



Northern
Territory
Government

WASTE DISCHARGE LICENCE

(Pursuant to section 74 of the *Water Act*)

Licensee	Power and Water Corporation
Licence Number:	WDL159-06
Registered Business Address:	Level 2, Mitchell Centre 55 – 59 Mitchell Street Darwin NT 0800
ABN:	15 947 352 360
Premises Address:	144 Commonage Road, Ilparpa NT 0873 Lots 8201 and 8093 Town of Alice Springs
Anniversary Date:	15 October
Commencement Date:	18 October 2018
Expiry Date:	15 October 2020
Licensed Activity:	The discharge of wastewater from the Alice Springs Waste Stabilisation Ponds (WSPs) to Ilparpa Swamp subject to the licence conditions.

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INFORMATION ABOUT THIS LICENCE

Definitions of Terms

- A section including the definition of terms used in this Licence can be found at the end of it.
- Terms used in the waste discharge licence which are defined in the *Water Act* (the Act) have the meaning given in that Act unless specifically indicated otherwise.

Responsibilities of Licensee

- It is an offence under the *Water Act*, if the holder of a waste discharge licence contravenes or fails to comply with the conditions of a waste discharge licence.
- Licensees must comply at all times with the requirements of the Water Act and all applicable laws.
- Except as expressly provided for in this licence, the licensee must not:
 - cause environmental harm either directly or indirectly;
 - allow waste to come into contact with water; or
 - allow water to be polluted.
- Without limiting the conditions of this licence, in conducting the activity, the licensee must do all things reasonable and practicable to:
 - prevent or minimise the likelihood of pollution occurring as a result of, or in connection with, the activity;
 - prevent or minimise the likelihood of environmental harm occurring as a result, or in connection with, the activity;
 - effectively respond to pollution and the risk of pollution occurring as a result of, or in connection with, the activity;
 - effectively respond to environmental harm and the risk of environmental harm occurring as a result of or in connection with the activity; and
 - apply the principles of ecologically sustainable development.

Duration of licence

- This licence will remain in force until its expiry date, it is surrendered by the licensee, or until it is suspended or revoked by the Controller of Water Resources.
- As set out in section 94 of the Water Act, the holder of a licence may, at any time, surrender the licence.

Amendment, Modification or Revocation of Licence (section 93 of the *Water Act*)

- As set out in section 93 of the Water Act, the Controller of Water Resources may, by notice:
 - amend or modify the terms and conditions of a licence;
 - revoke a licence; or
 - suspend a licence.

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Public Register

- A copy of this Licence will be placed on a register in accordance with section 95 of the Act.
- A copy of waste discharge licences and any plans for environmental management, reports, submissions or documents required as a condition of a waste discharge licence, will be placed on a register.
- The Administering Agency makes this register freely available from the Northern Territory Environment Protection Authority (NT EPA) website.

Beneficial Use Declaration (section 73 of the Water Act)

- Beneficial Use Declaration (BUD) is a legislated process that reduces the effects of water pollution and assists in the protection and management of water. The community decides how a particular water body should be used by choosing on one or more Beneficial Use categories.

Environmental Interests

- This section highlights the beneficial uses as declared under the *Water Act* and the sensitivity of the surrounding land use and environment associated with the location of the approved activity.
 - Declared beneficial uses and or water quality objectives are: *Alice Springs Water Control District (G43, 29 October 2014)*
 - Sites of Conservation Significance: *MacDonnell Ranges Conservation Area*

Cultural Interests

- It is the licensee's responsibility to contact the Aboriginal Areas Protection Authority, appropriate land council or other governing body and ensure that any Authority Certificates required as a result of conducting the licenced activity are obtained and complied with.

RULES FOR INTERPRETING THE CONDITIONS OF THIS LICENCE

- Where there is a discrepancy between the conditions of this licence and any plan, standard, guideline or other document referred to in this licence, the conditions of this licence prevail to the extent of the inconsistency.
- Any reference to any standard (Australian or international) in this licence means the relevant parts of the current version of that standard.
- A reference to any guideline or code of practice (or to the relevant parts of any guideline or code of practice) in this licence means the current version of the guideline or code of practice.
- Under section 76 of the *Water Act*, any contravention of or failure to comply with this licence by the licensee may be an offence.
- In this licence, unless the contrary intention appears, words that are defined in the *Water Act* are intended to have the meaning given to them in that Act.

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LICENCE CONDITIONS

GENERAL

1. The licensee must ensure the contact details recorded with Administering Agency for this licence are correct at all times.
2. The licensee must at all times have a 24 hour emergency contact.
3. The licensee must notify the Administering Agency prior to making any operational change that will cause, or is likely to cause, an increase in the potential for environmental harm.
4. The licensee must cause clear and legible signage, in English, to be displayed in a prominent location at each public entrance to the premises that includes the following details:
 - 4.1. waste discharge licence number issued under the *Water Act*; and
 - 4.2. 24 hour emergency contact details.
5. The licensee must cause a copy of this licence to be available for inspection by any person, in hard copy form, at the premises.
6. The licensee must provide to the Administering Agency, within 10 business days of a request, a copy of any document, monitoring data or other information in relation to the activity, in the format requested by the Administering Agency.
7. All notices, reports, documents or other correspondence required to be provided as a condition of this licence, unless otherwise specified as a condition of this licence, must be provided in electronic form by emailing waste@nt.gov.au
8. The licensee must maintain and implement the documents listed in Table 1.

Table 1 – Licence Documents

Document Title	Our Reference	Your Reference
Power and Water Corporation Waste Discharge Licence Communication Strategy	EN2011/0016-144~0015	D2015/500627
Alice Springs Waste Stabilisation Ponds 2015 -17 Performance Improvement Plan	EN2011/0016-144~0010	D2016/92942
Alice Springs Wastewater Treatment Plant Environmental Management Plan	EN2011/0016-144~0006	43/21260/00/26227_Rev 4

9. Within 10 business days of any amendment being made to a document listed in Table 1 the licensee must provide the amended document to the Administering Agency, along with:
 - 9.1. a tabulated summary of the amendment(s) with document references;
 - 9.2. reasons for the amendment(s); and
 - 9.3. an assessment of environmental risk associated with the amendment(s).
10. The Administering Agency may require the licensee to revise or amend and resubmit any amended document. Where the Administering Agency requires a document to be resubmitted, the licensee must submit it to the Administering Agency by the date specified by the Administering Agency.
11. The licensee must, for the duration of this licence, implement, maintain and follow a Consultation and Communication Plan which includes a strategy and procedures for communicating with persons who are likely to have a real interest in, or be affected by, the activity.
12. The licensee must operate and maintain a community feedback number.

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13. The licensee must display the community feedback number:
 - 13.1. where the licensee has a website, in a prominent location on the licensee's website;
 - 13.2. in the Consultation and Communication Plan; and
 - 13.3. in other publicly available documents relating to the activity.
14. The licensee must maintain a Complaint Log for all complaints received by the licensee in relation to the activity.
15. The licensee must ensure that the Complaint Log includes, for each complaint received by the licensee, the following information:
 - 15.1. the person to whom the complaint was made;
 - 15.2. the person responsible for managing the complaint;
 - 15.3. the date and time the complaint was reported;
 - 15.4. the date and time of the event(s) that led to the complaint;
 - 15.5. the contact details of the complainant if known, or where no details are provided a note to that effect;
 - 15.6. the nature of the complaint;
 - 15.7. the nature of event(s) giving rise to the complaint;
 - 15.8. prevailing weather conditions at the time (where relevant to the complaint);
 - 15.9. the action taken in relation to the complaint, including any follow-up contact with the complainant; and
 - 15.10. if no action was taken, why no action was taken.
16. The licensee must implement, maintain and follow an Emergency Response Plan that addresses procedures for responding to emergencies associated with the activity that may cause environmental harm.

EARLY SURRENDER OF LICENCE

17. Any reports, records or other information required or able to be provided by the licensee under this licence must be submitted to the Administering Agency prior to the licensee surrendering the licence. If the date on which a report, record or other information is required falls after the date the licensee requests to surrender this licence, the licensee must provide the report, record or information as far as possible using data available to the licensee up to and including the date the request to surrender the licence is made.

OPERATIONAL

18. The licensee must, without limiting any other condition of this licence, in conducting the activity do all things reasonable and practicable to ensure the activity does not adversely affect the Declared Beneficial Uses and Objectives as declared from time to time, including those applying to:
 - *Alice Springs Water Control District (G43, 29 October 2014)*
19. The licensee must ensure any plant and equipment used by the licensee in conducting the activity:
 - 19.1. is reasonably fit for the purpose and use to which it is put;
 - 19.2. is maintained; and
 - 19.3. is operated by a person trained to use the plant and equipment.

DISCHARGES

20. This licence authorises discharge to water from the authorised discharge point(s) as identified in Table 2 and Appendix 4, and as otherwise allowed in accordance with the conditions of this licence.

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Table 2 – Authorised Discharge Points

Authorised Discharge Point	Source	Location
Outfall 2 (SAA100) to Ilparpa Swamp	Treated wastewater from Evaporation Pond 10	Longitude: 133.85388 Latitude: -23.74125
Outfall 3 (SAB050) to Ilparpa Swamp	Emergency Overflow from Pond Sets B and C	Longitude: 133.84463 Latitude: -23.74580

21. The licensee must ensure that all discharge events at each authorised discharge point consist only of waste from the source(s) as specified in Table 2.
22. The licensee must only discharge from the authorised discharge points in Table 2, once all viable onsite and off-site re-use and storage options have been exhausted.
23. The licensee must, for each authorised discharge point, record, for each discharge event:
 - 23.1. the time the discharge commenced and the duration of the discharge;
 - 23.2. an estimate of the discharge rate of flow; and
 - 23.3. an estimate of the discharge volume.
24. The licensee must ensure that the discharge from all discharge events at each authorised discharge point does not:
 - 24.1. contain any floating debris, oil, grease, petroleum hydrocarbon sheen, scum, litter or other objectionable matter;
 - 24.2. cause or generate odours which would adversely affect the use of surrounding waters;
 - 24.3. cause algal blooms in the receiving water;
 - 24.4. cause visible change in the behaviour of fish or other aquatic organisms in the receiving water;
 - 24.5. cause mortality of fish or other aquatic organisms;
 - 24.6. cause adverse human health impacts, i.e. mosquito breeding habitats;
 - 24.7. cause adverse impacts on endemic plants.

MONITORING

25. The licensee must conduct water monitoring in accordance with Appendix 1 ("the Monitoring Plan") from the commencement date of this licence.
26. The licensee must ensure that all samples and field environmental data are representative of the conditions at the time of sampling.
27. The licensee must ensure that all samples and field environmental data are collected in accordance with recognised Australian Standards and guidelines (such as AS/NZS 5667, ANZECC/ARMCANZ).
28. The licensee must ensure that all monitoring samples are analysed at a laboratory with current NATA accreditation or equivalent, for the parameters to be measured.
29. The licensee must for all land based monitoring points specified in the Monitoring Plan:
 - 29.1. install and maintain appropriate identification signage so that they are reasonably identifiable at all times; and
 - 29.2. maintain safe access and egress, as is reasonably practicable.
30. The licensee must ensure any samples collected in accordance with the Monitoring Plan or in connection with the activity or this licence, are obtained by, or under the supervision of a qualified sampler.

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31. The licensee must ensure that, for each sample collected in accordance with the Monitoring Plan or the activity the following information must be recorded and retained:
- 31.1. the date on which the sample was collected;
 - 31.2. the time at which the sample was collected;
 - 31.3. the location at which the sample was collected;
 - 31.4. the name of the person who collected the sample;
 - 31.5. the chain of custody forms relating to the sample;
 - 31.6. the field measurements (if any) and analytical results (if any) relating to the sample; and
 - 31.7. laboratory quality assurance and quality control documentation.

RECORDING AND REPORTING

32. The licensee must within 24 hours notify the Administering Agency by emailing waste@nt.gov.au when:
- 32.1. a discharge is likely to occur;
 - 32.2. a discharge event, authorised by this licence, commences; and
 - 32.3. the discharge event, referred to in 34.2 ceases.
33. The licensee must keep records of all non-compliances with this licence. These records must be adequate to enable the licensee to comply with the non-compliance notification conditions of this licence.
34. The licensee must notify the Administering Agency of any non-compliance with this licence by emailing waste@nt.gov.au, as soon as practicable after (and in any case within 24 hours after) first becoming aware of the non-compliance.
35. The licensee must include in the notification of non-compliance the following information:
- 35.1. when the non-compliance was detected and by whom;
 - 35.2. the date and time of the non-compliance;
 - 35.3. the actual and potential causes and contributing factors to the non-compliance;
 - 35.4. the risk of environmental harm arising from the non-compliance;
 - 35.5. the action(s) that have or will be undertaken to mitigate any environmental harm arising from the non-compliance;
 - 35.6. corrective actions that have or will be undertaken to ensure the non-compliance does not reoccur;
 - 35.7. if no action was taken, why no action was taken; and
 - 35.8. a date when an incident investigation report will be submitted to the Administering Agency.
36. The licensee must submit a completed Annual Return, by emailing waste@nt.gov.au, within 30 business days after the anniversary date of this licence, which report relates to the preceding 12 month period.
37. The licensee must complete and provide to the Administering Agency a Monitoring Report, as prescribed by this licence, within 30 business days after the anniversary date of this licence, by emailing waste@nt.gov.au
38. The licensee must ensure that each Monitoring Report:
- 38.1. is prepared in accordance with the requirements of the Administering Agency 'Guideline for Reporting on Environmental Monitoring';
 - 38.2. includes a tabulation of all monitoring data required as a condition of this licence;

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- 38.3. includes long term trend analysis of monitoring data to demonstrate any environmental impact associated with the activity over a minimum period of three years (where the data is available);
- 38.4. includes an assessment of environmental impact from the activity.
- 39. The Adminstrating Agency may require the licensee to revise or amend and resubmit any Report prepared in response to a condition of this licence. Where the Adminstrating Agency requires a Report to be resubmitted, the Licensee must submit it to the Adminstrating Agency by the date specified by the Adminstrating Agency.

PERFORMANCE IMPROVEMENT

- 40. The licensee must submit an updated Supplementary Environmental Risk Assessment Report for the activity, within 30 business days prior to the expiry date of this licence.
- 41. The updated Environmental Risk Assessment must:
 - 41.1. respond to the findings of the 2017 Risk Assessment;
 - 41.2. further investigate and quantify the risks associated with collection/consumption of bush food in the area; and
 - 41.3. demonstrate that the recommendations of the 2017 Risk Assessment have been implemented.
- 42. The licensee must provide an updated Environmental Management Plan that is site specific and relevant to the activity. The updated Environmental Management Plan must be submitted to the Administering Agency by 30 June 2019.
- 43. The licensee must submit an updated Performance Improvement Plan for the activity. The updated Improvement Plan must:
 - 43.1. be submitted to the Administering Agency by 30 June 2019;
 - 43.2. report on the progress of implementing the Alice Springs WDL 159 Improvement Plan 2015 -17 dated 20 June 2016;
 - 43.3. evaluate the environmental impact of the activity; and
 - 43.4. be used to sustain improvements.

END NOTES

This licence, WDL 159-06, is a renewal and supersedes WDL159-05, which was issued on 23 September 2015

WDL 159-04 was issued on 1 June 2013

WDL 159-03 was issued on 31 October 2012.

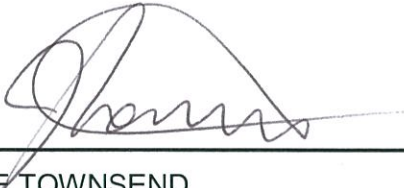
WDL 159-02 was issued on 18 May 2012.

WDL 159-01 was issued on 01 January 2012.

The end notes are to assist with historical records

END OF LICENCE CONDITIONS

This licence is not valid unless signed below:

A handwritten signature in black ink, appearing to read 'Joanne', is written over a solid horizontal line.

JOANNE TOWNSEND

Controller of Water Resources

Dated the 19 October 2018

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DEFINITIONS

In this licence, unless a contrary intention appears:

Term	Definition
24 hour emergency contact	the phone number of a person who can be contacted at any time and be capable of responding to and providing information about any incident associated with the activity.
Activity	the Licenced activity as described on the covering page of this licence.
Administering Agency	means the Department of Environment and Natural Resources, or if dissolved, another Government Department with responsibility for administering the Water Act.
Annual Return	an Administering Agency prescribed format for demonstrating and reporting compliance with the conditions of this licence.
ANZECC/ARMCANZ	Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000: National Water Quality Management Strategy: <i>Australian Guidelines for Water Quality Monitoring and Reporting</i> .
Business days	a day not Saturday, Sunday or a public holiday, in the Northern Territory.
Community feedback number	a telephone number enabling members of the public to contact, at any time, a person or voice mail system that can accept, on behalf of the licensee, enquiries or complaints about the activity, and to which the licensee must respond.
Complaint Log	a register of complaints to be maintained by the Licensee that records the details of each complaint received in relation to the activity.
Consultation and Communication Plan	a written plan documenting proposed consultation and communications for the activity before, during and after the activity which includes a strategy for communicating with members of the public who are likely to have a real interest in, or be affected by, the activity.
Contact details	includes the 24 hour emergency contact, and name, position title and phone number of a representative of the licensee who can be contacted about the licence and activity.
Contaminant	a solid, liquid or gas or any combination of such substances and includes: <ul style="list-style-type: none">(a) noise, odour, heat and electromagnetic radiation;(b) a prescribed substance or prescribed class of substances; and(c) a substance having a prescribed property or prescribed class of properties.
Discharges	allow a liquid, gas or other substance to flow out from where it has been confined.
Emergency Response Plan	a written plan documenting the licensee's procedures for responding to emergencies caused by, resulting from or associated with the activity and that may cause environmental harm.
Environmental harm	any harm to or adverse effect on, or potential harm to or potential adverse effect on, the environment
Environmental nuisance	means: <ul style="list-style-type: none">(a) an adverse effect on the amenity of an area that:<ul style="list-style-type: none">(i) is caused by noise, smoke, dust, fumes or odour; and(ii) unreasonably interferes with or is likely to unreasonably interfere with the enjoyment of the area by persons who

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Term	Definition
	occupy a place within the area or are otherwise lawfully in the area; or (b) an unsightly or offensive condition caused by contaminants or waste.
incident	includes: (a) an accident, emergency or malfunction; and (b) a deliberate action, whether or not that action was taken by the person conducting the activity in the course of which the incident occurred.
Litter	litter, garbage, rubbish, refuse or waste matter, and includes the body of a dead animal.
Maintain	kept in a manner that it does not present or cause a risk of environmental harm or a hazard to persons or property or, for the purposes of documents including plans, a process of reviewing and amending documentation to ensure it is relevant.
Material environmental harm	environmental harm that: (a) is not trivial or negligible in nature; (b) results, or is likely to result, in not more than \$50,000 or prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the harm or rehabilitate the environment; or (c) results in actual or potential loss or damage to the value of not more than \$50,000.
NATA	National Association of Testing Authorities, Australia.
Non-compliance	failure or refusal to comply, whether by act or omission, with obligations or requirements and includes any exceedance of a licence limit.
Non-compliance notification	an Administering Agency prescribed format for notifying the Administering Agency of a non-compliance.
Plant and equipment	all material items used in association with the activity, including (but not limited to) storage vessels and containers, pipe work and hosing, vehicles (including vessels), tools, and measuring equipment.
Pollute	in relation to water, means directly or indirectly to alter the physical, thermal, chemical, biological or radioactive properties of the water so as to render it less fit for a prescribed beneficial use for which it is or may reasonably be used, or to cause a condition which is hazardous or potentially hazardous to: (a) public health, safety or welfare; (b) animals, birds, fish or aquatic life or other organisms; or (c) plants.
Pollution	(a) a contaminant or waste that is emitted, discharged, deposited or disturbed or that escapes; or (b) a contaminant or waste, effect or phenomenon, that is present in the environment as a consequence of an emission, discharge, deposition, escape or disturbance or a contaminant or waste.
Premises	the premises identified in this licence which includes equipment, plant and structures, whether stationary or portable, and the land on which premises are situated.

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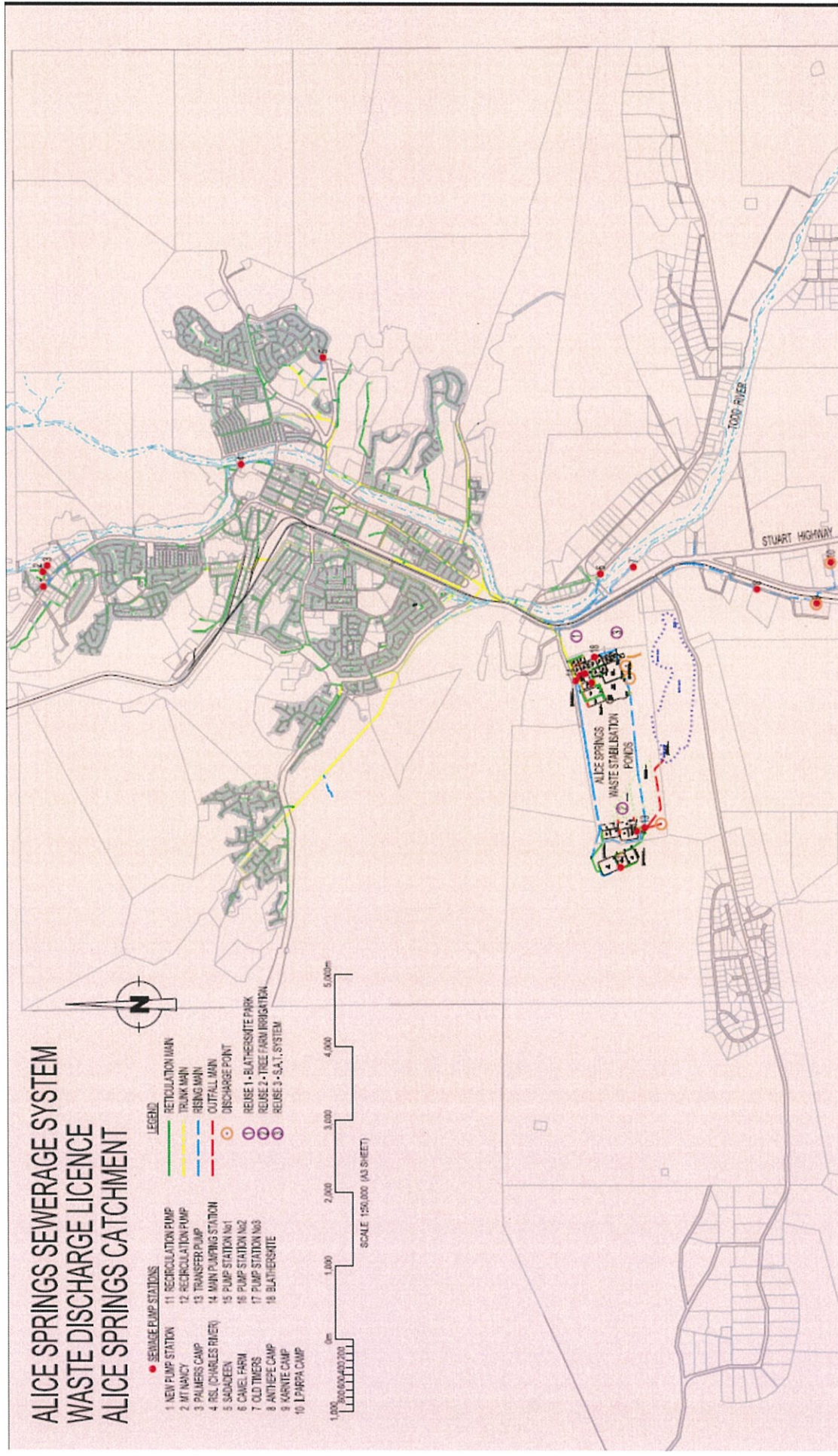
Term	Definition
Public entrance	access to the premises that is utilised by the public.
Qualified sampler	a person who has training and experience in obtaining samples from the relevant environmental medium.
Serious environmental harm	environmental harm that is more serious than material environmental harm and includes environmental harm that: <ul style="list-style-type: none">(a) results or is likely to result in more than \$50,000 or prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the harm or rehabilitate the environment;(b) results in actual or potential loss or damage to the value of more than \$50,000;(c) damages an aspect of the environment that is of a high conservation value or of special significance; and(d) is irreversible or otherwise of a high impact or on a wide scale.
Waste	Includes matter or a thing, whether wholly or partly in a solid, liquid or gaseous state, which, if added to water, may pollute the water.
Wastewater	water that contains a contaminant or waste.
Water	means water, whether or not it contains impurities.
WMPC Act	the Northern Territory <i>Waste Management and Pollution Control Act</i> .

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APPENDIX 1: DISCHARGE MONITORING PLAN

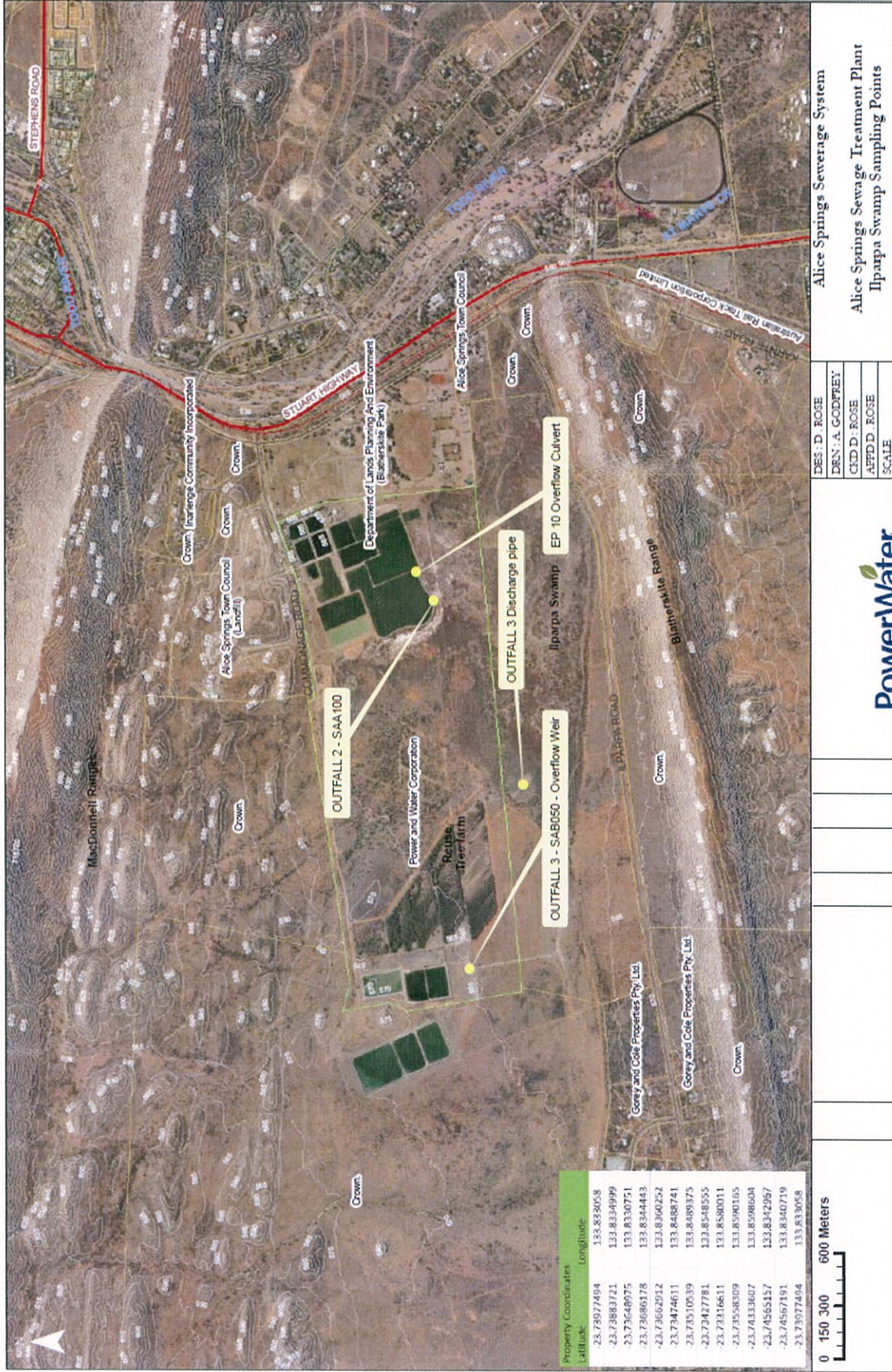
		Outfall 2	Outfall 3
	Site Code	SAA100	SAB050
	Longitude	- 23.741250	- 23.743092
	Latitude	133.854019	133.835242
Parameter	Units		
Flow	ML/day	Measured when discharging	Measured when discharging
Field Measurements			
pH	pH units	D	D
Conductivity	EC		
Biological Oxygen Demand	mg/L		
Total Suspended Solids	mg/L		
Volatile Suspended Solids	mg/L		
Dissolved Oxygen	% saturation		
Temperature	°C		
Nutrients			
Filterable Reactive Phosphorous	mg/L	D	D
Total Phosphorous	mg/L		
Ammonia	mg/L		
Total Nitrogen	mg/L		
Nitrate	mg/L		
Nitrite	mg/L		
Bacteriological			
Escherichia coli	org/100mL	D	D
Metals			
Chromium	µg/L	D	D
Copper	µg/L		
Zinc	µg/L		
<p>Samples can only be collected from the discharge point during a discharge:</p> <p>Key: D means per discharge; where a discharge event continues for 3 days or more, sampling must be conducted at intervals of not more than 3 days apart.</p>			

APPENDIX 2: ALICE SPRINGS SEWERAGE SYSTEM WASTE DISCHARGE LICENCE CATCHMENT AREA



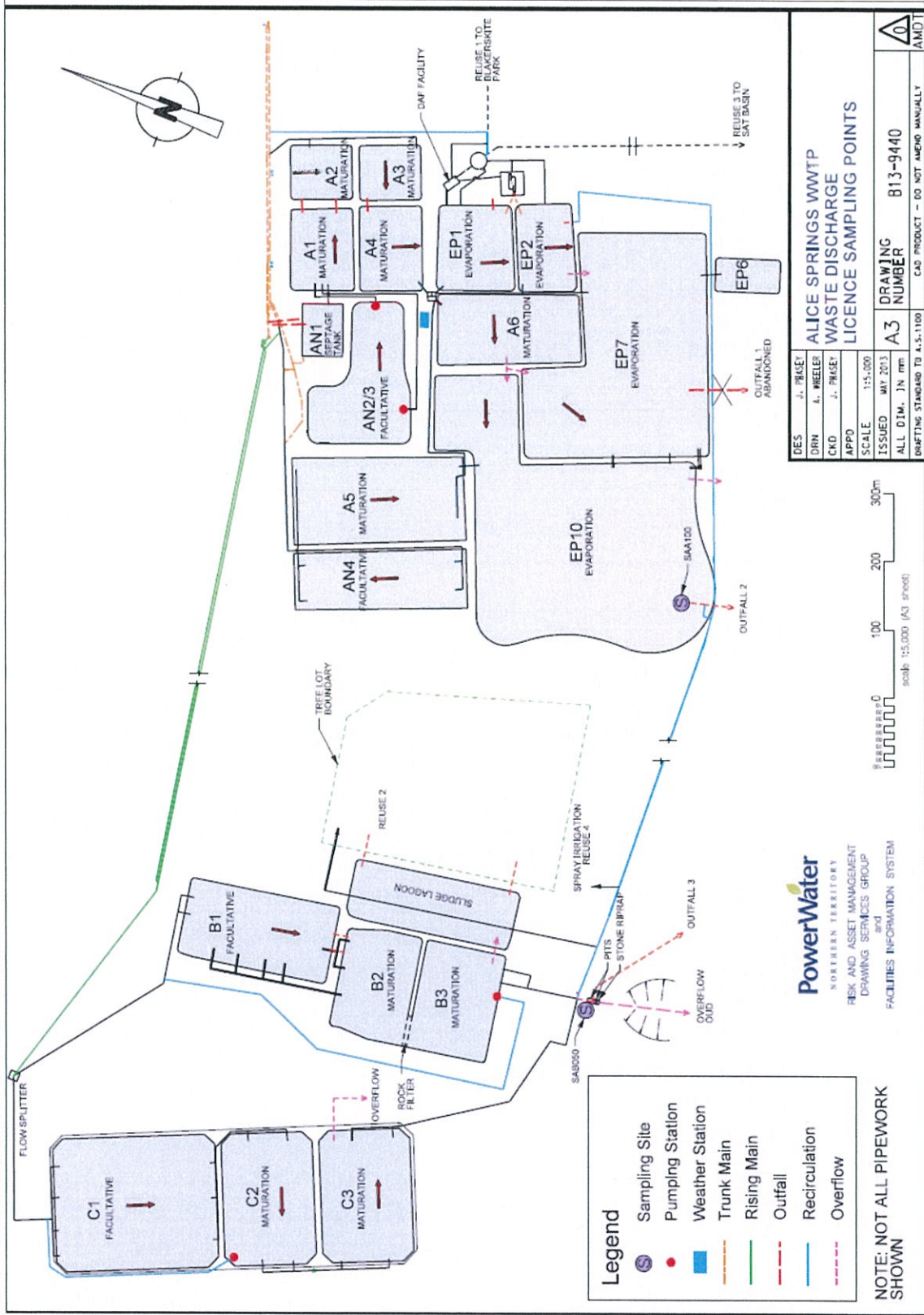
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APPENDIX 3: SAMPLING SITES AND AUTHORISED DISCHARGE POINTS



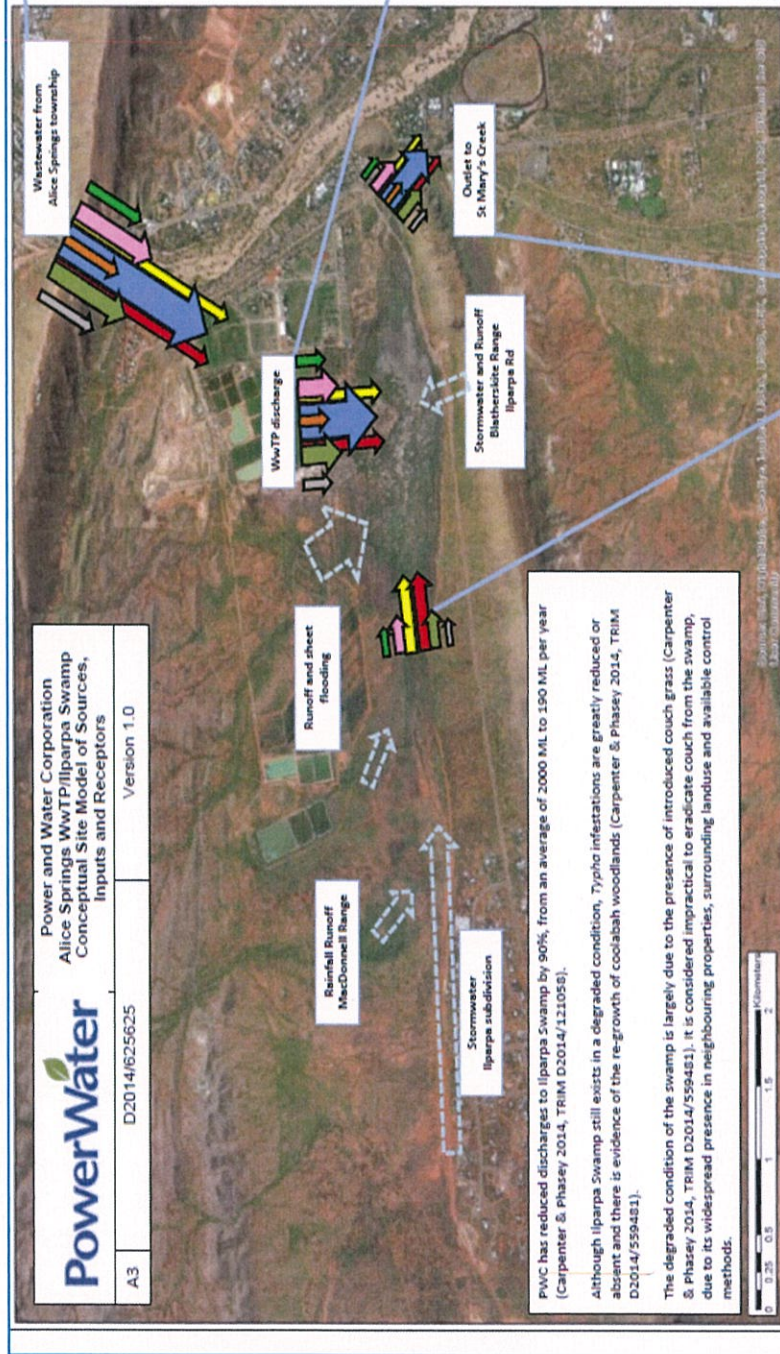
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APPENDIX 4: SITE LAYOUT MAP



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APPENDIX 5: CONCEPTUAL SITE MODEL



Legend	Contaminant	Mass Load ²	Units (per year)	Mean Conc. ¹	Units	Receptors
	Total N	144.01	tonnes	51.6	mg/L	• Vegetation communities
	Total P	19.86	tonnes	7.6	mg/L	• Wildlife
	BOD	537.1	tonnes	199.1	mg/L	• Recreational users (e.g. dog walkers, birdwatchers)
	SS	581	tonnes	222.5	mg/L	
	TDS	2623	tonnes	939.2	mg/L	
	Metals	insufficient data exists				
	E. coli	1.95E+07			MPN/100mL	
	pH		pH			
	Conductivity		uS/cm	1489	uS/cm	

¹Inflow from the 2012 and 2013 calendar year. Phassey, 2013 (TRIM D2013/419683).
²Mass loads calculated using the lip direct emissions technique. The mass monthly concentration is multiplied by the volume discharged in a month to give the mass load. The mass load is then summed over all 12 months. Mean concentration at site 54A001 for the 2012 and 2013 calendar years.

Legend	Contaminant	Mass Load ²	Units	Mean Conc.	Units	Receptors
	Total N	4.3	tonnes	22.5 ¹	mg/L	• Vegetation communities
	Total P	0.7	tonnes	3.4 ¹	mg/L	• Wildlife
	BOD	14.7	tonnes	73	mg/L	• Recreational users (e.g. dog walkers, birdwatchers)
	SS	35.8	tonnes	1860 ¹	mg/L	• Swamp soils
	VSS	32.5	tonnes	140 ¹	mg/L	
	TDS	339	tonnes	1790 ¹	mg/L	
	Metals	insufficient				
	E. coli	435			MPN/100mL	• Aquatic invertebrates
	pH		9.3 ¹		pH	
	Conductivity		3410 ¹		uS/cm	

¹Discharge volume taken from Phassey, 2012 (TRIM D2012/443577).
²Mass load calculated using the mean pollutant concentration at site 54A100 for the 2012 and 2013 calendar year multiplied by the volume discharged.
³Mean pollutant concentration at site 54A100 for the 2012 and 2013 calendar year (Phassey, 2014. (TRIM D2014/19979)).
⁴Mass load calculated using the mean pollutant concentration at site 54A100 from the 2012 and 2013 calendar years used due to limited number of sample result. Various concentrations for different metals exist, none above the value shown.
⁵90% percentage values for monitoring data from site 54A100 from the 2013 and 2013 calendar years used (Phassey 2014 D2014/19979).

Legend	Contaminant	Total N	Total P	BOD	SS	VSS	TDS	Metals	E. coli	Receptors
	Total N	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Wildlife • Vegetation communities • Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	Total P	0.75	0.75	0.75	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	BOD	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	SS	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	VSS	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	TDS	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	Metals	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer
	E. coli	4.5	0.75	4.5	8	604	108	<0.1	7.16	• Recreational users • PWC employees • Racecourse • Property owners/residents: - Ilparpa subdivision - St Mary's - Desert Knowledge Precinct - Arid Zone Research Institute • Outer farm basin aquifer

Legend	Contaminant	Mass Load	Units	High Conc. ¹	Units	Receptors
	Total N	4.5	tonnes	4.5	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	Total P	0.75	tonnes	0.75	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	BOD	14.7	tonnes	14.7	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	SS	35.8	tonnes	35.8	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	VSS	32.5	tonnes	32.5	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	TDS	339	tonnes	339	mg/L	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	Metals	insufficient data exists to calculate mass loads. Available water quality data indicative of concentrations only. ²				• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	pH		9.3		pH	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)
	Conductivity		3410		uS/cm	• Wildlife • Vegetation communities • Recreational users • PWC employees • Ilparpa subdivision residents • Groundwater (local aquifer)

¹Concentrations taken from Carpenter & Phassey, 2014. Waste Discharge Licence 159-06 Alice Springs Wastewater Treatment Plant. Discharge to Ilparpa Swamp
²Deficient Environmental Risk Assessment. Maximum values for monitoring data used due to limited number of sample result.
No measurement of input volume to enable the calculation of mass loads.