

Permit

Environmental Protection Act 1994

Environmental authority EA0002628

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EA0002628

Environmental authority takes effect on the day of the approval.

The anniversary day of this environmental authority will be the same day each year as the take effect day of this environmental authority. Payment of the annual fee will be due each year on this day.

Environmental authority holder

Name	Registered address
THE AUSTRALIAN INSTITUTE OF MARINE SCIENCE	1526 Cape Cleveland Rd, CAPE CLEVELAND, QLD 4810 Australia

Environmentally relevant activity and location details

Environmentally relevant activity	Location
ERA 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	LOT 35/EP1474

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise- one the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.



Signature

1 December 2020

Date

Liz Clarke
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Utilities and Government Organisations
Assessment
Department of Environment and Science

Phone: 1300 130 372
Email: palm@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Other permits required

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Natural Resources, Mines and Energy (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Science to ensure that you have the most current version of the environmental authority relating to this site.

Conditions of environmental authority

Environmentally relevant activity	Location
ERA 63 - Sewage Treatment, 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100 but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	LOT 35/EP1474

The environmentally relevant activity conducted at the location as described above must be conducted in accordance with the following site-specific conditions of the approval.

Agency interest: General	
Condition number	Condition
G1	Activities conducted under this environmental authority must be conducted in accordance with the following: 1. Inflows into the sewage treatment plant must not exceed the daily peak design capacity of 5.6 L/s.
G2	All reasonable and practicable measures must be taken to prevent or minimise any environmental harm caused by the activities .
G3	Any contravention of a condition of this environmental authority must be reported to the administering authority as soon as practicable, but no more than within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions taken.
G4	For any contravention of a condition of this environmental authority, an investigation must be carried out to determine the cause of the contravention and the investigation must include an assessment to determine the environmental impact of the contravention.
G5	Records of any contravention of this environmental authority must be made including full details of the contravention and any subsequent actions taken in accordance with condition G4.
G6	Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.
G7	All records required by the conditions of this environmental authority must be kept for a minimum of five years, and all monitoring results and underlying raw data must be kept until surrender of this environmental authority.
G8	All records required by the conditions of this environmental authority must be provided to the administering authority : 1. within the timeframe specified by the administering authority ; and 2. in the format requested by the administering authority .
G9	An appropriately qualified person(s) must monitor , record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

G10	All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses.
G11	An annual monitoring report must be prepared and submitted to the administering authority by 30 November each year, for the preceding financial year.
G12	The annual monitoring report required by condition G11 must include: 1. The findings of the receiving environment monitoring program and the vegetation monitoring program for the period; and 2. A summary of the previous 12 months monitoring results including graphical representations identifying relevant indicator limits; and 3. An outline of actions taken or proposed to minimise the environmental risk from any deficiency identified by monitoring programs and/or environmental complaints; and 4. Calculations of the volume and frequency of wet weather storage overflows, where applicable.
G13	Details of all environmental complaints received must be recorded including: 1. date and time the complaint was received; and 2. name and contact details of the complainant when provided by the complainant; and 3. nature of the complaint; and 4. investigations undertaken; and 5. conclusions formed; and 6. actions taken.
G14	When required by the administering authority , monitoring must be undertaken in the manner and within the timeframe prescribed by the administering authority , to investigate any alleged environmental harm caused by the activity .
G15	The results, including an analysis of the results, of monitoring required by condition G14 must be provided to the administering authority within 10 business days after you receive the monitoring results.
G16	Written procedures must be developed which: 1. identify all potential risks to the environment from the activity, including: a. during routine operations; and b. outside routine operations; and c. during closure; and d. in an emergency; and 2. identify measures to prevent or minimise the potential for environmental harm for each of the potential risks identified; and 3. establish an inspection and maintenance program for plant and equipment including calibration and servicing that is in accordance with manufacturer's instructions; and 4. establish a staff training program on obligations under this environmental authority and the <i>Environmental Protection Act 1994</i> to be conducted as part of staff inductions and at least annually thereafter; and 5. establish processes to review environmental risks, incidents, performance and complaints.
G17	Written procedures required by condition G16 must be: 1. implemented; and 2. reviewed at least every two years; and 3. provided to the administering authority upon request and within a timeframe specified by the administering authority.

G18	For plant and equipment, all measures necessary to comply with the conditions of this environmental authority must be: 1. installed, operated and maintained in a proper and effective manner; and 2. in accordance with the written procedure developed in accordance with condition G16.																																					
G19	Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system .																																					
Agency interest: Air																																						
Condition number	Condition																																					
A1	Odours or airborne contaminants from the activity must not cause environmental nuisance to any sensitive place or commercial place .																																					
Agency interest: Noise																																						
Condition number	Condition																																					
N1	Noise generated by the activity must not cause environmental nuisance to any sensitive place or commercial place .																																					
Agency interest: Water																																						
Condition number	Condition																																					
WT1	Contaminants must not be released to any waters .																																					
Agency interest: Land																																						
Condition number	Condition																																					
L1	The only contaminants to be released to land are treated sewage effluent in accordance with <i>Table 1 - Treated effluent release limits to land</i>. Table 1 - Treated effluent release limits to land <table><tr><th>Authorised release locations</th><th>Quality Characteristic (units)</th><th>Minimum</th><th>Median</th><th>Average</th><th>Maximum</th></tr><tr><td rowspan="6">Effluent disposal areas</td><td>Irrigation rate (mm/day)</td><td>-</td><td>-</td><td>3</td><td>6</td></tr><tr><td>Total Nitrogen (mg/L as N)</td><td>-</td><td>-</td><td>10</td><td>30</td></tr><tr><td>Total Phosphorus (mg/L as P)</td><td>-</td><td>-</td><td>5</td><td>15</td></tr><tr><td>pH (pH units)</td><td>5.0</td><td>-</td><td>-</td><td>8.5</td></tr><tr><td>E.coli (CFU/100mL)</td><td>-</td><td>10</td><td>-</td><td>100</td></tr><tr><td>Electrical Conductivity (µS/cm)</td><td>-</td><td>-</td><td>-</td><td>1000</td></tr></table>	Authorised release locations	Quality Characteristic (units)	Minimum	Median	Average	Maximum	Effluent disposal areas	Irrigation rate (mm/day)	-	-	3	6	Total Nitrogen (mg/L as N)	-	-	10	30	Total Phosphorus (mg/L as P)	-	-	5	15	pH (pH units)	5.0	-	-	8.5	E.coli (CFU/100mL)	-	10	-	100	Electrical Conductivity (µS/cm)	-	-	-	1000
Authorised release locations	Quality Characteristic (units)	Minimum	Median	Average	Maximum																																	
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	Total Phosphorus (mg/L as P)	-	-	5	15																																	
	pH (pH units)	5.0	-	-	8.5																																	
	E.coli (CFU/100mL)	-	10	-	100																																	
	Electrical Conductivity (µS/cm)	-	-	-	1000																																	
L2	Treated effluent released to land under condition L1 must be monitored in accordance with <i>Table 2 – Monitoring of treated effluent release to land</i> and the associated requirements. Table 2 - Monitoring of treated effluent release to land <table><tr><th>Monitoring Point</th><th>Quality Characteristic / Indicator (units)</th><th>Minimum monitoring frequency</th></tr><tr><td rowspan="6">Outlet of the sewage treatment plant 50 kL treated sewage effluent holding tank</td><td>Irrigation rate (mm/day)</td><td>Daily</td></tr><tr><td>Total Nitrogen (mg/L as N)</td><td>Every 4 weeks</td></tr><tr><td>Total Phosphorus (mg/L as P)</td><td>Every 4 weeks</td></tr><tr><td>pH (pH units)</td><td>Every 4 weeks</td></tr><tr><td>E.coli (CFU/100mL)</td><td>Every 1 week</td></tr><tr><td>Electrical Conductivity (µS/cm)</td><td>Every 4 weeks</td></tr></table>	Monitoring Point	Quality Characteristic / Indicator (units)	Minimum monitoring frequency	Outlet of the sewage treatment plant 50 kL treated sewage effluent holding tank	Irrigation rate (mm/day)	Daily	Total Nitrogen (mg/L as N)	Every 4 weeks	Total Phosphorus (mg/L as P)	Every 4 weeks	pH (pH units)	Every 4 weeks	E.coli (CFU/100mL)	Every 1 week	Electrical Conductivity (µS/cm)	Every 4 weeks																					
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	Associated requirements 1. Monitoring must be in accordance with the most recent edition of the administering authority's Monitoring and Sampling Manual; and 2. All monitoring devices must be effectively calibrated and maintained in accordance with manufacturers specifications; and 3. Monitoring must be undertaken when treated sewage effluent is being irrigated, unless irrigation has ceased for longer than the relevant parameters specified minimum frequency (e.g. if TSS was only required to be monitored once a week, then a TSS sample would not be required after the first week following cessation of the release); and 4. Irrigation rate must be calculated based on the total irrigation area used in a day and the actual volume irrigated.
L4	Releases to land authorised under condition L1 must: 1. have a minimum surface area of 1.75 hectares; and 2. only occur in the effluent disposal areas.
L5	Releases to land authorised under condition L2 must be done in accordance with documentation that ensures: 1. contaminants are not released to any waters; and 2. ponding of contaminants does not occur; and 3. treated effluent does not run-off into areas beyond effluent disposal areas (as prescribed under condition L4); and 4. soil structure is not degraded as a result of the activity; and 5. soil sodicity and the build-up of nutrients and heavy metals in the soil and subsoil are minimised; and 6. effluent disposal areas (as prescribed under condition L4) are maintained with an appropriate crop in a viable state for transpiration and nutrient uptake; and 7. sufficient buffer zones are maintained between irrigation sites and sensitive environmental receptors.
L6	Treated effluent released to land must be: 1. irrigated uniformly across the effluent disposal areas; and 2. irrigated only through a subsurface drip system.
L7	The enclosed effluent storage volume must not be less than 329 kL.
L8	Treated effluent must be released to land under a fixed irrigation strategy .
L9	All biomass removed from vegetation growing on the land disposal area is to be transported and disposed of in an area other than on the land disposal area .
L10	A receiving environment monitoring program (REMP) must be: 1. designed by an appropriately qualified person(s) to monitor the effects of the activity on land; and 2. undertaken annually by an appropriately qualified person(s).
L11	The REMP required by condition L10 must include taking of soil and sub-soil samples at a soil depth range of 0-30 cm and 30-60 cm from: 1. at least one reference site; and 2. representative locations within the effluent disposal areas.
L12	Monitoring undertaken in accordance with conditions L10 and L11 must include: 1. soil type; and 2. soil structure; and 3. pH; and

	4. phosphorous adsorption capacity; and 5. nutrient status; and 6. salinity; and 7. sodicity; and 8. exchangeable sodium percentage; and 9. salinity leaching fraction; and 10. cation exchange capacity.
L13	A REMP monitoring report must be prepared by an appropriately qualified person(s) and submitted to the administering authority with the annual monitoring report as required under condition G11.
L14	The REMP monitoring report required by condition L13 must include: 1. a summary of the previous 12 months monitoring data obtained in accordance with conditions L11 and L12 of this environmental authority; and 2. an evaluation of the data, including graphical representations showing relevant limits, triggers and trends against all historical data; and 3. A description of all actions taken, and proposed to be taken, to minimise the environmental risk from any deficiency identified by any relevant monitoring and management program(s).
L15	The REMP monitoring report required by condition L13 must include analysis and interpretation of monitoring results by an appropriately qualified person that determines: 1. the ongoing capacity of the effluent disposal areas to sustainably assimilate nutrient loads from the activity; and 2. whether the soil within the effluent disposal areas is ever hydraulically overloaded by the activity; and 3. whether there is migration of contaminants beyond the effluent disposal areas; and 4. how vegetation on, and adjacent to, the effluent disposal areas has been impacted by the activity.
L16	The REMP monitoring report required by condition L13 must include recommendations of appropriate action(s) to mitigate any adverse impacts caused, or likely to be caused, by the activity .
L17	A vegetation monitoring program (VMP) must be: 1. designed by an appropriately qualified person(s) to monitor the effects of the activity on the vegetation; and 2. undertaken monthly by an appropriately qualified person(s).
L18	The VMP must: 1. include visual monitoring of vegetation within the effluent disposal areas; and 2. include photographs of effluent disposal areas; and 3. estimate the total percentage of vegetation cover in a viable state for transpiration and nutrient uptake over the effluent disposal areas; and 4. a comparison of results with previous survey data, including (photo)graphical representations showing relevant limits, and trends against all historical data.
L19	If the results from the VMP indicate that the percentage of vegetation cover in a viable state for transpiration and nutrient uptake within the effluent disposal areas is below 85%: 1. Within 14 days of receiving the results of the VMP, recommendations must be prepared by an appropriately qualified person(s) to restore at least 85% of the vegetation cover to a viable state in the effluent disposal area; and

	2. The recommendations must be implemented within 28 days of receiving them, or within another timeframe agreed to in writing by administering authority .
L20	A report summarising the results of the VMP must be prepared by an appropriately qualified person(s) and submitted to the administering authority with the annual monitoring report as required under condition G11.
Agency interest: Waste	
Condition number	Condition
W1	All waste generated by the activity must be lawfully reused or recycled, and/or lawfully removed to a facility that can lawfully accept the waste.

Definitions

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

Activity means the environmentally relevant activity(s) to which the environmental authority relates. An activity may be undertaken on the whole or a part of a site

Administering authority means the Department of Environment and Science or its successor or predecessors.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills and experience relevant to the environmental authority (EA) requirements and can give authoritative assessment, advice and analysis in relation to the EA requirements using the relevant protocols, standards, methods and/or literature.

Biomass means organic material.

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

Day means any 24 hour period of a calendar day.

Effluent disposal area means the areas identified as effluent disposal areas in *Appendix A – Effluent disposal areas*.

Environmental complaints means an expression of dissatisfaction, concern or report, whether written or verbal, about the **activity** and/or its impact on the environment

Environmental nuisance as defined under Chapter 1 of the *Environmental Protection Act 1994*.

Fixed irrigation strategy means irrigating a predetermined amount to **land** at a regular interval irrespective of rainfall patterns.

Land means land excluding waters and the atmosphere.

Measures has the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency.

Median means the middle value, where half the data are smaller and half the data are larger. If the number of samples is even, the median is the arithmetic average of the two middle values.

NATA means National Association of Testing Authorities.

Monitor, monitored and monitoring means monitoring the impact of an **activity** on the receiving environment and includes analysing, assessing, examining, inspecting, measuring, modelling or reporting any of the following matters—

- (a) the quantity, quality, characteristics, timing and variability of the release of any contaminant; and
- (b) the effectiveness of any control measure; and
- (c) the characteristics of, and impact on, the receiving environment; and
- (d) the effectiveness of remedial or rehabilitation measures (if applicable to the relevant monitoring requirement).

Receiving environment monitoring program (REMP) means a monitoring program designed to monitor and assess the potential impacts of controlled and/or uncontrolled releases of contaminants to the environment from the **activity**.

Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

Release of a contaminant into the environment or release means to:

- (a) deposit, discharge, emit or disturb the contaminant; or
- (b) cause or allow the contaminant to be deposited, discharged, emitted or disturbed; or
- (c) fail to prevent the contaminant from being deposited, discharged emitted or disturbed; or
- (d) allow the contaminant to escape; or
- (e) fail to prevent the contaminant from escaping.

Secondary containment system means a system designed, installed and operated to prevent any release of contaminants from the system, or containers within the system, to land, groundwater, or surface waters.

Sensitive place includes any of the following places:

- (a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- (b) a motel, hotel or hostel; or
- (c) a kindergarten, school, university or other educational institution; or
- (d) a medical centre or hospital; or
- (e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- (f) a public park or garden; or
- (g) for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2019; or
- (h) the area within the curtilage of any of the above places.

Total Nitrogen (TN) means the sum of Organic Nitrogen, Ammonia Nitrogen, Nitrite plus Nitrate Nitrogen, expressed as mg/L as Nitrogen. This includes both the inorganic and organic fraction of nitrogen.

Total Phosphorus (TP) means the sum of the reactive phosphorus, acid-hydrolysable phosphorus and organic phosphorus, as mg/L of Phosphorus. This includes both the inorganic and organic fraction of phosphorus.

Triggers are physicochemical, parameter-specific measurement values used to indicate a condition where an **environmental value** or **sensitive receptor** may be at low, moderate or high risk, or some other risk-related indicator.

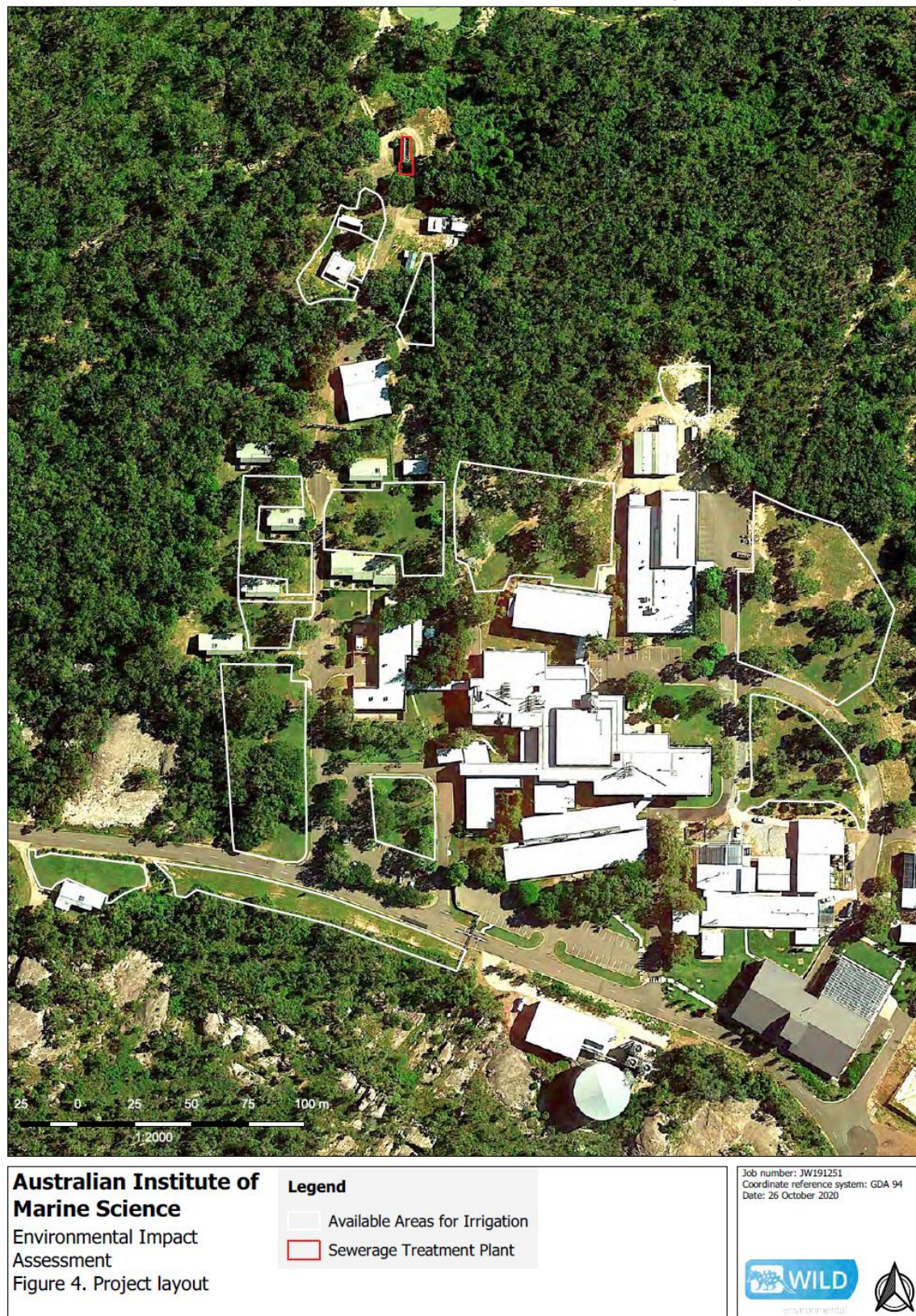
Vegetation monitoring program (VMP) means a monitoring program designed to monitor and assess the state of vegetation for transpiration and nutrient uptake in the effluent disposal area.

Viable state or viability means able to live and grow.

Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and **groundwater** and any part thereof.

Appendix A – Effluent disposal areas

Effluent disposal areas are those within the areas identified as 'Available Areas for Irrigation' in the figure below:



END OF ENVIRONMENTAL AUTHORITY