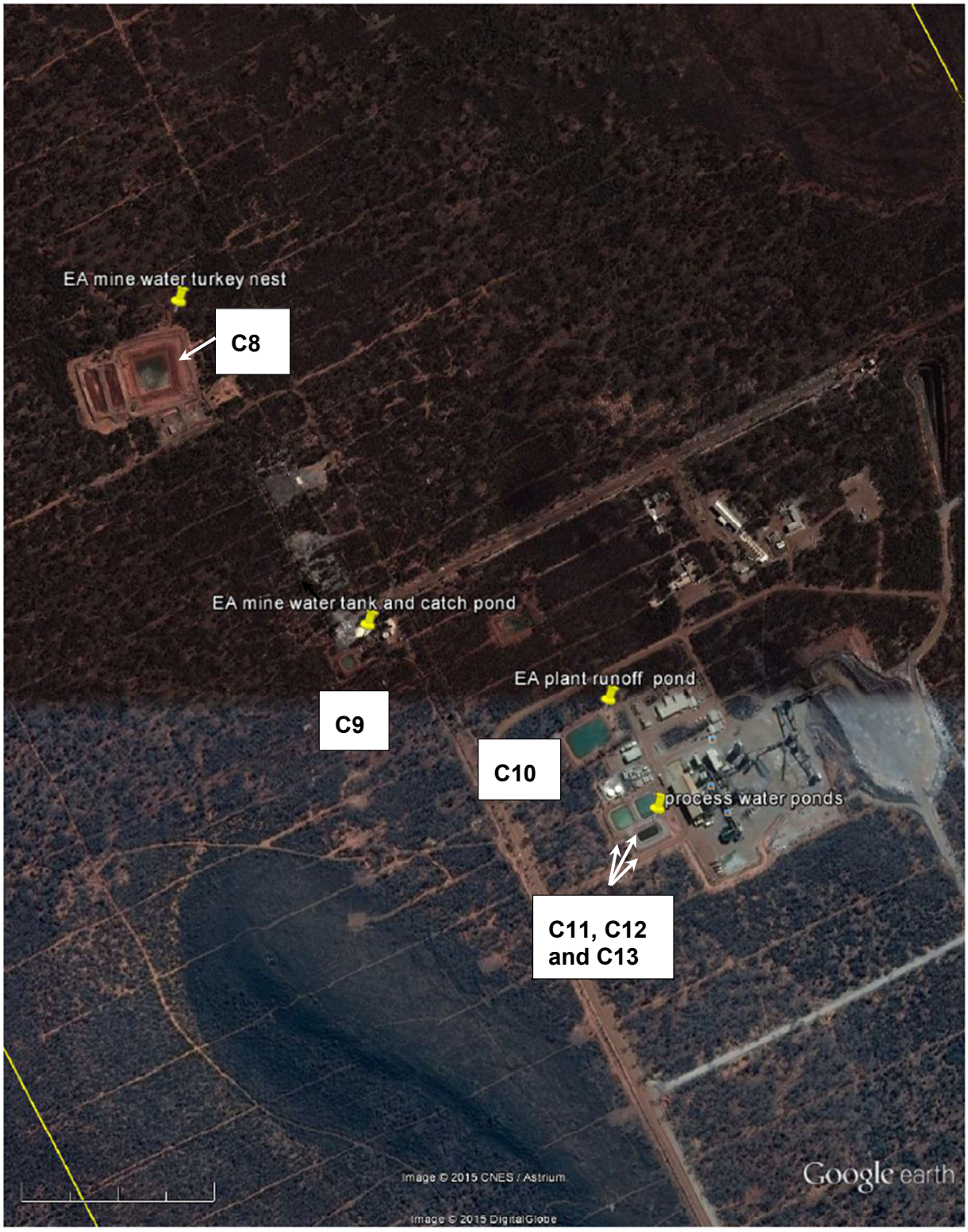

Figure 6 Containment infrastructure as defined in Table 1.3.1

Landfill Area Map

The location of the landfilling areas defined in Tables 1.3.3 and 1.3.4 is shown below.

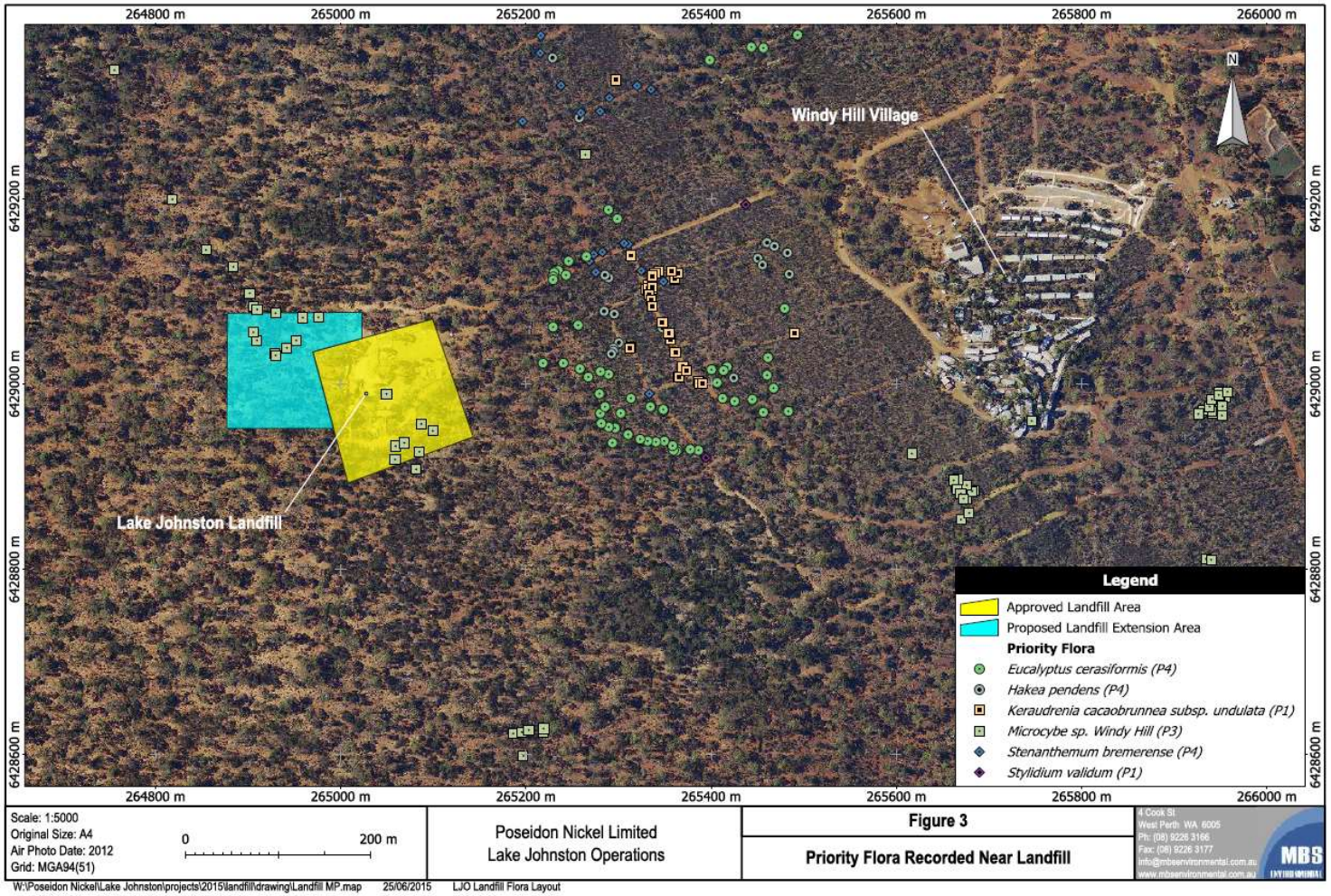

Figure 7 Landfill areas as defined in Tables 1.3.3 and 1.3.4

Landfill Area Map

The location of the landfilling areas defined in Tables 1.3.3 and 1.3.4 is shown below.

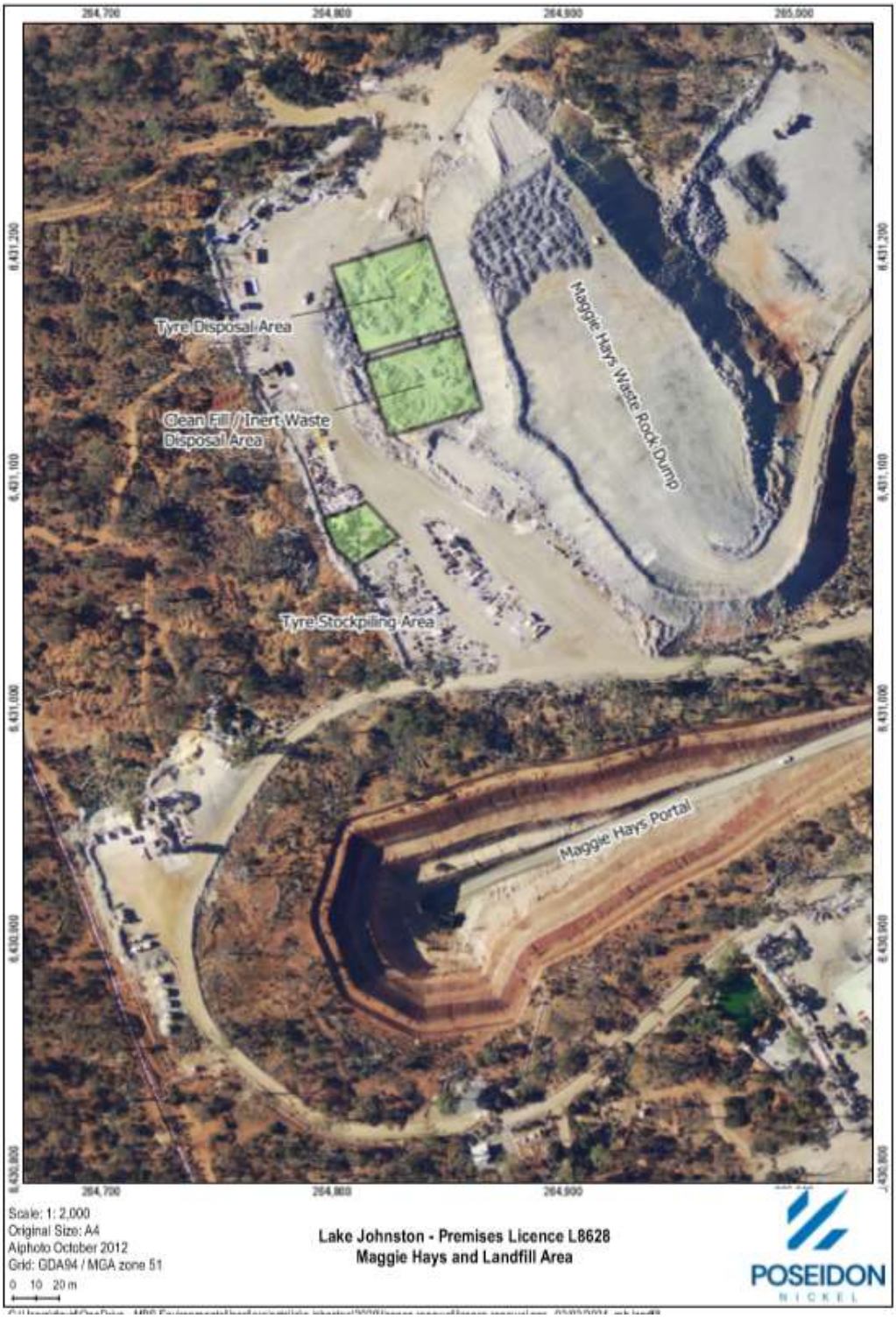

Figure 8 Landfill areas as defined in Tables 1.3.3 and 1.3.4

Schedule 2: Notification form

Licence: L8628/2012/1 Licence Holder: Poseidon Nickel Limited

Form: N1 Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

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 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 Poseidon Nickel Limited	
Date	