

## Reconfiguration of Lot 101 SP255660 into 23 Lots

### Onsite Wastewater Treatment and Effluent Disposal Assessment

Client: Tierra Construction Services Pty Ltd

Address: Lot 101 Fords Rd

Adare QLD 4343

101 SP255660

Date: 10th July 2024

#### **Document Control**

Version	Date	Author
AE22222 V1.0	10/07/25	T. Dugri

Arcadia Environmental Pty Ltd QBCC 151 44645 ACN 635 546 600 Arcadiaenviro.com.au

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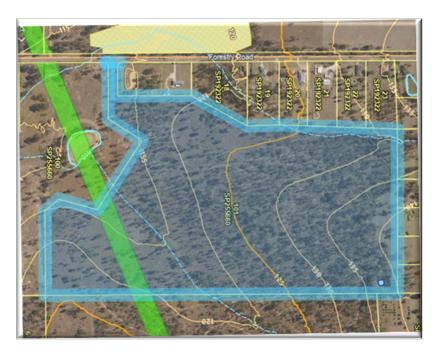
### 1.0 Scope

Arcadia Environmental Pty Ltd is engaged to provide an onsite wastewater system assessment for the proposed Lot subdivision of **Lot 101 SP255660** at the present address: **Lot 101 Fords Rd**, **Adare 4343**. It is proposed to reconfigure Lot 101 23 lots that will not be serviced by a municipal sewer network.

This report will provide an assessment to support the Development Application for the reconfiguration and subdivision of the lots with regards to domestic onsite wastewater treatment and on-site effluent disposal.

For the purposes of this assessment, it is assumed each Lot will have a single 4-bedroom dwelling with their own town/mains water supply. Due to the presence of neighbouring dams, surface water gullies and overland flow paths, an advanced secondary treatment plant is required. Onsite disposal via surface spray irrigation is recommended where possible. A site-specific Site and Soil Evaluation will be required for each lot, post purchase. Emergent site feature constraints may require alternative methods.





Lot 101 Fords Rd, Adare 4343 (QLD Globe)

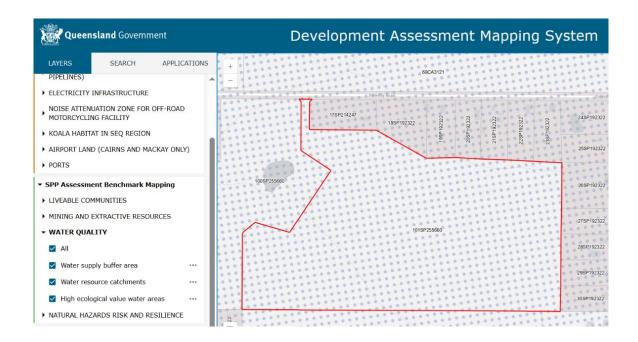
### 2.0 Legislation and standards

This report has been completed in accordance with relevant legislative requirements:

- Plumbing and Drainage Act;
- Plumbing and Drainage Regulations.
- Queensland Plumbing and Wastewater Code 2024.
- AS/NZS 1547:2012 Onsite Domestic Wastewater Management.
- Plumbing Code of Australia (PCA)
- Planning Act 2016 (Section 12)

The proposed lots are outside of the water supply buffer area, so the Water Act 2000 is not applicable.

Figure 2. DAMS Search for Water Quality Constraints

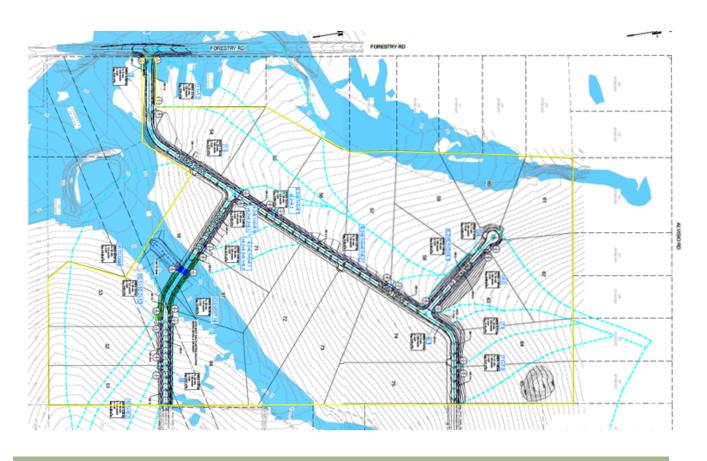


### 3.0 Site and soil evaluation

Table 1: Property details

Property Details	Description
Property address	<b>Lot 101 Fords Rd, Adare 4343</b> Qld 4343
Property description	Lot 101 SP255660
Local Authority	Lockyer Valley Council
Property size	267,100m <sup>2</sup>
Dwelling / structures	Nil
Building envelope	Proposed (indicative)
Water supply	Reticulated (mains)
Easements	Yes - See plan
Vegetation	Scrub, lantana, native gums, bullock
	grass, paw paw and wattles
Slope	2-15 % Variable – see contours
Slope configuration	Variable – see contours
Aspect	Highly variable – mostly NE
Water bodies	Intermittent creeks
Bores	Nil
Flood hazards	Yes - see plan
Environmental areas	Wetland through flood zone

Figure 3: Proposed reconfiguration plan.



### 3.1 Soil investigation

Field work was conducted on 02/07/25. See Appendix A for a generic Site and Soil Evaluation report.

**Table 2:** Represents the design broad characteristics of the receiving soil aggregated from 14 boreholes sampled during the site investigation.

Feature	Detail
Texture	Sandy Ioam – Sandy Clay Loam
Colour	Light to Orange Grey, Brown
Structure	Weak - Moderate – Stoney volcanics (south)
Category	Category 3
Indicative permeability (Ksat)	0.5 - 1.5
Design irrigation rate (DIR)	4.0

### 4.0 Wastewater system solution design

A generic 4-bedroom dwelling with a treatment plant and irrigation has been assumed for each Lot. Table 3 outlines indicative design based on these assumptions.

Table 3: Design features

Feature	Details	
Treatment system	Treatment plant	Taylex AB\$1500 (or similar)
	Treatment plant approval	
		18/2020-1 (or similar)
	Treatment level	
		Advanced Secondary
Design volume	Water supply	Mains (150L/E.P./Day)
	Number of bedrooms	4 Beds
	Number of people (E.P.)	6 E.P.
	Total design volume (Q)	900L
Soil characteristics	Category	Cat 3
	Design irrigation area rate (DIR)	4.0
Land application area	Application method	Surface Spray
	Required land application area	225m <sup>2</sup>
	Proposed land application area	225m <sup>2</sup>

The proposed lot's system designs are presented in Appendix B

#### 5.0 Setback distances

The <u>Queensland Plumbing and Wastewater Code V1:2024</u> Appendix Part 2, Table T2 and Table T3, outline the minimum setback separation distances for surface land application areas. These distances are presented in Figure 4.

Figure 4: Separation distances.

#### Part 2 - Setback Distances

Table T2 – Setback distances for subsurface land application area for a greywater treatment plant or an on-site sewage treatment plant

Feature	ontal separation distance●				
	Up slope	Down slope	Level		
Property boundaries, pedestrian paths, walkways, recreation areas, retaining wall, and footings for buildings and other structures.	2	4	2		
Inground swimming pools	6	6	6		
Inground potable water tank not exposed to primary effluent	6	6	6		
Inground potable water tank exposed to primary effluent	15	15	15		

<sup>•</sup> Distances are given in metres and are measured from the edge of trench/bed excavation or subsurface irrigation distribution pipework to the nearest point of the feature

Table T3 –Setback distances for surface irrigated land application area for a greywater treatment plant or an on-site sewage treatment plant

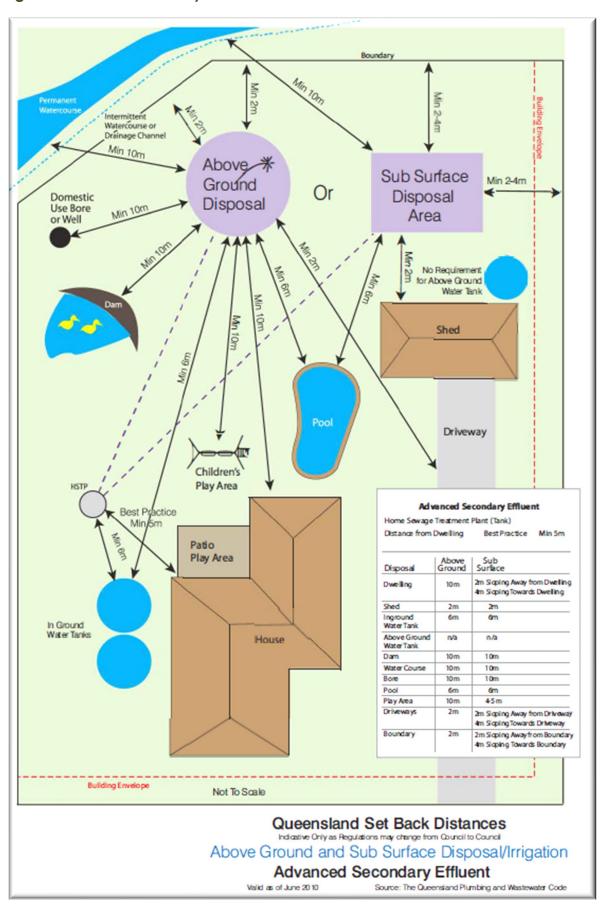
Feature	Horizontal separation distance ●
Property boundaries, pedestrian paths and walkways	2
Water edge of a swimming pool	6
Dwellings, recreation areas	10

Distances are given in metres and are measured from the edge of the irrigated wetted area to any point of the feature.

The proposed subdivision has intermittent waterways and creeks with natural gullies to shed surface water. A 10m setback is required for all onsite disposal solutions from advanced secondary HSTPs. See Appendix B for proposed land application areas (LAAs). Advanced Secondary Treatment is required with nutrient reduction further recommended.

The proposed lots are outside of a water supply buffer area.

Fig 5. Advanced Secondary Setbacks



#### 6.0 Effluent standards

Figure 6 presents effluent standards produced by approved wastewater treatment systems with surface irrigation. Any new wastewater system at the property must comply with these effluent standards.

#### Figure 6: Effluent quality

TABLE 2.1 (AS1546.3:2017)

# EFFLUENT COMPLIANCE CRITERIA FOR AN STS WITH NO NUTRIENT REDUCTION FACILITIES

D	Secondary et	ffluent	Advanced secondary effluent			
Parameter	90% of samples	Maximum	90% of samples	Maximum		
BOD <sub>5</sub>	≤ 20 mg/L	30 mg/L	≤ 10 mg/L	20 mg/L		
TSS	≤ 30 mg/L	45 mg/L	≤ 10 mg/L	20 mg/L		
E. coli *	≤ 10 cfu/100 mL	30 cfu/100 mL	≤ 10 cfu/100 mL	30 cfu/100 mL		
FAC †	Minimum 0.5 mg/L ‡	N/A	Minimum 0.5 mg/L ‡	N/A		
Turbidity §	N/A	N/A	N/A	10 NTU		

<sup>\*</sup> Where disinfection is required.

<sup>†</sup> Where chlorine disinfection is used.

<sup>‡</sup> Minimum level, not 90% of samples.

<sup>§</sup> Where UV light is used for disinfection (see Paragraph B3.1).

#### 7.0 Comments and recommendations

It is concluded that the reconfiguration of **101 SP255660** into 23 new residential lots are suitable to accommodate an onsite wastewater treatment and disposal systems.

These following recommendations and are made:

- A minimum level of advanced secondary treatment is required. We further recommend a make and model with nutrient reduction capabilities.
- > Surface irrigation is proposed as it requires minimal vegetation clearing during installation compared with other disposal methods.
- All setback distances outlined in the Queensland Plumbing and Wastewater Code are to be adhered. Sufficient room for the systems is provided within the lot's proposed size and locations, although the construction phase will need to engage wastewater designers early in the process.
- > The lots are of appropriate size and soil type to accommodate an irrigation system for a 4-bedroom dwelling with surface spray disposal, considering setbacks from surface water control features.
- > The outcomes of this report and assessment are indicative only and do not preclude the use of other types of wastewater systems on proposed lots.
- A site-specific effluent disposal report and council permit is necessary before installation of any wastewater system. The designs in this report are in no way prescriptive of size, method and location of any onsite disposal system.

Talal Dugri | Director

10 July 2025

BSc (Hons) Environmental Science (Monitoring and Management) QBCC 1514 4645





Report # Version 1.0

Purpose of Report New HSTP and LAA for a indicative new dwelling

Client: Tierra Construction Services Pty Ltd Client Ref.

Assessment Date Wednesday, 2 July 2025

Site Address: Fords Road Suburb: Adare Postcode 4343

Lot # 101 (Into 23 proposed lots)

Plan Details SP255660

Lot Size (m<sup>2</sup>) 267,100

Local Authority Lockyer Valley Regional Council

#### Comments

An indicative 4 bed dwelling is proposed on each of the 23 lots to be subdivided from lot 101. Each proposed lot requires onsite wastewater treatment via an Advanced Secondary HSTP. Onsite disposal is proposed via surface spray irrigation onto a maintained grassed area.

This report is to demonstrate the size and location of indicative dwellings only and does not allow for site specific assessment for any construction, beyond the lot's reconfiguration.

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#### Site and Soil Evaluation

Arcadia Environmental was commissioned by the Client to design an effluent disposal system at this property.

A copy of this report, the associated design plus the plumbing approval must be left at the property for the occupant's information.

This report was compiled with information provided by the Client and data obtainable during the desktop study of the property.

Arcadia Environmental takes no responsibility for alterations or amendments to information unavailable prior to the report date.

This report is prepared in accordance with AS/NZS 2012 On-site Domestic Wastewater Management and the Queensland Plumbing and Wastewater Code 2024.

#### **Site Details**

Site Address		Fords Road		Suburb		A	Adare				
Lot #	Into 23 proposed	Plan Details	SP255660	Postcode 4343		Lot Size (m²)	267,100				
Local A	uthority	Lockyer Valley Regional Council									
Purpose	of Report	New HSTP and LAA for a indicative new dwelling									
Number of	Number of Bedrooms 4 Equivalent Population (E.P.)					6.0					
Water S	Supply	Reticulate	ed Water	Water Allowance L/EP/Day		Water Allowance L/EP/Day 150		Water Allowance L/EP/Day 150		Water Allowance L/EP/Day 150	
Additional	Flow L/Day	(	)	Daily Water Usage (Q <sub>D</sub> ) (L)			900				

AS/NZS 1547:2012 P.125 Table J1 & P.121 Table H1

#### Site Assessment

Assessment Date	02 July 2025
LAA Conditions/Vegetation	Scrub
Exposure Conditions of LAA	Dappled Shade
Aspect	S
Gradient @ LAA (approx.)	4 deg or 7%
Slope/Drainage Config	Linear Planar
Rainfall in last 24 Hours (BOM)	0 mm
Ground Water Depth (mm)	Not encountered
	Vehicular access/driveway
Design/Site Considerations	Gradient of LAA
	Overland flow and flood overlay



#### AS/NZS 1547:2012 & AS1726-1993

Bore Log/Soil Profile - Hole #1	Texture	Structure	<u>Shade</u>	Hue/0	Colour	Descr	iption	Moisture	<u>Dispersive</u>	<u>Plasticity</u>	$K_{sat}$ (m/day)
0-150mm	Loamy Sand	Moderate	Α	OR	BR	LO	SO	М	NS	NP	
150-300mm	Loamy Sand	Moderate	Е	GY	BR	LO	SA	М	NS	NP	
300-550mm	Loamy Sand	Moderate	Е	GY	BR	LO	CL	М	NS	NP	
Bore Log/Soil Profile - Hole # 2	Texture	Structure	Shade	Hue/0	Colour	Descr	ription	Moisture	Dispersive	Plasticity	K <sub>sat</sub> (m/day)
0-150mm	Loamy Sand	Moderate	Α	OR	BR	LO	SO	М	NA	NP	
150-300mm	Loamy Sand	Moderate	Е	GY	BR	LO	SA	М	NA	NP	
300-550mm	Loamy Sand	Moderate	Е	GY	BR	LO	CL	М	NA	NP	0.7
Bore Log/Soil Profile - Hole #3	Texture	Structure	Shade	Hue/0	Colour	Descr	ription	Moisture	Dispersive	Plasticity	K <sub>sat</sub> (m/day)
0-150mm	Loamy Sand	Moderate	Α	OR	BR	LO	SO	М	NA	NP	
150-300mm	Loamy Sand	Moderate	Е	GY	BR	LO	SA	М	NA	NP	
300-550mm	Loamy Sand	Moderate	Е	GY	BR	LO	CL	М	NA	NP	
Adopted Soil Classification @ LAA	Loam	Moderate	Soil	Categ	ory @ L	AA	(	Cat 3	Ksat (Me	easured)	0.5 - 1.5

 $AS/NZS\ 1547:2012\ P.106\ Table\ E1;\ P.55\ Table\ 5.2;\ P.39\ Table\ 5.1;\ P.160\ Table\ M1; P.145\ Table\ L1$ 

#### Proposed Effluent Disposal Loading

Proposed Effluent Disposa	Method	Low Droplet Surface Spray		Required Effluent Quality	Adv. Sec.
Design Irrigation Rate	e DIR	4.0	Design Loading Rate DLR (mm/d)		20
DIR Reduction (% Due To Gradient)	4 deg or 7%	0	DLF		
Adopted Design Irrigation Ro	ite DIR	<b>4.0</b> DIR		DIR Land Application Area (m²)	

AS/NZS 1547:2012 P.160 Table M1

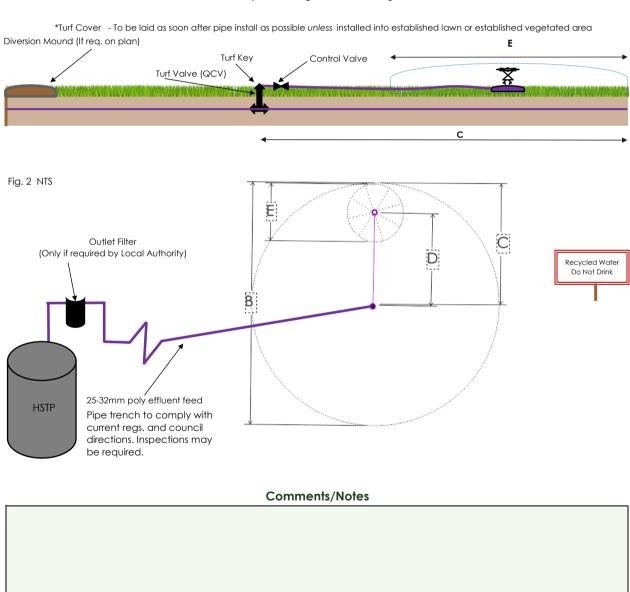
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#### Proposed Effluent Disposal Method: Wobbler Surface Spray Irrigation

		<i>,</i>				
Land Application Loading			Item	Item Description		Values
E.P.	6	#Beds x 1.5 <sup>{R}</sup>	A (Spray Zones)	2	2 Area/Zone (m²)	
Water Supply	150	LPP/d	В	Zone Diameter (m)		12.0
$Q_D$	900	L/d	С	Zone Radius (m)		6.0
DIR	4.0	mm/d	D	Hose Length (m)		3.0
Total Area	225	$m^2$ (Q <sub>D</sub> /DIR)	Е	Plume Max Ø (m)		6
Install Area	225	m <sup>2</sup>	F	Number of Control Valves (qty)		2
Loam	Cat 3		G	Number of Wobbler Heads (qty		2

AS/NZS 1547:2012 P.145 Table L1

#### FIG 1. Illustrative only - See design for onsite configuration and location



02 July 2025

Version #

1.0

AE22222

Assessment #

Assessment Date

#### PLEASE READ

This report is to be read in conjunction with the attached site plan detailing the effluent disposal design.

Any amendments or variations to the design may only be undertaken with written permission of Arcadia Environmental and the re-approval of the Local Authority, if a permit has already been applied for/granted.

Alterations requested after the presentation of the preliminary design, may incur a redraw fee. Call for details

#### **HSTP** and Land Application Area - Installer Notes

No installation of any part of this system is to commence without the plumbing approval, on hand.

The LAA shall only be installed if it the LAA is in the undisturbed ground assessed in this report. Call our office if unsure.

All irrigation pipework and fittings are to be Watermark approved and comply with AS 1477 or AS 2698.2. Installation to comply with AS/NZS 3500.2

If the HSTP is to be located in a Flood Zone, the top of tank must be 150mm above the highest flood AHD.

No cut and/or fill earthworks to be undertaken in the area are permitted, unless specified in the design or for diversion away from the LAA.

Prior to installation, it is advisable to minimise vehicular traffic in the LAA. Compaction will impact infiltration and run-off.

After installation, adequate measures are to be made to prevent vehicular traffic entering the LAA.

Vegetation shall be established over the LAA directly after installation, if required. If not part of the install - please liaise with client.

Signs to be installed at the LAA stating "Recycled Water - Avoid Contact- Do Not Drink". Signage to comply with AS1319 and visible @ 3m.

For all Form 8 requests, please email your Form 7 - Notification of responsible person to the address at the top of this page.

If a request to inspect the installation is not made with sufficient notice, photographs of the installation must be supplied for Form 8 issue.

Tank installation must follow maker's guidelines. Tank's Invert and final location to be determined by the licenced installer.

Some Local Authorities require outlet filters on spray irrigation (see approval).

Commissioning Agent to ensure even distribution is achieved with Service Agent to ensure ongoing even distribution.

Photos of the installation are always advised.

All work is to be conducted with care and compliance with occupational health and safety requirements and all relevant regulatory conditions.

Should you have any questions regarding this report and design, please contact us, referencing report number: AF22222

#### Responsibilities of the Occupant of the Property

It is important to follow the Operating Manual that came with your HSTP. If you do not have a copy, contact your tank's manufacturer.

If FULL water reduction fixtures are specified on page 2, the occupant is to have a front loader washing machine and appropriate fixtures.

A service agreement must be in place for the installed HSTP. This is required under the permit from the Local Authority.

The area should be vegetated with species tolerant of moisture and maintained to maximize evaporation and nutrient transport from the LAA.

If required, the LAA may need to be demarcated or fenced to prevent entry by people and animals.

Food waste disposal units are not recommended with HSTPs. Fat and grease from food preparation should be scraped into the bin.

Effluent shall not be used for the irrigation of fruit or vegetables.

Alterations to the property may impact calculations of this design. Contact us if your are planning any further connections to this system.

Do not dispose of wipes or feminine hygiene products into your sewer. The system is not designed to process these items.

Avoid detergents and soaps with high in phosphorous and bleach contents. Refer to manufacture's website for details.

It is recommended that the household water usage is spaced out over the week to avoid surging water through the system.

All stormwater uphill of the LAA is to be diverted away from the LAA

A range of information is available on local council's websites, relating to suitable species for planting, LAA setback distances, water saving tips.

For surface spray installations, the hoses should be regularly rotated about the centre point of each zone, to distribute the effluent evenly.

The LAA is to be maintained as per the accompanying design. Regular mowing or topping up of mulch is, as required.

#### Declaration

Arcadia Environmental was requested by the Client to provide a Site and Soil Evaluation and Design for an appropriate effluent disposal system in accordance with AS1547:2012, the Queensland Wastewater Code, Local Authority's requirements. Also, AS1289, AS2870:2011 and AS1726. I herby declare the information herein to be verifiable and correct. The installation and ongoing maintenance of the system is the responsibility of others. Product specific care and maintenance instructions must be followed to ensure the longevity of the designed system.

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Assessed	I and designed by	T. N. Dugri	Bud M.	Date	02/07/25
Assessment #	AE22222	Assessment Date	02 July 2025	Version #	1.0

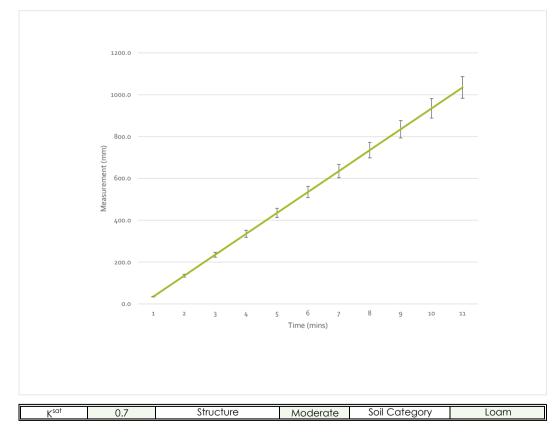


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**Permeability Test** 

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Assessment #		AE22222		Assessm	ent Date	02 July 20:	25	Version #	1.0
Client	Tierra Const	truction Service:	s Pty Ltd	Client Ref		0			
Site Address		Fords Road		Suk	ourb			Adare	
Lot #	101 (Int	o 23 proposed I	ots)	Post	code	4343		Size (m²)	267100
Plan Details		SP255660		Local A	Authority	Loc	ckyer Vo	ılley Regional Counci	
Reservoir interno	Diameter (mm)			3	35				
	uter Diameter (m			-	10			Method	
Test Hole radius		,		Į.	55				
Water Depth in				2	50			100mm auger	
Length of K <sub>sat</sub> Te					10	<u> </u>			
Reading (Min)	Reading (mm)	mm fall	AVG wat	er fall mm/min	Adopted Ksat	Notes			
Start Reading	35.0	0							
1	135.0	100.0						BH 1 - 8	
2	235.0	100.0							
3	335.0	100.0							
4	435.0	100.0							
5	535.0	100.0							
6	635.0	100.0		100.0	0.7				
7	735.0	100.0							
8	835.0	100.0							
9	935.0	100.0							
10	1035.0	100.0							
AVG mm/min	100	0.0							
Total mm Fall	100	0.0							

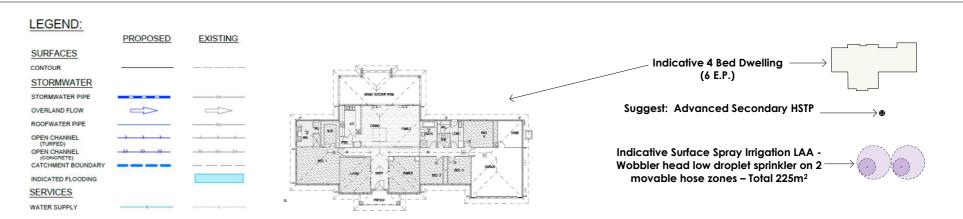
 $K_{\text{Sat}}$  Results

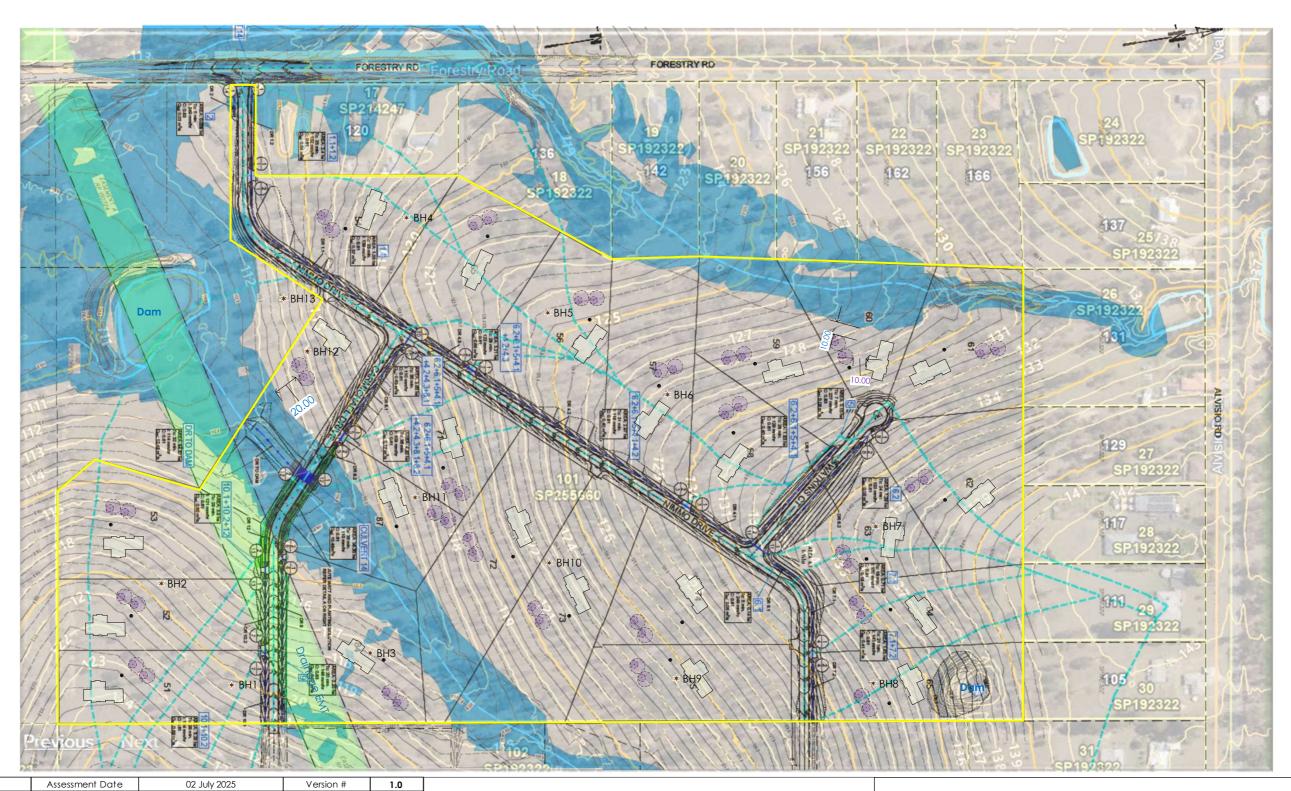


AS/NZS 1547:2012 Appendix G Clause G6 AS/NZS 1547:2012 P.145 Table L1

Assessment #	AF22222	Assessment Date	02 July 2025	Version # 1.0

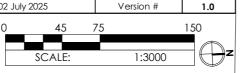
Site Address	Fords Road			Suburb		Adare	
Lot #	nto 23 proposed	Plan Details	SP255660	Postcode	4343	Lot Size (m²)	267,100
Local A	uthority	Lockyer Valley R	egional Council			` ' '	
Purpose	Purpose of Report New HSTP and LAA for a indicative						
Number of	Bedrooms		4	Equivalent Popul	ation (E.P.)	6.0	
Water	Supply	Reticula	ted Water	Water Allowance L/EP/Day		150	
Additional	Flow L/Day	0		Daily Water Usage (Q <sub>D</sub> ) (L)		e (Q <sub>D</sub> ) (L) 900	
Land Application Loading		Item	Item Description		V alues		
E	.P.	6	#Beds x 1.5 <sup>{R}</sup>	A (Spray Zones)	2	2 Area/Zone (m²)	
Wate	r Supply	150	LPP/d	В	Zon	Zone Diameter (m)	
	Q₀	900	L/d	С	Zone Radius (m)		6.0
[	OIR	4.0	mm/d	D	Hose Length (m)		5.0
Toto	al Area	225	m <sup>2</sup> (Q <sub>D</sub> /DIR)	E	Plume Max Ø (m)		2
Insta	all Area	225	m <sup>2</sup>	F	Number of Control Valves (qty)		2
Lo	oam	Cat 3		G	Number of	f Turf Valves (qty)	2





AE22222 Assessment # ARCADIA info@arcadiaenviro.com.au ENVIRONMENTAL COMENTAL COMENTAL

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Please note:

Measurements take precedent over scale. Contours are indicative.

With the exception of additional conditions added by the approving plumbing inspector, any alterations to this design, should be confirmed with our office, prior to installation.

# Queensland Government

#### **TREATMENT PLANT APPROVAL 18/2020-01**

Plumbing and Drainage Regulation 2019, part 4.

#### **Approval**

 The Taylex ABS/PABS-1500 ("the System") described in the Specifications and Drawings in the attached Schedule and manufactured by Taylex Australia Pty Ltd (ABN 43 646 051 989) ("the manufacturer") has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code).

Note: This treatment plant approval is applicable to both the ABS-1500 (concrete) and PABS-1500 (Poly) systems.

- 2. Approval is granted for the system as an **advanced secondary** quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Regulation 2019*, part 4 and the conditions of approval detailed below.
- 3. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.
- 4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

#### **Conditions of approval**

- 5. The manufacture, installation, operation, service, and maintenance of the systems must be in conformity with the conditions of this Treatment Plant Approval.
- 6. The system when tested by a certification accreditation body in accordance with AS1546.3:2017 was found to comply with the **advanced secondary** 10 EP/1500L level criteria and must continue to meet the following requirements:

Table 2.1 (Abrev) AS1546.3:2017 Advanced secondary effluent compliance criteria for an STS

Parameter	Advanced secondary effluent			
	90% of Samples	Maximum		
BOD⁵	≤ 10 mg/L	20 mg/L		
TSS	≤ 10 mg/L	20 mg/L		
E. coli*	≤ 10 cfu/100 mL	30 cfu/100 mL		
FAC⁵	Minimum 0.5 mg/L <sup>†</sup>	N/A		
Turbidity §	N/A	10 NTU		

<sup>\*</sup> Where disinfection is required

P Where chlorine disinfection is required

<sup>†</sup> Minimum level, not 90% of samples

<sup>§</sup> Where UV light is used for disinfection



#### **TREATMENT PLANT APPROVAL 18/2020-01**

Plumbing and Drainage Regulation 2019, part 4.

- 7. Each system must be serviced in accordance with the accreditation certificate issued by Global Certification (certificate number 40/22) on 09 February 2021, and details supplied in the owner's operation and maintenance manual.
- 8. Each system must be supplied with
  - a. a copy of this Treatment Plant Approval document.
  - b. details of the system.
  - c. instructions for authorised persons for its installation.
  - d. a copy of the owner's manual to be given to the owner at the time of installation.
  - e. detailed instructions for authorised service personal for its operation and maintenance.
- 9. At each anniversary of the Treatment Plant Approval date, the supplier must submit to the Chief Executive a list of all systems installed in Queensland during the previous 12 months. Where the Chief Executive is notified of any system failures the Chief Executive may randomly select several installed systems for audit. The Chief Executive will notify the supplier's nominated NATA accredited laboratory which systems are to be audited for BOD<sup>5</sup> and TSS. The sampling and testing of the selected systems, if required, is to be done at the supplier's expense. The following results must be reported to the Chief Executive;
  - a. Address of premises.
  - b. Date inspected and sampled.
  - c. Sample identification number.
  - d. BOD⁵ for influent and effluent.
  - e. TSS for influent and effluent.
- 10. The Chief Executive may, by written notice, cancel this approval if the manufacturer/supplier fails
  - a. to comply with one or more of the conditions of approval, or
  - b. within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
- 11. This approval may only be assigned with the prior written consent of the Chief Executive.
- 12. This approval expires on 12 November 2025 unless cancelled earlier in accordance with paragraph 10 above.

Lindsay Walker



Level 15, 53 Albert Street Brisbane GPO Box 2457, Brisbane Qld 4001 Telephone +61 7 3008 2557 Website www.hpw.qld.gov.au

ABN 61 331 950 314

Director

Plumbing, Drainage and Special Projects

Date approved: 12/02/2024



#### **TREATMENT PLANT APPROVAL 18/2020-01**

Plumbing and Drainage Regulation 2019, part 4.

#### **SCHEDULE**

ABS-PABS-1500

Attachment 1 – ABS-PABS-1500 - CAB Certificate number 40/22

Attachment 2 – ABS-PABS-1500 – Operators Manual Attachment 3 – ABS-PABS-1500 – Schematic diagrams

### **PRODUCT CERTIFICATE OF REGISTRATION**



## **Global Certification Pty Ltd**

**Number 40/22** 

Product Performance Testing AS 1546.3:2017 Advanced Secondary 1500 L/day or 10EP Level

# Taylex Australia Pty Ltd 56 Prairie Road Ormeau Qld 4208

Certification Date: - 19 August 2020 Expiry Date: - 19 August 2025

#### **Product Certified:**

Model	Disinfection	Average Results over the Test Period	Servicing Frequency	Discharge	Manufactured and assembled
Taylex Concrete ABS 1500 and Taylex Poly ABS 1500	Yes	TSS 7.6mg/I BOD₅ 1.5mg/I E coli 1.4 CFU/100mI	3 Monthly Service 3.2 yearly sedimentation pump out or as required	Pumped via disinfection/pump chamber with chlorine dispenser	Manufactured and Assembled at: 56 Prairie Road Ormeau Qld 4208

The system took 4 weeks to meet the advanced secondary standard. Note: The Ecoli result was compliant for the entire period from installation. The vertical axis tanks are certified to AS/NZS 1546.1:2008 for both the Poly and Concrete systems.

NACE CODES: 3700

This Certificate of Conformance to the Product Certificate Scheme for "Domestic Wastewater Treatment Units (Septic Tanks) and Rainwater Tanks" remains the property of Global Certification Pty. Ltd. and is granted subject to the terms and conditions of the Contract Application, in respect of the Product certified on this page and the attached schedule to the Certification of Conformance, bearing the same number as this certificate.

Date of Issue: 9 February 2021

**Bruce Smith Director** 

JAS-ANZ

www.jas-anz.com.au/register

Signed for and on behalf of Global Certification Pty Ltd PO Box 953 Belconnen ACT 2616

© Global Certification Pty Ltd. GC0050B R5 January 21



# Owner's Manual

Taylex Advanced Blower System

TAYLEX.COM.AU



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## **Trust Taylex**

Welcome to Taylex, an Australian family-owned company founded in 1969. We have 80 plus employees and over 90 trained wastewater specialists who market, install and service our range nationally in Australia and New Zealand. Post installation, we have a network of over 300 trained Service Technicians to provide the ongoing care and maintenance for your system.

We manufacture a range of products for Wastewater, Rainwater and Stormwater applications, we also offer Servicing for our wastewater systems. Taylex was the first company to manufacture Home Sewage Treatment Systems in Australia and we continue to be leaders in our field.

#### **Expertise**

With over 50 years of experience building our reputation, Taylex is the trusted voice for the wastewater industry. We work closely with the national manufacturers association and governing bodies to lobby for more stringent wastewater regulations to ensure the highest level of treatment is met and to provide you with the best results possible.

#### Integrity

We honour warranties. We stand behind our products, for their lifetime, no questions, no fine print. We are an Australian owned and made family business. We are passionate about producing quality products that work. We take care of our staff. We value the environment and human health.

#### Flexibility

Taylex has a system that will work for you. In difficult terrain or soil, for the size of your house and slope of your block, Taylex systems are adaptable, we are eager to work with you and become part of the solution.

#### Innovation

Taylex is at the cutting edge of environmentally sound wastewater treatment that is healthy and sustainable for your family and the environment. We are constantly testing and improving our systems to not only provide unparalleled quality and unmatched results, but to ensure the most stringent safety standards are met. We are constantly striving to improve and perfect.

#### Functionality

Our Systems work! Taylex use
Monolithic, single piece moulds
meaning no deteriorating seals or
weak post-joined walls, which could
expose your family to catastrophic
failure of your system. There's no
skimping on parts from the biggest
pump down to the smallest seal.
Our systems are designed and
engineered to last as long as your
home.



# What is a Wastewater Treatment System?

Taylex Wastewater Treatment Systems are safe, environmentally sound, reliable, and cost-efficient. Our advanced systems use natural processes to turn your household wastewater into clear, odourless water.

Secondary treatment systems are the most commonly used systems in Australia. They treat your household wastewater to a very high quality, allowing you to reuse your water in areas closer to your home and neighbouring properties, often above ground, with complete peace of mind.

Secondary Treatment Systems are designed to treat all the wastewater that is generated by your home. The wastewater includes the sewage (black water) that is discharged from the toilets and bidets and the sullage (grey water) that is discharged from sinks, washing machines, dishwashers, showers, and baths. Your Taylex ABS treats wastewater in an environmentally sustainable way by making use of the naturally occurring bacteria that are present in the wastewater. The system is designed to hold the polluted or degraded water in a series of compartments where various types of bacteria can flourish and in doing so, "treat" the water, naturally, without dangerous chemicals or additives.

Secondary Wastewater Treatment Systems are sometimes known by different names in different areas.

#### Here are some of the names you might have heard;

Home Sewage Treatment Plant (HSTP)
Secondary Treatment System (STS)
On-site Sewage Facilities (OSSF)
Aerated Wastewater Treatment Systems (AWTS)
Aerobic Treatment Units (ATU)
Aerobic Septic Systems
Wastewater Treatment Systems



# How does my Taylex Wastewater Treatment System work?

All household wastewater from your bathrooms, toilets, kitchen, and laundry naturally flows into your Taylex Wastewater Treatment System using gravity.

#### Step One

The first stop for your household wastewater is in the 'Primary Chamber'. Here solids will naturally sink to the bottom and fats and oils will naturally float to the top, leaving a clearer "Supernatant Zone" in the middle. This zone will transfer to the next stage of treatment.

#### **Step Two**

Next is the 'Secondary Chamber'. Further settling happens here. Again, water from the middle flows onto the next stage, there is an additional "Bio-Mass" block in this chamber to assist with the separation of solids. In a traditional Septic System, this is where the journey would end and effluent would now be pumped onto your property and into our environment, relying on sand or soil to do the rest. With a Taylex Wastewater Treatment System, there are still four more steps to produce clean, clear, safe water for your yard.

#### Step Three

The 'Aeration Chamber' is next up. This is where the magic happens. Your quiet, reliable, energy-efficient Nitto Blower sends oxygen into the chamber in the form of tiny bubbles. These bubbles pass through a specially designed structure called "Bio-Mass". Bio Mass is purpose designed to trap the air bubbles to feed naturally occurring 'Aerobic bacteria'. These microscopic Eco-Warriors are now hard at work, chomping through most of the remaining organic matter, polishing the water, and eliminating odour.

#### **Step Four**

Step four is in the 'Clarification Chamber'. More settling occurs here. Once settled to the bottom, this potent mix of Aerobic bacteria and fine particle solids are recirculated to the Primary Chamber to keep it healthy and working hard (not smelly).

#### **Step Five**

The final step in the treatment process is the 'Disinfection Chamber'. The water gets a 'kiss' goodbye from our Chlorinator which removes any harmful bacteria, viruses and pathogens. Using less chlorine per litre than your average swimming pool, the system removes any harmful bacteria, viruses and pathogens.

#### Step Six

Lastly, when the Disinfection Chamber fills up, your dependable irrigation pump automatically switches on to send your water out to do its job in your yard. Crystal clear water irrigates your designated area and returns safely to nature, contributing to a healthy water cycle.



# What keeps my system healthy?

#### Food

Your household wastewater is rich with organic matter that nourishes the good bacteria in your Taylex ABS. 'Food' comes from toilets, hand basins, sink, showers, washing machines, in fact anything natural that we put down the sink or flush down the toilet.

#### Air

The Taylex system is fitted with a Nitto air blower that takes fresh air and introduces it to the water through an aerator diffuser. The oxygen in the air dissolves into the water as it bubbles up to the top. This gives the water a higher than normal dissolved oxygen content allowing the good bacteria to breathe, live and treat your wastewater.

#### **Regular Servicing**

For the Taylex system to work to the best of it's ability, it needs to be serviced every 3 months. Not only is this regulation, it guarantees your system is getting the adequate care it needs.



# What upsets the balance in my system?

The greatest cause of problems for Wastewater Treatment Systems are harmful cleaning products and the washing machine. When using household cleaning products, please remember to:



Adhere to the cleaning product manufacturer's recommended measured dosage. Do not free pour.



Use cleaning products that are bio-degradable, low phosphorus and labelled 'Safe for onsite treatment systems'.

#### **Antibiotics**

Never pour antibiotics down the sink or flush down the toilet. This can cause problems throughout the system.

#### **Cleaning Products**

The good bacteria in your treatment system may class certain cleaning products as poisons if high levels are used. Please always use environmentally friendly products. Your treatment system relies on bacteria for it to work effectively, therefore any product labelled as anti-bacterial can be harmful to your system if used frequently or in large doses. Any bleaches or harsh chemicals should only be used once a week and in small doses, if required. The use of harsh chemicals in high levels can affect the function of your system.

#### Washing Machines

Try to evenly spread your washing over the course of the week. Avoid, where possible, washing everything in one day. It puts a large amount of water into your treatment system all at once, and puts uneccesary strain on your system. Liquid soaps breakdown more easily than powder. Only use the amounts as outlined on the label.

### Suitable Products

#### **Dishwashing Liquids**

As a rule of thumb, it is always recommended to go for dishwashing liquids labeled as 'Environmentally Friendly' or 'Green'. In general, products that are non-toxic, non-chlorine based, and biodegradable are considered safe.

#### **Surface Cleaners**

Similar to the above, it's suggested to look for environmentally friendly products. It is also important to look out for products which are non-antibacterial or harsh chemically.

#### **Toilet Cleaners**

The majority of cream cleaners are usually deemed suitable. Similarly, you want to look for products that are biodegradable, natural, and environmentally friendly. Toilet fresheners are not recommended.

#### Floor Cleaners

It is recommended to use hot soapy water to clean floors. Using floor cleaners is generally acceptable at controlled levels. It's advised to stay away from heavy chemical cleaners.

#### Laundry Powders, Liquids and Bath Salts

Select low phosphorus, sodium and sulphur products. Washing soda can occasionally be added (less than half a cup) to help reduce foaming if necessary. When using Epsom salts in your bath, use small amounts, less than 2 cups of Epsom salt per bath, no more than once per week.

#### Pet / Animal Washing In Basins

Pets are treated with products to maintain their health (especially fleas). If washed in a laundry, bath, or shower, the treatment used could flow through to the system and cause operational problems.



#### **Personal Hygiene**

When considering products to use for soaps and body wash we strongly advise looking for the following; organic ingredients, PH balanced, low-phosphorous or phosphorous-free, non-toxic, biodegradable products, low in sodium and sulphur.

#### A Note On 'Greywater and Septic Safe' / 'Biodegradable'

Whilst most of the time products labeled as 'greywater safe', 'septic safe', or 'biodegradable' are safe for use in your treatment system. Many plant-based cleaners are powerful antibacterials. Some products marketed as 'Green' or 'biodegradable' can be more damaging to our environment than more traditional cleaning products. When selecting cleaning products, if in doubt, always look for products that are phosphate-free or low phosphate.

#### Too Much Of Anything Is A Bad Thing

When using cleaning products in your home, always remember that too much of anything can harm the good bacteria in your system. Moderation is key.

#### **Please Note**

If your technician notices there is a problem, they may recommend that you limit the use of specific products (even if it is listed here as suitable).

Taylex promotes the use of low phosphorus, phosphorus free, low sodium & low sulphur products. This practice will reduce the phosphorus levels released to the environment and prolong the life of your phosphorus removal filter (if fitted).

Treatment Plant Approval
Approved by: Lindsay Walker
Delegated Authority
Department of Energy & Public Works

### **Products to Avoid**

#### **Strong Antibacterials**

Cleaning products which contain any of the following should only be used in small doses in your Taylex System; bleaches, disinfectants, whiteners, chlorine, anti-bacterials (Natural anti-bacterials such as Eucalyptus and Teatree oils included).

#### Caustic Oven or Drain Cleaners

Drain cleaners can do more harm then good for your system. If you want to safely clean your drains, we recommend the traditional method of vinegar and baking soda as a safe and effective alternative.

#### **Sanitary Products**

Products such as Nappy liners, sanitary pads, condoms, ANY wipes, non biodegradable sanitary products should never be flushed, as they will not break down in your system.

#### Kitchen Related Products

Avoid putting things such as dairy products, cooking oils, excess food scraps and anything from your home brew kit down the sink, drains or toilet. Garbage disposals are not permitted to be used with any wastewater treatment system.

#### **Excess Water**

Using too much water in one go can be bad for your system. It can cause the system to block or not flow as efficiently as it should. As a result, your system can shut down or smell. To avoid this, spread out activities which require high water usage, such as doing the laundry or dishes and taking baths/showers.

#### Other Things To Avoid

Never put, automotive oils, hair dyes, antibiotics, bandages, dead fish / small animals and hair down the sink, drain or toilet. Doing so can cause extensive damge to your system.



# Servicing your Wastewater Treatment System

Taylex treatment systems are required to be serviced quarterly and may only be serviced by licensed wastewater service personnel. Not only is it a council requirement, Taylex servicing will also:

- Ensure that all council reporting requirements are met.
- ✓ Send your service reports to your local council on your behalf (where required).
- Send your reports and invoices to you electronically (when possible).
- Provide spare parts to current contract holders at a discounted rate.

- ✓ Offer an extended warranty of 3 years for electrical and mechanical parts if you hold a current service contract and the parts were installed by us. Standard warranty is 12 months.
- ✓ In the unlikely event of a breakdown or emergency, we prioritise call outs for our current customers and charge at a discounted rate.

# HOW CAN YOU ASSIST IN SERVICING YOUR TAYLEX WASTEWATER TREATMENT SYSTEM?

- ✓ Do not cover the top of the tank with decking, earth, gravel, mulch, concrete, pavers, pot plants, barbecue, swing set, seats, etc.
- ✓ Provide clear, safe access to the system and the inspection openings. Ensure that plants, trees, and grass around the system are trimmed and cut.
- ✓ If you have a locked yard, provide your service person with a key (if you are not going to be present during the service).
- ✓ Make sure surface water does not pool and can never enter the tank, even during torrential rain events.



# Operating Instructions - ABS Eco Controller

#### Introduction

The Taylex ABS Eco Controller has a number of features that are explained in this section.

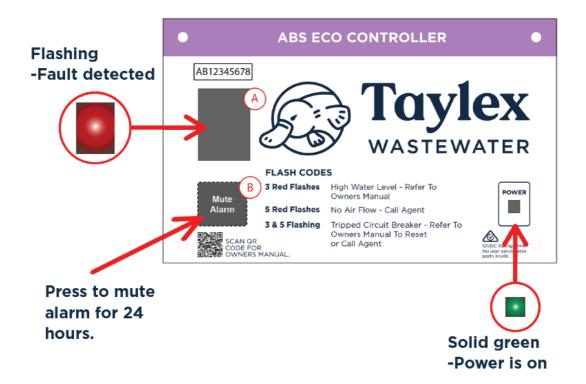
The Eco Control Panel monitors and controls the Treatment System's air blower, pump and registers an alarm when it detects a fault in the system.

The Taylex ECO Controller Assembly (complete with Controller, Control Panel Box, 3 x GPO Assembly and Blower Box) is classed as electrical equipment and has been certified to comply with AS/NZS3820 and AS/NZS 3100:2017, meeting the Electrical Safety requirements in Australia and New Zealand. Your Taylex ABS is designed to operate automatically and its operation will usually be event free. The Eco Control Panel provides visual and audible indictors of both normal operating conditions and fault conditions.

#### Normal Operation at Start-up

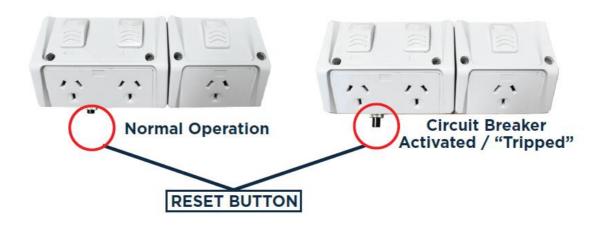
When the power is switched on to your Taylex ABS Eco Control Panel, the display (A) will flash twice. The audible alarm will sound in unison with the 2 flashes, this is a TEST MODE. At the completion of the Test Mode, the display will show a single green light in the 'Power' indicator to indicate that the system has tested correctly and is in normal operation.





#### **The Power Supply**

The power outlets for the ECO Controller for your system are located inside the Blower Box. Each switch must be in the ON position at all times. If any or all switches are OFF, the treatment process and alarms may not function. The single GPO is for the 240V – 12V power supply for your controller and the double GPO is for your Pump and Blower. The double GPO contains a 7amp breaker underneath the GPO, which will activate in the case of a fault with the pump and/or blower. If the breaker is activated it will trigger the associated alarm on the Controller. You can reset the Breaker by pushing in the reset button (see page 16 for full instructions). If the breaker is activated again, please contact your Service Agent to rectify the issue.



#### **Optional Extra**

A 12volt In House Alarm Panel is available as an optional extra to the system. If required, the panel can be fitted during the installation of the system. The In House Alarm Panel is connected to the same circuit as the Alarm, situated on the system, and works in tandem with the same functions listed above. To mute the In House Alarm, press the red button, this will silence the alarm. The alarm at the system will still function, and needs to be muted separately. The LED light on the In House Alarm panel will continue to flash until the fault is rectified.





# Who to Contact for Help and Troubleshooting

Before you call for help, and to avoid unnecessary call-out fees, check these items:

- 1. Is the power turned ON at the system?
- **2.** Are there lights ON in the panel face?
- **3.** Has a Safety Switch tripped in your main switchboard or subboard?
- **4.** Has the irrigation hose become kinked, preventing the system pumping out?
- 5. If you have removable "Turf Keys" on your sprinklers, make sure they are engaged properly, PUSH DOWN HARD (Surface irrigation only).
- **6.** Is the irrigation outlet filter blocked? (If fitted)

# Resetting your system

If you have identified an issue, once it is fixed you can try **resetting your system**:

- Turn the system OFF, remove the 4 screws on the (Blue or Green) blower box cover and turn the single power point ONLY OFF. This will reset the program.
- **2.** Turn the system ON again using the single power point switch.
- 3. If the system starts and operates correctly, observe the system over the next few days for another ALARM event and discuss it with your Service Agent.
- If the system goes back into ALARM mode, call your Service Agent. Limit your water usage until the fault is rectified.

Contact your local wastewater specialist.

taylex.com.au 1300 TAYLEX



# **Alarm Codes (Trouble Shooting)**

Alarm	Meaning	Action
1 Flash	Normal Operation	None required
3 Flashes	The water level is high	Please see below
5 Flashes	There is no airflow	Call your Service Agent
3 & 5 Flashes	Tripped Circuit Breaker	Reset Breaker or call your Service Agent

#### 3 Flashes - High Water Alarm

A high water level may be self-correcting. It can be caused by multiple sources of water coming in, overloading the system. If you think this may have occurred, then wait for 15 minutes until the surge flow has stopped and see if the alarm stops. If sprinklers are still operating (if applicable), recheck the alarm when they stop to see if the alarm has stopped. If it does not then check the following:

- 1. Is there a filter on the irrigation line before the effluent disposal area? Is it blocked?
- **2.** Is the irrigation line kinked or broken?
- **3.** Has the irrigation pump failed?
- **4.** Surface irrigation Are all the turf valves connected?

If you can rectify any of these problems yourself, then you will save the callout cost of your Service Provider. However, they are experts in this field and will assist you whenever you need their help. Call them whenever you need their assistance or you are in doubt about what you need to do. They will happily assist you over the phone.

#### 5 Flashes - No Air Flow

When your alarm has 5 flashes it means no air flow. This is usually an indication that the blower is not working properly. this can be caused by a range of things, for example, if your system short circuits.

If this alarm is activated for your system, we suggest you call your local wastewater specialist.

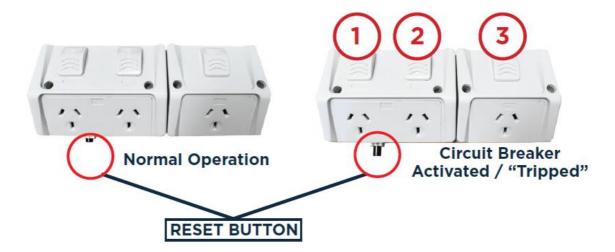


#### 3 & 5 Flashes - Tripped Circuit Breaker

When your alarm has 3 and 5 flashes, this means you have a tripped circuit breaker. This can be caused by issues with the aerator or other electrical components. If this happens refer to the diagram below and reset the breaker.

#### Resetting the Breaker

- Remove the 4 screws on the blower box.
- Underneath the double power point locate the button as shown below.
- **3.** Turn off both switches (1 = Pump & 2 = Blower)
- 4. Push in the reset button and wait 10 seconds.
- 5. Switch on switch 1 and wait 10 seconds.
- 6. Switch on switch 2 and wait 10 seconds.
- 7. If the circuit breaker "Trips" when either one of the switches are turned on, this would indicate there is a problem with the pump or blower. Leave the faulty switch in the off position and notify your service agent immediatley.
- 8. If the system doesn't alarm, monitor for the next 3 days.
- 9. If the system continues to alarm, call your local wastewater sepcialist.





# Warranty

Every Taylex ABS Wastewater Treatment System is covered by a full manufacturer's warranty. There is a 15 year warranty\* on the pre-cast concrete or rotary moulded plastic tanks. There is also a 3 year\* warranty on all electrical and mechanical components, including the irrigation pump (a 12 month standard warranty and a further 24 months extended warranty is available when you purchase your 2nd and 3rd year of service calls with a Taylex Approved Service Agent). Warranties apply from the date of commissioning or 90 days from the date of purchase (whichever is sooner).

This guarantee does not cover damage caused by misuse, neglect, failure to keep the unit clean and functional, accident, use of incorrect power supply, or repair and / or attempts to repair by unauthorised personnel. The benefits conferred by this warranty are in addition to all other rights and remedies in respect of the product which the consumer has under the Trade Practices Act and other legislations.

# TO ENSURE YOUR WARRANTY IS VALID, THE FOLLOWING SHOULD BE OBSERVED:

**DO NOT** use system or allow wastewater to enter tanks before power services are available to the System and a Taylex Authorised Specialist has been notified of pending occupancy of the property and has subsequently commissioned (activated) the system.

**DO NOT** cover lids with soil

DO NOT position decking, concrete paths or driveways over System

**DO NOT** allow surface water to enter the System by incorrect falls and landscaping around the system.

**NEVER** turn the power off unless instructed to do so by your Service Agent

\* Terms and Conditions apply





### **RCM Compliance Certificate**

Certificate No.: 20/RCM/13 Date of Issue: 31 July 2020

Certificate Holder: Taylex Industries Pty Ltd

Address: 56 Prairie Road, Ormeau, QLD 4208

Equipment: Controller for waste water treatment tank

Brands: "Taylex"

Model No's: ABS Controller; and ABS ECO Controller

QEC Global certifies that the above article meets the requirements for use of the RCM as follows:

Electrical Safety Standards: AS/NZS3820:2020 & AS/NZS 3100:2017 +A1 & A2

Evidenced by: CPC Test Report No. 90644-19-70-20-PP001 (for ABS Controller) to

AS/NZS 3100:2017 +A1 & A2 (demonstrating compliance with essential

safety requirements of AS/NZS3820)

'ABS ECO Controller' same as 'ABS Controller' except ELV supplied electronic circuitry via safety isolating PSU covered under approval

certificate SAA132096EA

EMC Standard: AS/NZS61000.6.3:2012

Evidenced by: EMC Services Pty Ltd Test Report No. 80606 (for ABS Controller)

EMC Services Pty Ltd Test Report No. 191204 (for ABS ECO Controller)

EESS National Equipment Database Supplier Registration Number: E4296

RCM required to be marked on all stock sold:

On behalf of QEC Global

P// +61 7 5429 6999 A// PO Box 552, Maleny QLD 4552

#### Attachment 3 – ABS-PABS-1500 – Schematic

