Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L7404/1999/9
Licence holder	Australian Nickel Investments Pty Ltd
ACN	119 599 323
Registered business address	Level 2, 2 Kings Park Road WEST PERTH WA 6005
DWER file number	DER2015/002781-1
Duration	30/07/2013 to 30/07/2040
Date of amendment	24/05/2021
Premises details	Cosmos Nickel Operations Goldfields Highway SIR SAMUEL WA 6437 Legal description - Mining tenements L36/118, L36/159, L36/171, L36/172, M36/127, M36/212, M36/365, M36/371, M36/375, M36/376, M36/377, M36/441, M36/659 and part of M36/180 and M36/349.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production capacity
Category 6: Mine dewatering	3,000,000,000 tonnes per annual period
Category 12: Screening, etc. of material	100,000 tonnes per annual period
Category 85: Sewage facility	70 cubic metres per day
Category 89: Putrescible landfill	2,200 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 24 May 2021, by:

Carmen Standring
Digitally signed by Carmen Standring
Date: 2021.05.24 16:47:42 +08'00'

A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Reference number	Date	Summary of changes
L7404/1999/8	24/07/2008	Licence reissued for 5 years. Issued to Sir Samuel Mines N.L.
W4521/2009/1	02/06/2009	Works Approval to construct pipeline to allow for the short-term (6-9 months) disposal of dewatering effluent into the 'Bellevue Pits'. Occupier changed to Xstrata Nickel Australasia Operations Pty Ltd.
L7404/1999/8	12/11/2009	Licence amendment to authorise the 'Bellevue Pits' for disposal of dewater effluent. Premises boundary expanded to include tenement M36/25 on which the Bellevue Pits are located.
W4785/2010/1	09/12/2010	Works Approval for construction of a new industrial (inert) landfill facility on the Prospero Waste Rock Dump (WRD) No.2.
W4955/2011/1	01/07/2011	Works Approval for an upgrade of the worker's camp wastewater treatment plant.
L7404/1999/8	08/08/2011	Licence amendment to add the site's registered landfills (R1436 & R2070) onto the licence. Category 64 added.
L7404/1999/8	28/11/2011	Licence amendment to require the submission of a management plan regarding seepage from the TSF.
W5042/2011/1	25/11/2011	Works Approval for construction of an additional water management pond for storage of dewater from Cosmos dewatering operations.
W4853/2010/1	25/02/2011	Works Approval for encapsulation of evaporation pond salt sediment within the Cosmos underground WRD.
W4878/2011/1	12/05/2011	Works Approval for an upgrade of the Cosmos Nickel Concentrator (CNC) to 460,000 tpa capacity.
W5111/2011/1	12/04/2012	Works Approval for expansion of the TSF (TSF3) following the CNC upgrade.
W5294/2012/1	21/01/2013	Works Approval to upgrade the CNC to 750,000 tpa capacity.
L7404/1999/8	14/02/2013	Licence amendment following compliance inspection. Changes made to update licence conditions. Category 64 changed to 89.
L7404/1999/9	25/07/2013	Licence reissued for 3 years.
W5232/2012/1	22/10/2015	Works Approval for construction of a new industrial (inert) landfill facility on the Cosmos underground WRD.
L7404/1999/9	26/11/2015	Licence transferred to Australian Nickel Investments Pty Ltd. Licence format updated. Changes made to conditions to reflect the non-operational status. Tenements M36/24 and M36/25 removed from the premises description as these are not owned by Western Areas. Expiry extended to align with tenement M36/371.

L7404/1999/9	30/06/2017	Licence amendment to authorise recommencement of mine dewatering operations. Licence format updated.
L7404/1999/9	28/09/2017	Amendment Notice 1 – construction and operation of WMP9.
L7404/1999/9	21/11/2017	Amendment Notice 2 – temporary reduction in groundwater monitoring requirements during Stage 1 dewatering.
L7404/1999/9	13/09/2018	Amendment Notice 3 – construction of new dewatering pipeline from Cosmos to Orleans open pits.
L7404/1999/9	05/12/2018	Licence amendment to add WMP8 as an authorised discharge infrastructure and to consolidate all amendment notices.
L7404/1999/9	14/01/2019	Licence amendment to add WMP9 as an authorised discharge infrastructure.
L7404/1999/9	15/01/2020	Licence amendment to extend the licence duration by 20 years and include the provision for use of mine dewatering water for dust suppression.
L7404/1999/9	5/01/2021	Licence amended to re-instate categories 85 and 89 as prescribed activity.
L7404/1999/9	24/5/2021	Licence amended to include category 12 as a prescribed activity. Premises map amended to include crushing and screening areas.

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 EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

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

Infrastructure and equipment

1. The licence holder must ensure that the site infrastructure and equipment listed in Table 1 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 1.

Table 1: Infrastructure and equipment controls table

	Site infrastructure and equipment	Description and operational requirements
	Discharge infrastructure	
1	Orleans Mine Pit	• An abandoned mine pit located 2.7 km south of the Cosmos pit, that was previously used to dispose of mine dewatering water from the Prospero pit; • A minimum 2.0 m vertical freeboard must be maintained below the lowest crest level at all times; • Must be inspected weekly (whilst operating) for freeboard capacity and a written log maintained with each inspection signed off by the person who conducted the inspection;
2	Water Management Ponds 1 – 5	• A series of five ponds, linked by a common wall and trend north-south with gradient running from WMP1 to WMP5 (operating as a cascading system); • Embankments are lined with HDPE, floors are unlined to promote seepage to groundwater; • A minimum freeboard (total) of 0.5 m must be maintained at all times at the final pond (WMP5); • Must be inspected daily (whilst operating) for freeboard capacity and integrity and a written log maintained with each inspection signed off by the person who conducted the inspection;
3	Water Management Ponds 6 – 7	• Two separate ponds that share a common wall to manage the natural gradient; • Embankments are lined with HDPE, floors are unlined to promote seepage to groundwater; • A minimum freeboard (total) of 0.5 m must be maintained at all times at the final pond (WMP7); • Must be inspected daily (whilst operating) for freeboard capacity and integrity and a written log maintained with each inspection signed off by the person who conducted the inspection;
4	Water Management Pond 8	• A large pond consisting of 3 ‘cells’ located north of WMP6 & WMP7, which share a common wall; • Embankments are lined with HDPE, floors are unlined to promote seepage to groundwater; • A minimum freeboard (total) of 0.5 m must be maintained at all times in the final cell (‘Cell C’); • Must be inspected daily (whilst operation) for freeboard capacity and integrity and a written log maintained with each inspection signed off by the person who conducted the inspection;
5	Water Management Pond 9	• A large pond consisting of 3 ‘cells’ located south of the existing WMPs 1 – 5; • Embankments are lined with HDPE, floors are unlined to promote seepage to groundwater; • A minimum freeboard (total) of 0.5 m must be maintained at all times in the final cell (‘Cell C’); • Must be inspected daily (whilst operating) for freeboard capacity and

	Site infrastructure and equipment	Description and operational requirements
	Discharge infrastructure	
		integrity and a written log maintained with each inspection signed off by the person who conducted the inspection;
6	Dewatering discharge pipeline network	• Equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; • Pipelines located in bunded trenches with sumps constructed at low points to contain spills and leaks; • Must be inspected daily whilst operating (monthly when not operating) for visual integrity and leak assessment and a written log maintained with each inspection signed off by the person who conducted the inspection;
7	Wastewater treatment plant	• All storage infrastructure and treatment tanks, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks or defects; • Stormwater must not be able to enter any liquid waste storage or treatment tanks, transfer pipelines and conveyance infrastructure;
8	Landfill cells[1]	• Cells must be enclosed by earthen bunds; • Surface water must be directed away from the cells; • Must have sufficient cover material as follows: ▪ Putrescible waste: must be covered fortnightly with sufficient quantities of Type 1 inert waste, clean fill or other appropriate cover material to prevent the spread of fire and harboring of disease vectors ▪ Inert Waste type 1: no cover required; ▪ Inert Waste Type 2 (tyres): To be covered by the end of the working day in which the waste was deposited with sufficient quantities of Type 1 inert waste or clean fill to prevent the spread of fire and harboring of disease vectors; ▪ Special Waste Type 1 (Asbestos waste): To be disposed of into a designated asbestos-only area within the Class II landfill. Not to be deposited within 2m of the final tipping surface of the landfill. All asbestos to be double bagged and a record kept identifying the location and volume disposed of.
9	Irrigation fields	• Discharge to any of the two irrigation areas will only occur when groundwater separation is greater than two metres below ground level in that irrigation area; • Irrigation must be onto live, healthy plants distributed over the entire irrigation area; • Irrigation of treated wastewater does not occur during rainfall events or when there is surface water on the irrigated area; and • Treated wastewater is evenly distributed over the irrigation area.
10	Crushing and screening plant	• Maintained as per manufacturer's specifications.
	Containment infrastructure	
11	Waste Dump Dam	• A fully lined (HDPE) pond located on the waste dump; • A minimum freeboard (total) of 0.5 m must be maintained at all times; • Must be inspected daily (whilst operating) for freeboard capacity and integrity and a written log maintained with each inspection signed off by the person who conducted the inspection.

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

2. The licence holder must rectify any leaks and discharges to the environment identified as a result of inspections of the dewatering discharge pipeline network conducted in accordance with Table 1.

3. The licence holder must undertake an annual water balance for the premises for the preceding annual period that shall include, but not be limited to:

(a) site rainfall;
(b) evaporation rate, determined using local factors, i.e. site-specific measurements of wind speed, temperature, solar radiation and relative humidity;
(c) volume of mine water abstracted from dewatering required by condition 8;
(d) volume of mine water discharged to each location specified in Table 1; and
(e) estimated amount of seepage from the infrastructure specified in Table 1.

Waste Acceptance

4. The licence holder must only dispose of waste generated at the Premises which meets the corresponding acceptance specification set out in Table 2.

Table 1: Waste acceptance

Waste type	Volume
Inert Waste	2,200 tonnes per annual period in total
Putrescible waste	

Monitoring (general)

5. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(c) 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.

6. The licence holder must ensure that:

(a) weekly monitoring is undertaken at least 5 days apart;
(b) monthly monitoring is undertaken at least 15 days apart;
(c) quarterly monitoring is undertaken at least 45 days apart;
(d) 6-monthly monitoring is undertaken at least 4 months apart; and
(e) annual monitoring is undertaken at least 9 months apart.

7. 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.

Emissions monitoring

8. The licence holder must undertake monitoring of dewatering discharge at the locations and for the parameters listed in Table 3, in the corresponding units, over the averaging period and at the frequency set out in Table 3.

Table 3: Mine dewatering monitoring

Monitoring point reference	Parameter	Units	Averaging period	Frequency
In-pit sumps and underground discharge from the Cosmos Pit	Discharge volume	m^3	Monthly	Continuous
	Electrical conductivity @ 25°C	µS/cm	Spot sample	Quarterly
	pH	-		Annual
	Major ions: K^+, Na^+, Ca^{2+}, Mg^{2+}, Cl^-, HCO_3^-, SO_4^{2-}, total dissolved solids	mg/L		
Orleans Pit, Waste Dump Dam, WMP1 – WMP5, WMP6 – WMP7, WMP8, WMP9	Discharge volume	m^3	Monthly	Continuous
	Electrical conductivity @ 25°C	µS/cm	Spot sample	Quarterly
	pH	-		
	Metals and metalloids: As, Cd, Cr, Co, Cu, Hg, Pb, Ni, Se, Sb, Zn	mg/L		

9. The licence holder must undertake monitoring of irrigated treated wastewater at the frequency and for the parameters listed in Table 4.

Table 4: Monitoring of Treated Wastewater to Irrigation

Monitoring point and reference location	Parameter	Units	Sampling Frequency	Averaging period
Outlet of WWTP (*Outflow Meter* as shown in Figure 3, Schedule 1)	Total Nitrogen	mg/L	Quarterly	Spot sample, laboratory determined
	Biochemical Oxygen Demand	mg/L	Quarterly	
	Total Suspended Solids	mg/L	Quarterly	
	Total Phosphorus	mg/L	Quarterly	
	pH	-	Quarterly	In-field spot sample
Irrigation spray field flowmeters (CNO-WW-SF01 and CNO-WW-SF02 as shown in Figure 3, Schedule 1)	Total Volume	L	Constant	

Ambient environmental monitoring

10. The licence holder must undertake monitoring of ambient groundwater at the locations and for the parameters listed in Table 5, in the corresponding units, over the averaging period and at the frequency set out in Table 5.

Table 5: Groundwater monitoring

Monitoring point and reference location	Parameter	Groundwater level action criteria	Units	Averaging period	Monitoring frequency (during active dewatering)
MB05, MB06, MB07, MB08, MB13, MB14, MB15, MB16, MB20, MB21, MB23, MB24, MB25, MB27, MB29, MB30,	Standing Water Level	≤6	mbgl	In-field spot sample	Weekly
	pH	-	-		Annually
	Electrical conductivity @ 25°C	-	µS/cm	Spot sample, laboratory determined	
	Metals and metalloids: As, Cd, Cr, Co, Cu, Hg,	-	mg/L		

Monitoring point and reference location	Parameter	Groundwater level action criteria	Units	Averaging period	Monitoring frequency (during active dewatering)
MB31, MB33 (mounding impacts)	Pb, Ni, Se, Sb, Zn				
MB09, MB10, MB11, MB17, MB18, MB22, MB26, MB28, MB32, MB34 (water quality impacts)	Standing Water Level	≤6	mbgl	In-field spot sample	Monthly
	pH	-	-		Quarterly
	Electrical conductivity @ 25°C	-	µS/cm	Spot sample, laboratory determined	
	Metals and metalloids: As, Cd, Cr, Co, Cu, Hg, Pb, Ni, Se, Sb, Zn	-	mg/L		
	CN free, WAD CN, CN total	-			

Groundwater level action criteria

11. The licence holder must ensure that if monitoring undertaken in accordance with condition 10 indicates levels exceeding the groundwater action criteria specified in Table 5:

(a) an investigation is conducted to determine the likely cause of the exceedance and assess the available options to mitigate the impact;
(b) the groundwater flow model is reviewed to identify remedial action(s) to lower the standing water level below the groundwater action criteria, including a revision of the groundwater recovery bore extraction rates;
(c) the remedial action(s) determined by condition 11(b) are implemented; and
(d) the CEO is notified within 5 working days of the licence holder becoming aware of the exceedance.

12. Should the remedial action(s) determined through condition 11(b) be ineffective, the licence holder must suspend all discharges to the discharge location until alternative solution(s) can be found and implemented.

13. The licence holder must operate the groundwater recovery network to ensure mounding of the groundwater table does not exceed the limit specified in Table 6 at the corresponding monitoring locations specified in that table.

Table 6: Groundwater mounding limit

Monitoring point reference and location	Parameter	Groundwater level limit	Units	Averaging period
MB05, MB06, MB07, MB08, MB09, MB10, MB11, MB13, MB14, MB15, MB16, MB17, MB18, MB20, MB21, MB22, MB23, MB24, MB25, MB26, MB27, MB28, MB29, MB30, MB31, MB32, MB33, MB34	Standing water level	≤4	mbgl	Spot sample

Native vegetation assessment

14. The licence holder must undertake an annual assessment of the health and condition of native vegetation within the mounding radius of influence of the water management ponds (WMPs) and within at least one comparable control (reference) site.

15. The assessment required by condition 14 must be conducted:

    (a) by a qualified botanist; and
    (b) during the August to November (inclusive) period in each year, including a baseline survey to be carried out before disposal of water to the WMPs commences.

16. The assessment required by condition 14 must include, but not be limited to:

    (a) photographing and recording the presence and condition of key vegetation features within the mounding radius of influence of the WMPs and within the control (reference) site(s);
    (b) an assessment of the species representation and diversity, vegetation density, percent foliage cover, and health of the native vegetation within the mounding zone of influence of the WMPs and within the control (reference) site(s); and
    (c) a comparison of the assessment results against the control (reference) site(s) and any previous assessments, identifying whether any deterioration in the presence and/or quality of vegetation has taken place and the likely causes of any such deterioration.

Dust suppression

17. The licence holder must ensure that any water used for dust suppression on the Premises is used in a manner that does not cause loss of health and condition of native vegetation.

Records and reporting

18. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

    (a) the calculation of fees payable in respect of this licence;
    (b) any maintenance of infrastructure that is performed in the course of complying with condition 1 of this licence;
    (c) monitoring programmes undertaken in accordance with conditions 8 to 10 of this licence; and
    (d) complaints received under condition 20 of this licence.

19. The books specified under condition 18 must:

    (a) be legible;
    (b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;
    (c) be retained by the licence holder for the duration of the licence; and
    (d) be available to be produced to an inspector or the CEO as required.

20. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

    (a) the name and contact details of the complainant, (if provided);
    (b) the time and date of the complaint;
    (c) the complete details of the complaint and any other concerns or other issues raised; and
    (d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

21. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and
(b) prepare and submit to the CEO, by no later than 1 March in each year, an Annual Audit Compliance Report in the approved form.

Annual environmental report

22. The licence holder must submit to the CEO, no later than 1 March in each year, an annual environmental report which includes, but is not limited to:

(a) details of the calculation of fees payable in respect of this licence;
(b) a summary of maintenance of infrastructure performed in the course of complying with condition 1;
(c) the annual water balance required by condition 3;
(d) monitoring reports required by conditions 8 to 10 for the preceding annual period;
(e) a summary of groundwater action criteria exceedances for the preceding annual period, including the investigation results required by conditions 11(a) and 11(b) the remedial action(s) implemented under condition 11(c);
(f) the annual native vegetation assessment required by condition 14;
(g) a summary of any complaints received and management actions taken for each complaint; and
(h) a summary of any environmental incidents and any action(s) taken.

23. The licence holder must ensure the report required by condition 22 includes an appraisal and trend analysis of the results against any baseline data and previous monitoring results.

Definitions

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

Table 7: Definitions

Term	Definition
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website)
ACN	Australian Company Number
AEP	Annual Exceedance Probability – refers to the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year
AHD	Australian Height Datum
annual period	means a 12 month period commencing from 1 January until 31 December in the same year
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
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
CEO	means Chief Executive Officer of the Department. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under s.62 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the 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	means the *Environmental Protection Act 1986* (WA)
EP Regulations	means the *Environmental Protection Regulations 1987* (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point
HDPE	High Density Polyethylene
Inert Waste Type 1 and Type 2	as defined in the Landfill Definitions
Landfill Definitions	*Landfill Waste Classification and Waste Definitions 1996* (as amended from time to time)
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

mbgl	metres below ground level, with 'ground level' meaning the original (undisturbed) ground level at the particular location
NATA	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
Premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the map in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
Putrescible waste	as defined in the Landfill Definitions
qualified botanist	means a person who holds a tertiary qualification in environmental science (or equivalent), and has at least 5 years' experience in botanical survey in the Murchison bioregion
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
radius of influence	means the maximum extent at which groundwater mounding can be detected
six monthly; 6-monthly	means the two inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year
spot sample	means a discrete sample representative of the time and place at which the sample is taken
Water Management Ponds (WMPs)	means the existing 7 water management ponds on the Premises, WMP1 – WMP7, and the recently constructed WMPs 8 & 9

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

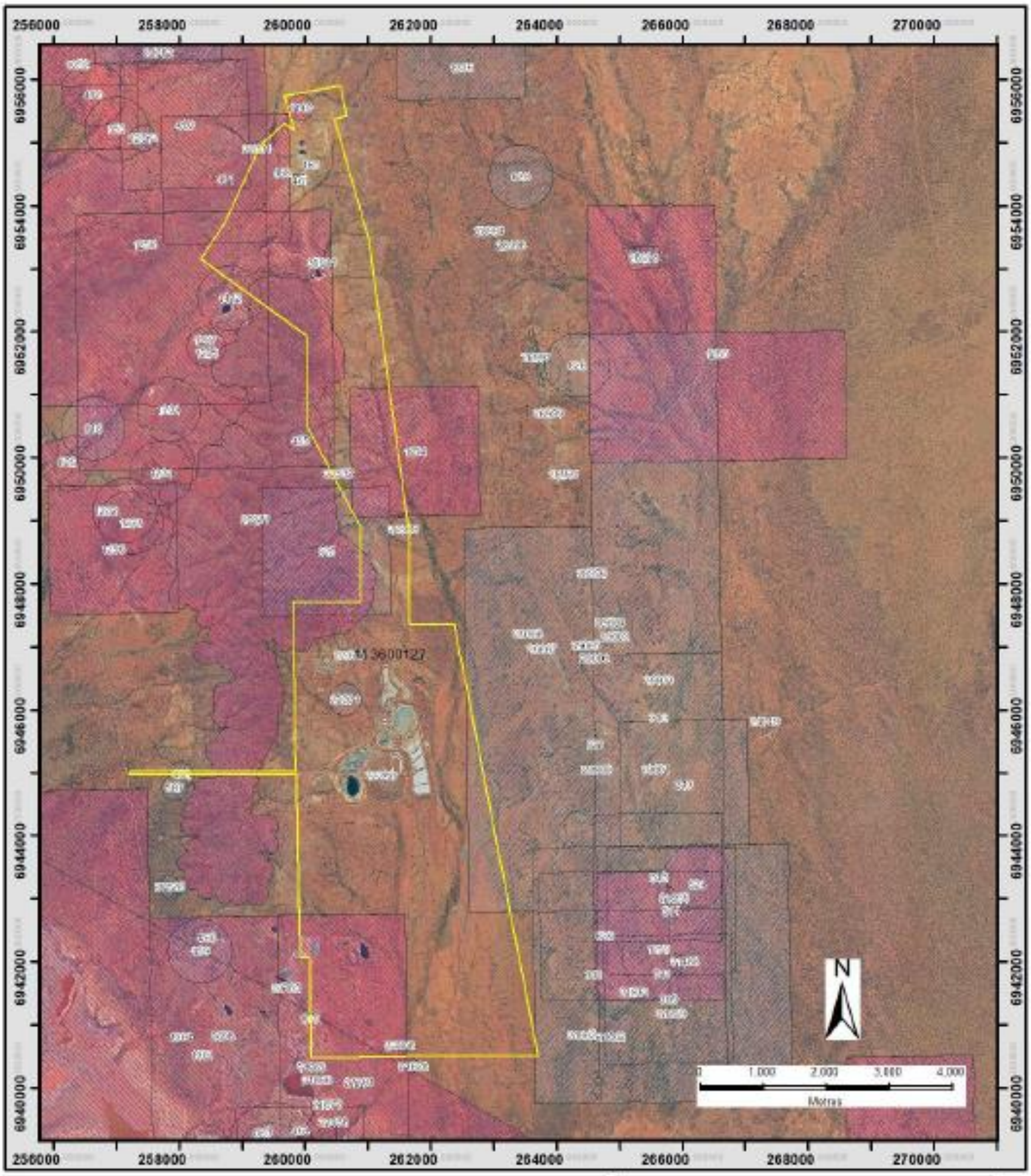

Figure 1: Map of the boundary of the prescribed premises

Premises dewatering infrastructure and monitoring locations

The key dewatering infrastructure referenced in Table 1, and the groundwater monitoring/recovery locations specified in Table 3, are shown in the map below (Figure 2).

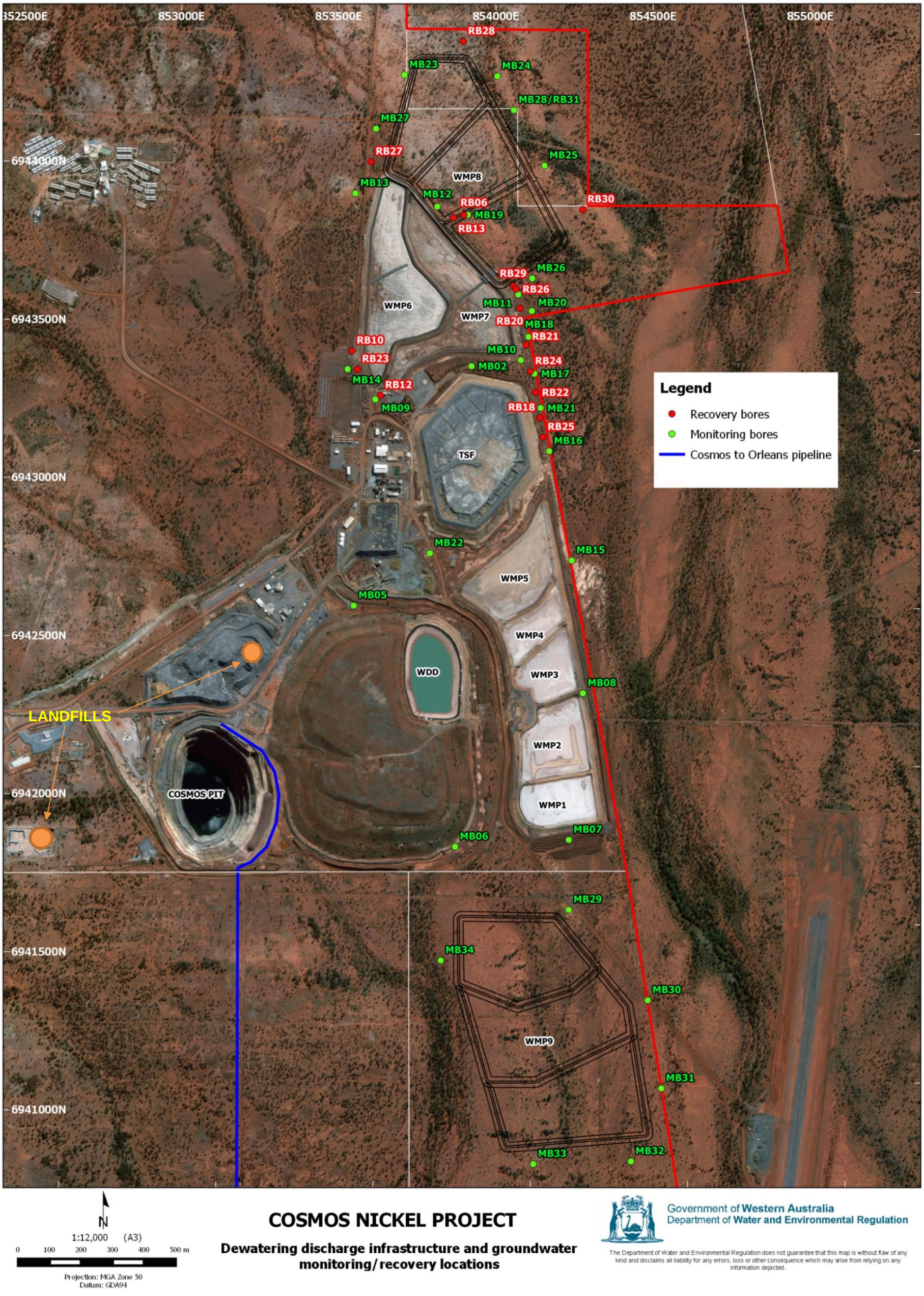

Figure 2: Dewatering infrastructure, groundwater and landfill locations

Wastewater treatment plant and irrigation spray field monitoring locations

The monitoring points for the wastewater treatment plant outflow meter and irrigation spray field flow meters are shown in the map below (Figure 3).

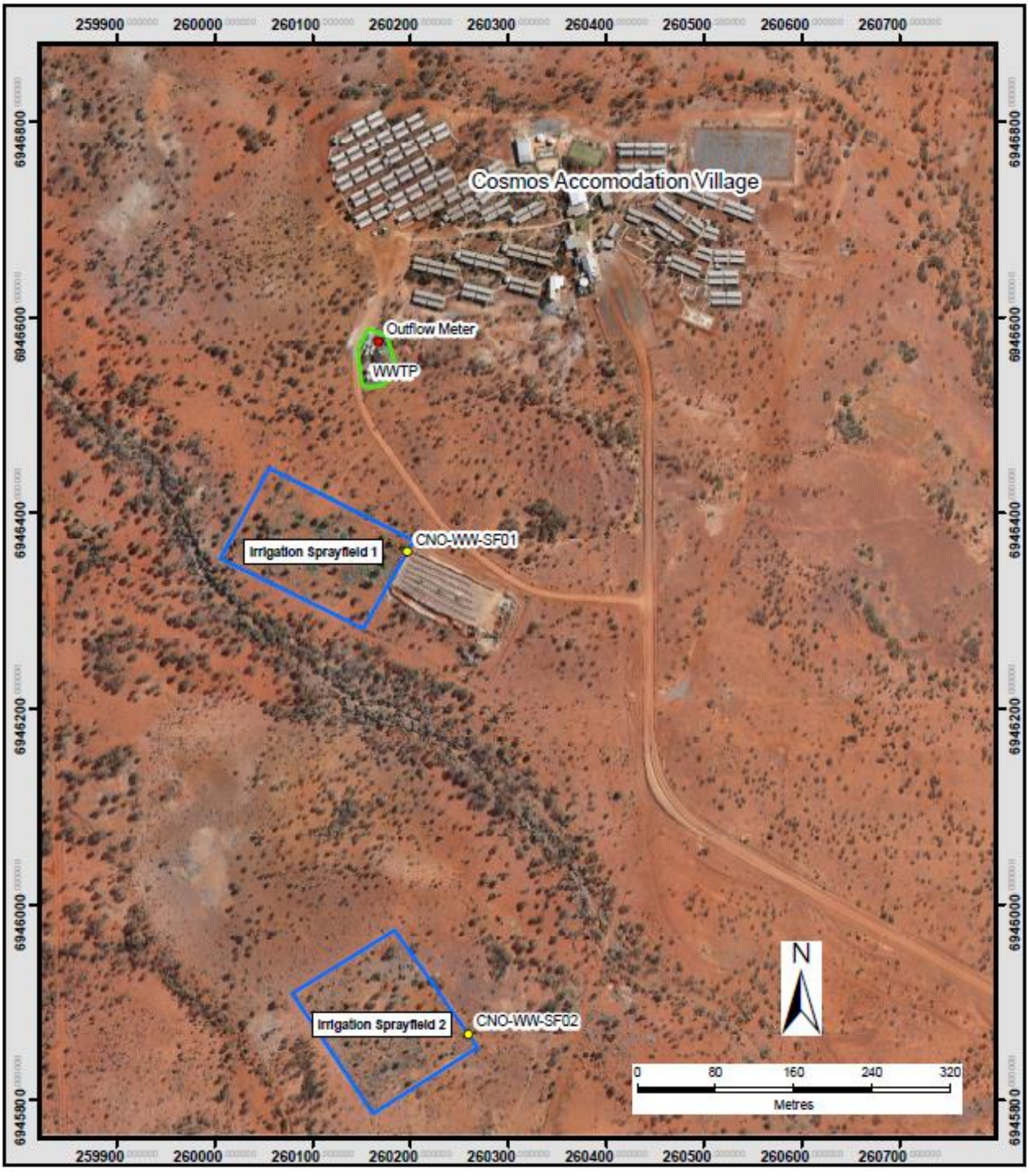

Figure 3: WWTP and irrigation monitoring points