Queensland Government

TREATMENT PLANT APPROVAL 09/2022

Plumbing and Drainage Act 2018

Approval

1. The **Aussie Treat Model 20 (13EP/2000L)** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **Aussie Treat Pty Ltd** ("the manufacturer") (ABN 45 659 690 310) ("the manufacturer") has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 March 2019.

2. Approval is granted for the advanced secondary quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Regulation 2018*, and the conditions of approval detailed below.

3. This approval, the conditions of approval and the Schedule comprise the entire Treatment Plant 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 13EP/2000L level without nutrient reduction effluent criteria and must continue to meet the following requirements:

TABLE 2.1 (AS1546.3:2017)

EFFLUENT COMPLIANCE CRITERIA FOR AN STS WITH NO NUTRIENT REDUCTION FACILITIES

Parameter	Secondary effluent		Advanced secondary effluent	
	90% of samples	Maximum	90% of samples	Maximum
BOD_5	≤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	5 NTU

* Where disinfection is required.

† Minimum level, not 90% of samples.

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

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7. Each system must be serviced in accordance with the accreditation certificate 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; and
   (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 a number of installed systems for audit. The Chief Executive will notify the supplier's nominated NATA accredited laboratory which systems are to be audited for BOD^5 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) BOD^5 for influent and effluent; and
   (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 09 November 2027 unless cancelled earlier in accordance with paragraph 10 above.

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

Lindsay Walker
Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy
Date approved: 10 November 2022

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ABN 61 331 950 314

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TREATMENT PLANT APPROVAL No. 09/2022
Plumbing and Drainage Act 2018

SCHEDULE

Attachment 1

Drawings and Specifications for the

Aussie Treat Model 20 (13EP/2000L)

Treatment Plant Approval
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Department of Energy & Public Works

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AussieTreat - Model 20 Wastewater System

Congratulations on installing an AussieTreat Model 20 wastewater system. You can now relax and enjoy many years of hassle-free onsite wastewater treatment. Your AussieTreat wastewater system has been well designed and tested to comply and surpass the requirements of Australian / New Zealand Standard 1546.3 2017 / Qld Plumbing and wastewater code.

Compliance to the above-mentioned standards ensure a quality product that is robust, reliable and fit for purpose. The AussieTreat wastewater system is the product of tried and tested principles refined over 20 years in the wastewater manufacturing / service industry.

System Specifications

Advanced Secondary Effluent:

Biochemical Oxygen Demand (BOD5) <10mg/L

Total Suspended Solids (TSS) <10mg/L

Escherichia Coli (E.Coli) <10cfu/100ml

Free Available Chlorine (FAC) Minimum 0.5mg/L

Optimum Ambient Temperature Range: 5 DegC- 41DegC

Average Water temp as tested 22.2 Deg C

Sludge accumulation in primary chambers would reach aprrox 50% in 5 years if the system was operated at 2000L per/day and therefore would need a pumpout. It is however, recommended that the sludge levels be measured every year so a more accurate pumpout frequency can be realised.

Kilowatt hours per day (kWh/day) =1.8

Kilowatt hours per 1000L (kWh/1000L) =0.94

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System Description & Treatment Process

AussieTreat Model no.20

Hydraulic Loading - 2,000 L/Day maximum.

Total System Operating Volume - 5742L

Emergency Reserve above normal operating volume - 2241L

The AussieTreat model 20 wastewater system is constructed in a purpose-built single concrete tank with internal concrete walls/baffles. These internal concrete wall/baffles extend right to the lid and divide the system into five (x5) separate chambers.

1. Primary Chamber 1
2. Primary Chamber 2
3. Aeration Chamber
4. Clarification Chamber
5. Disinfection / Pumpwell Chamber

Primary Chamber 1

Influent enter the wastewater system via the 100mm inlet in primary 1. Chamber 1 has an operating capacity of approx. 1508L. Primary chamber 1 is responsible for retaining gross solids and anaerobically treating the influent.

Primary Chamber 2

Hydraulically displaced flow from primary 1 now enters primary 2 via a 100mm junction. Primary 2 is also responsible for further retaining gross solids and anaerobically treating the influent. Primary 2 has a working capacity of 848L bringing the total primary operating capacity of the AussieTreat model 20 to approx. 2356L. A flow control device that feeds the aeration chamber is also located in Primary 2. The flow control is air powered via the air blower. The flow control system is designed to capture the peak flows and evenly distribute the flow to the system over the next couple of hours. Sludge returning from the clarifier is also mixed with inflow from primary 1 in primary 2.

Aeration Chamber

Flow via the flow control or gravity overflow junction now enter the aeration chamber with a working volume of approx. 2109L. The aeration chamber is responsible for mixing and aerobically treating the waste stream. This chamber has two separate media packs and two diffusers which allows the aerobic bacteria to thrive.

Clarification Chamber

Flow from the aeration chamber now enters the clarification chamber where conditions are quiescence. These conditions allow for suspended solids in the waste stream to be settled out and returned to the primary tank for storage via a sludge return. An air operated skimming devise is also utilised in the clarification chamber. The waste flow is then screened on the exit of the clarifier to prevent and solids making their way to the disinfection /pumpwell chamber.

Disinfection / Pumpwell Chamber

The pre-screened clarified waste stream now enters the disinfection / Pumpwell chamber via the tablet chlorinator. Once chlorinated, the flow then falls into the chamber where a half approx. level is maintained. A tertiary air operated filter is also located in the disinfection pumpwell. This filter serves two (x2) purposes. 1. To ensure the chlorine is well mixed throughout the chamber and 2. Provide tertiary filtration to the treated waste stream before it is pumped out. Finally, the treated wastewater is now pumped to the designated land application area via a submersible pump.

Electrical Control / Components

Electrical Control Box - PLC operated.

Air blower failure and high-water alarms.

Audible and visual alarms with mute button and 24hr reset.

Air Blower - Hiblow HP100 or equivalent.

Irrigation pump. – Submersible sized for specific land application areas.

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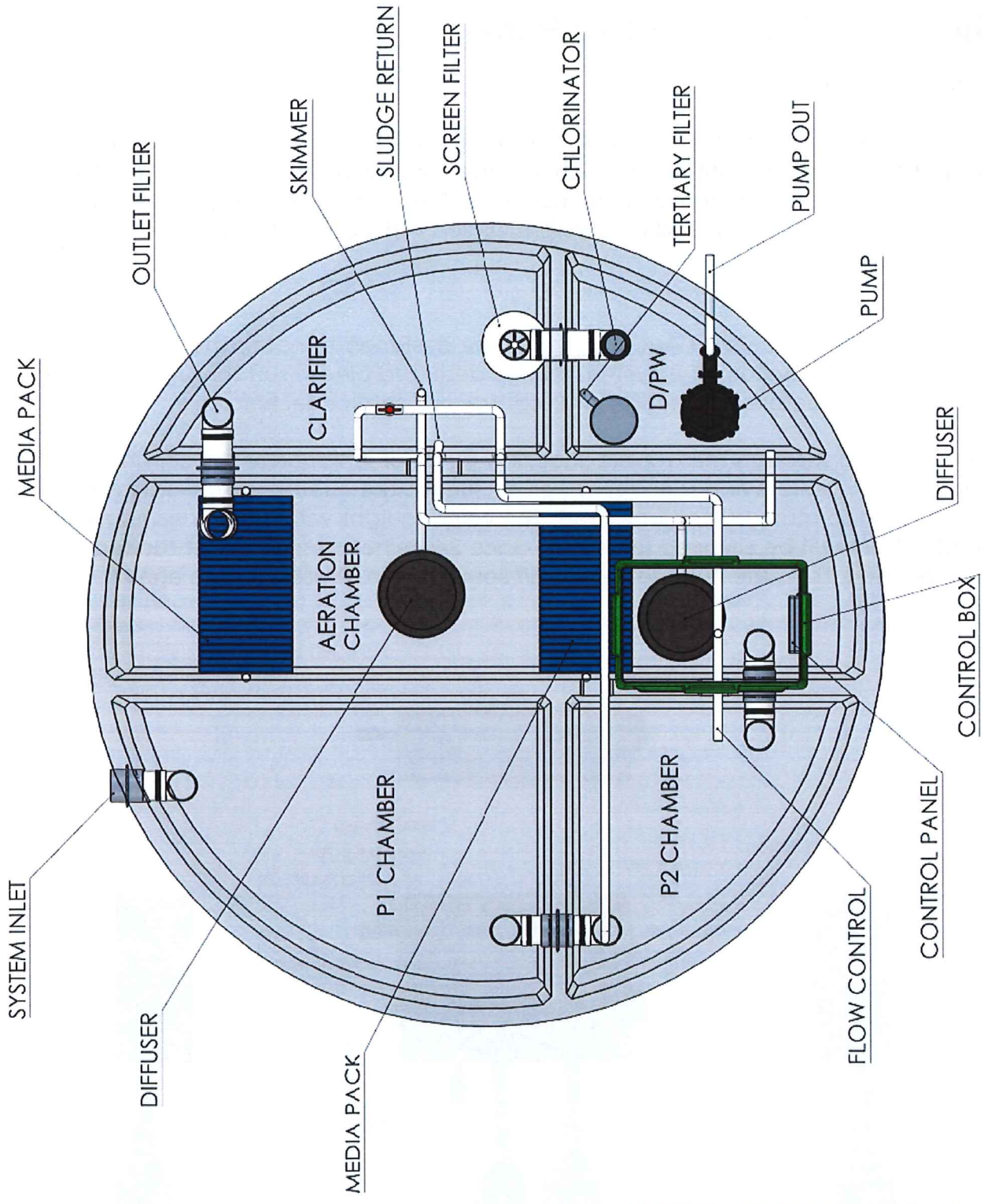
System Diagram



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Electrical Control / Alarm System

The AussieTreat Wastewater Treatment System is fitted with a specifically designed and built electrical control panel. The purpose of the control panel is to effectively run the electrical components of the wastewater system and to notify the owner of system faults. Power should never be switched off to the system even in low occupancy periods without consulting you service technician.

The AussieTreat Control Panel

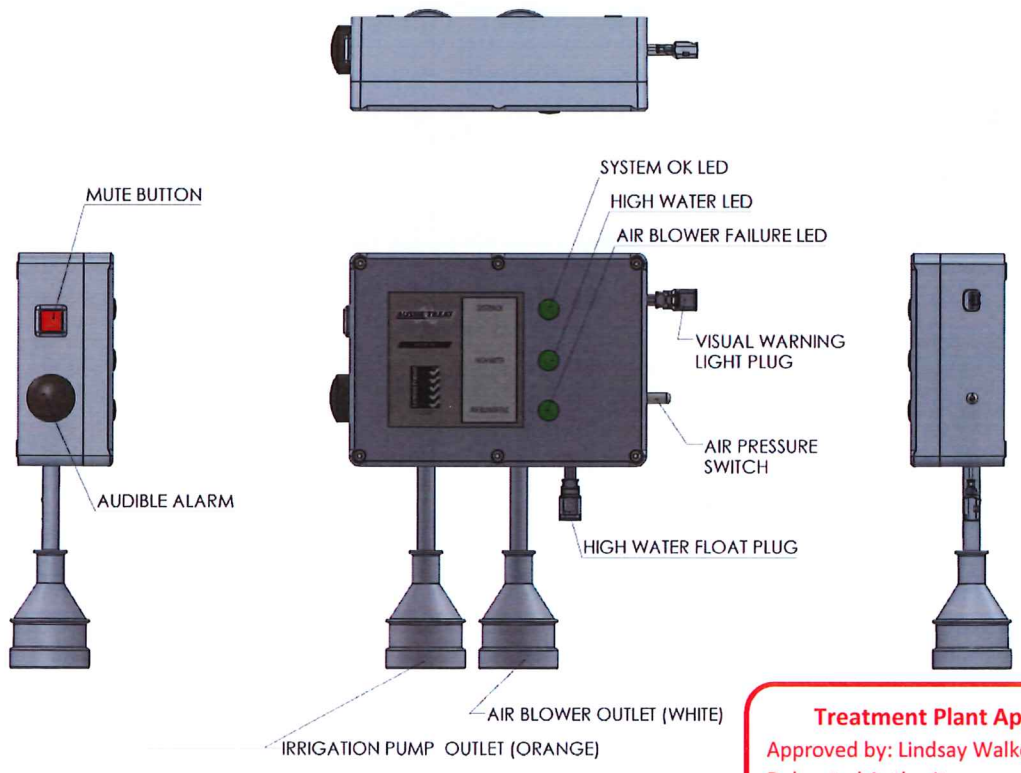
Normal Operation

When power is switched on to the AussieTreat wastewater system the control panel will go through a start-up routine in which as series of audible beeps will signify the system checking hardware and components connected. At the end of this process the System will commence operation and the System Ok led will start to flash.

Visual and Audible Alarms.

The AussieTreat Visual and Audible alarms are designed to notify the home owner of a fault within the system. If a system fault is detected please run through the trouble shooting guide before contacting your contracted service technician.

While working through the trouble shooting guide or waiting for the service technician to arrive it is possible and recommended to silence the audible alarm. This is done by pressing the mute button one time. The warning light will remain flashing and the audible alarm will be silenced for 24hrs. Once 24hrs has passed and if the fault has not been rectified, then the audible alarm will sound again. Press to mute again.

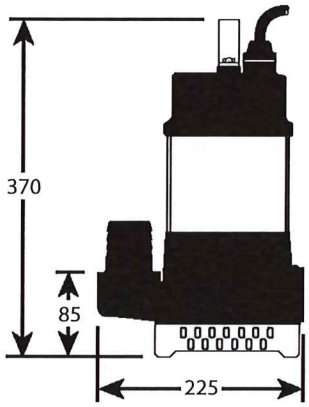


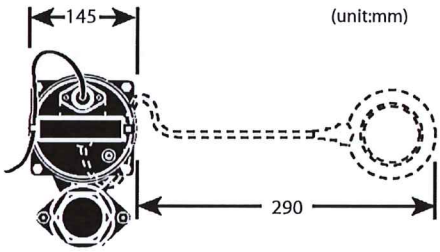
Trouble Shooting Guide

Possible Alarm State	Possible Causes	Action
Highwater Alarm	Blocked irrigation filter or outlet.	Check for kinked / squashed irrigation hoses. Call service technician.
	Irrigation Pump Failure	Call service technician.
	High rainfall event allowing rainwater ingress	Check land application area to see system discharging if possible. Wait till rain event finishes and check alarm state. Call service technician if not resolved.
Low air pressure	Air blower failure.	Call service technician.
	Broken air manifold or connection.	Call service technician.
Slow moving toilet or wastepipe in house	Blockage or restriction in drain pipe to system. Blockage or restriction in system.	Call service technician.
	Irrigation pump failure.	Call service technician.
	Loss of power to system	Check safety switch in house electrical board.

Equipment Specifications

Davey D25 Irrigation Pump





Outlet - 1 ½" F
Weight - 9kg

OPERATING LIMITS	
Capacities to	240 lpm
Maximum total head	12m
Maximum submergence	10m
Maximum operating temperature	50°C
Suitable Fluids: Clean or "grey water" of neutral pH containing up to 10% small soft solids or 1% fine solids. Some wear should be expected while pumping hard solids in suspension.	

MATERIALS OF CONSTRUCTION	
Part	**Material**
Motor top	Polycarbonate (D15), Cast Iron (D25/40)
Pump body	Cast iron
Motor shell	304 stainless steel
Strainer	304 stainless steel
Impeller	Polycarbonate (D15), Cast Iron (D25/40)
Lip ring	Nitrile
Mechanical seal	Silicon carbide/ceramic in oil bath w/- oil seal Carbon/ceramic on motor side (D25/40)
Seal and bottom bearing housing	Cast iron
Handle	304 stainless steel
Fasteners	304 stainless steel
Float & power supply leads	HO7RN-F oil resistant

ELECTRICAL DATA			
Supply voltage/Hz	240V/50Hz single phase		
Cable length	10m		
Output	150W	250W	400W
Start	9.0A	12.0A	10.5A
Run	1.5A	2.2A	3.7A
Speed	2 pole, 2850rpm		
Insulation class	F		
IP rating	X8		
Starting	P.S.C.		

INSTALLATION & PRIMING

Use a rope to position and retrieve the pump. Do not lower or retrieve the pump using the power lead as this may damage the cable entry seals, causing water leaks and unsafe operation.

Don't use this product for recirculating or filtering swimming pools, spas, etc. While these pumps are built to high safety standards, they are not approved for installations where people will be in the water while they are operating.

Don't pump abrasive materials. Sand and grit in the water being pumped will accelerate wear, causing shortened pump life.

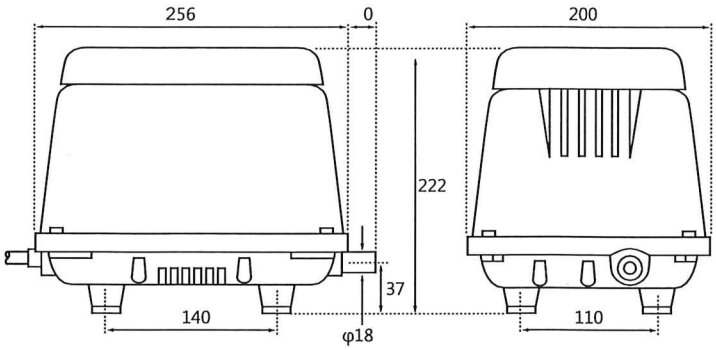
Keep your pump clean, particularly in situations where lint, hair or fibrous materials may get bound around the pump shaft. Regular inspection and cleaning will extend pump life.

Make room for the float switch to operate. Automatic models have a float switch to turn them on when the water level rises and turn them off again when it has been pumped down to the safe operating level of the pump. If the float switch is not free to rise and fall, correct pump operation may not be possible.

Don't run your pump dry. Non-automatic models must be switched off manually or by way of an external float/level switch when the water level is reduced to the top of the pump housing.

Hiblow HP 100

(unit : mm)



	HP-100		HP-120		HP-150		HP-200	
Rated voltage [V]	AC100 / 120 / 230							
Power frequency [Hz]	50	60	50	60	50	60	50	60
Rated pressure [kPa]	17.7				20			
Airflow volume [L/min]	100		120		150		200	
Power consumption [W]	95	100	115	125	125	155	210	250
Sound level [dBA]	38		40		45	47	46	48
Weight [kg]	8.5				9			

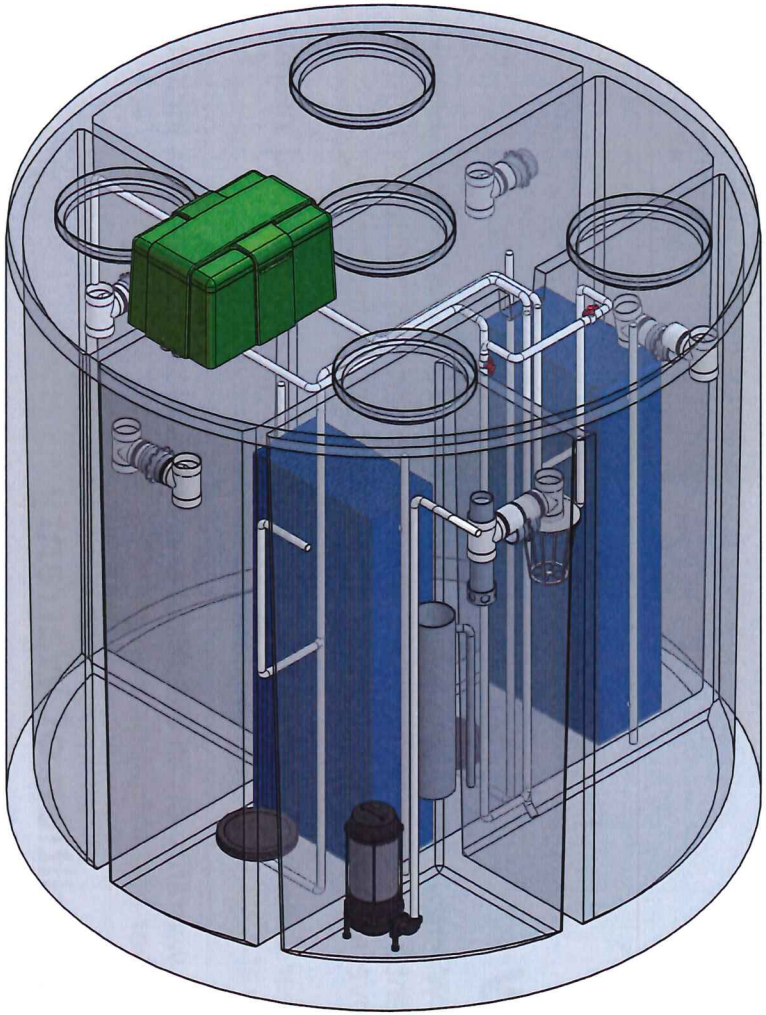
Warranty

The AussieTreat Wastewater System has been well designed and constructed using quality components to ensure many years of reliable operation. With this in mind, the AussieTreat is covered by a full manufacturers warranty as stated below:

- 15 Year Structural warranty on the precast concrete tank and internal concrete walls.
- 2 Year warranty on all electrical and mechanical components including the air blower and irrigation pump.

Terms and Condition of Warranty

1. The warranty stated above is valid from the installation date.
2. Damage or failure from misuse or installation faults are not covered by this warranty.
3. Failure to have the system commissioned or serviced as per the maintenance schedule will immediately void all warranties.
4. All component failures must be returned to AussieTreat at the cost of the owner. AussieTreat reserves the right to repair or replace to their discretion.
5. Any cost incurred due to system failure or warranty process shall be incurred by the system owner.



Treatment Plant Approval
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AUSSIE TREAT

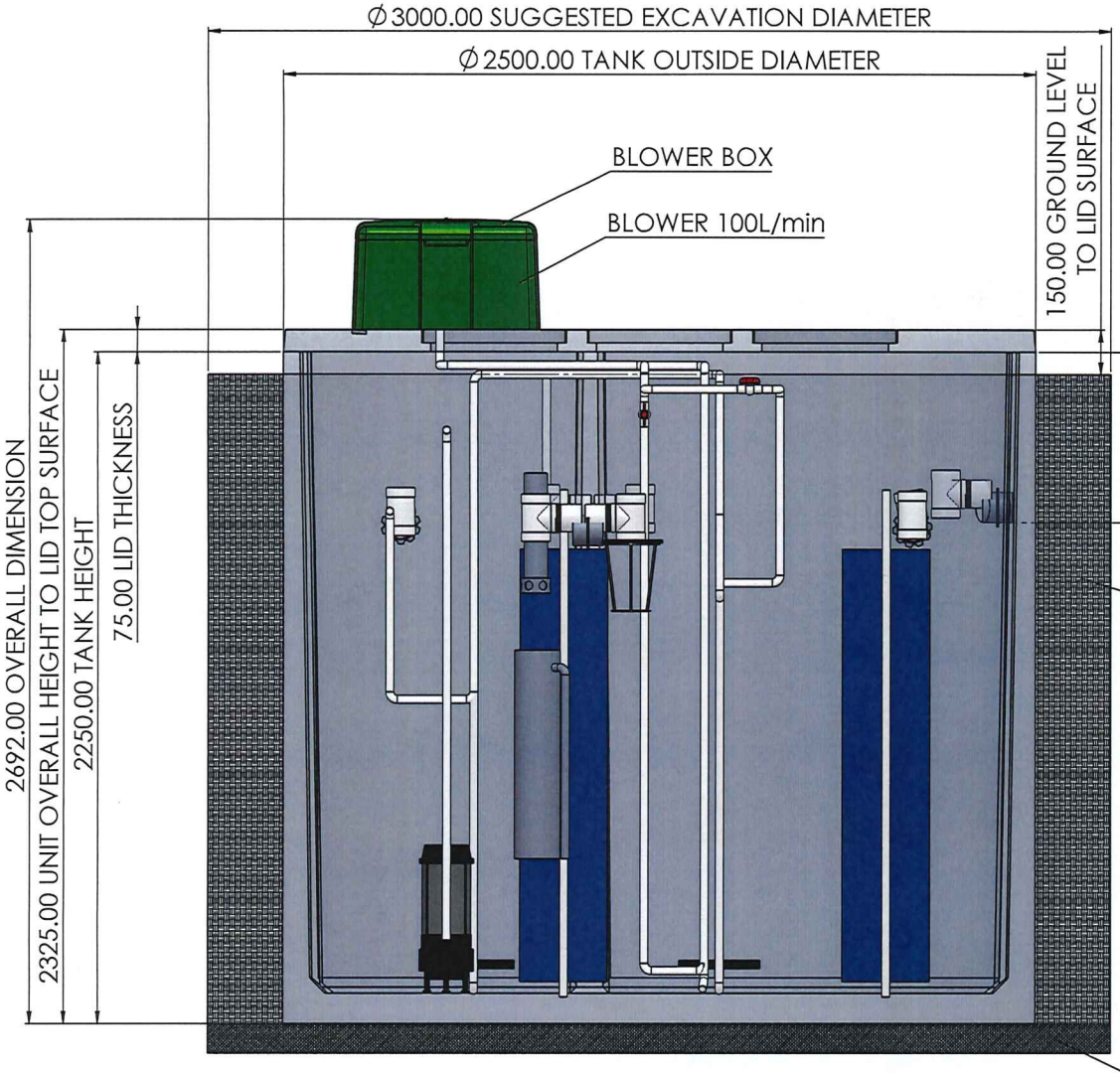
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: X 0.5, X.x 0.2, X.xx 0.01 ANGULAR: +/- 0.2deg	FINISH:				DEBUR AND BREAK SHARP EDGES	
DO NOT SCALE DRAWING					REVISION	
Copyright ALL ABOUT WASTEWATER PTY LTD.						
	NAME	SIGNATURE	DATE			
DRAWN	J SURMAN		22.08.2022			
CHK'D	J SURMAN		22.08.2022			
APP'VD	J SURMAN		22.08.2022			
M'G						
Q.A				MATERIAL:		
				WEIGHT:		

TITLE:

AUSSIE TREAT TREATMENT SYSTEM MODEL 20

DWG NO. A2

SCALE SHEET 1 OF 14



SPECIFICATIONS	
Primary Pre-Treatment Chamber	1508L
Second Pre-Treatment Chamber	848L
Aeration Chamber	2109L
Clarifier	924L
Chlorination/Pumpwell	352L
Total Operating Capacity	5741L
Total Holding Capacity	7982L

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CHK'D	J SURMAN		22.06.2022
APP'VD	J SURMAN		22.06.2022
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MATERIAL:
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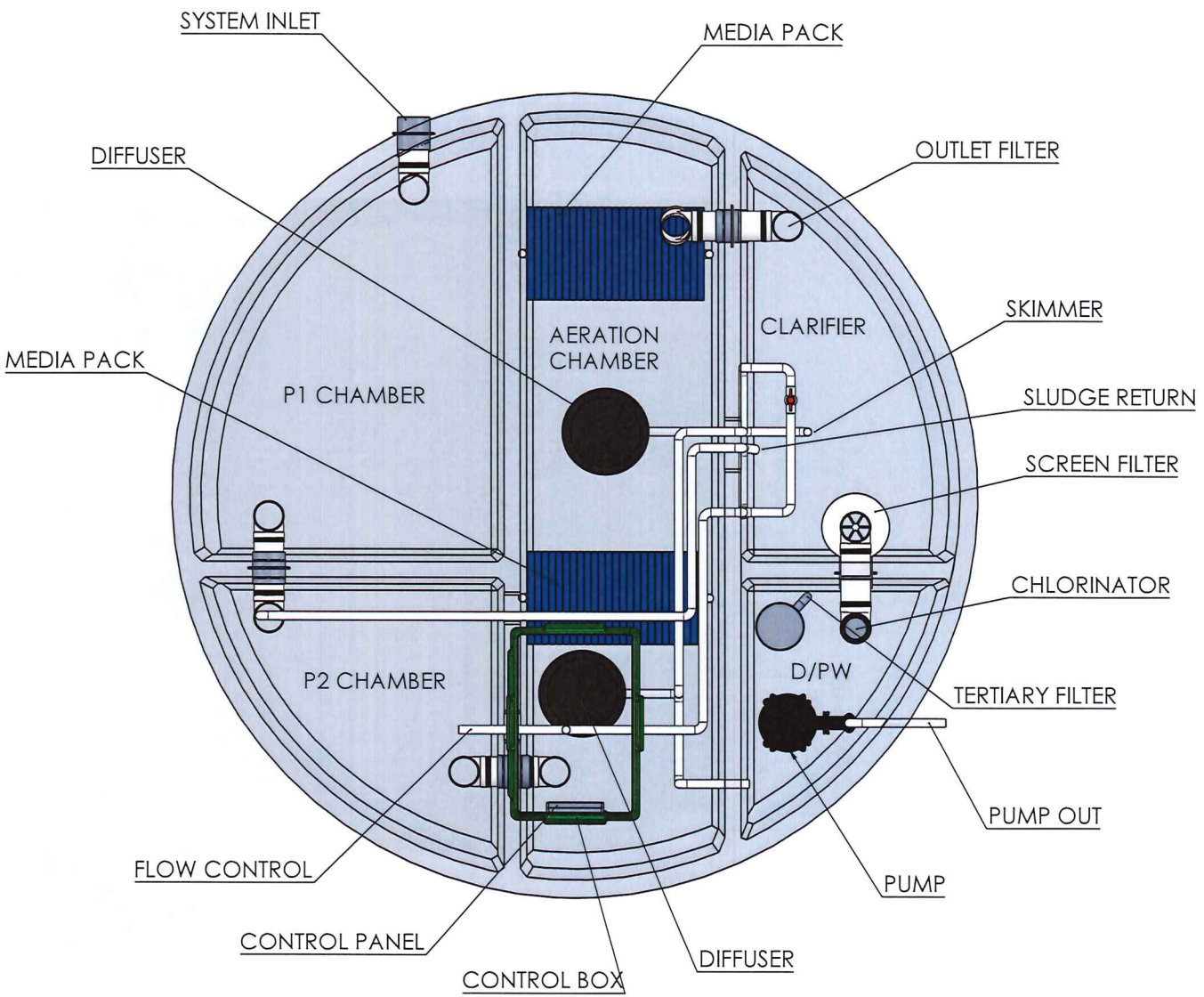
TITLE: AUSSIE TREAT TREATMENT SYSTEM MODEL 20

DWG NO. | A2

SCALE | SHEET 3 OF 14



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MATERIAL:

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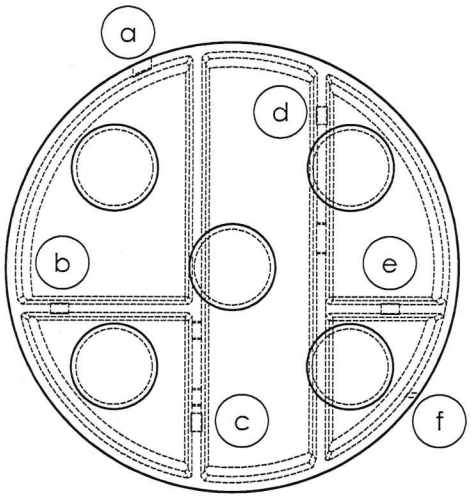
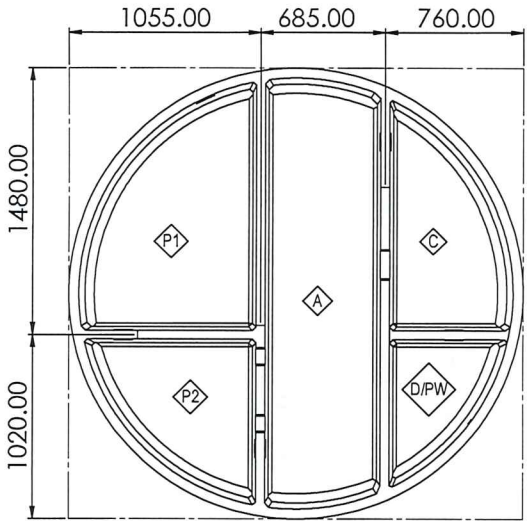
DWG NO. A2

SCALE





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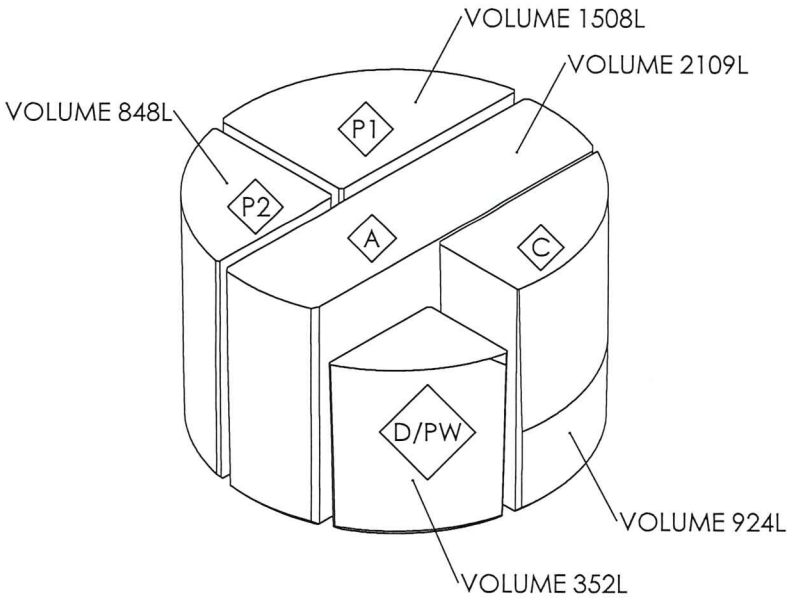

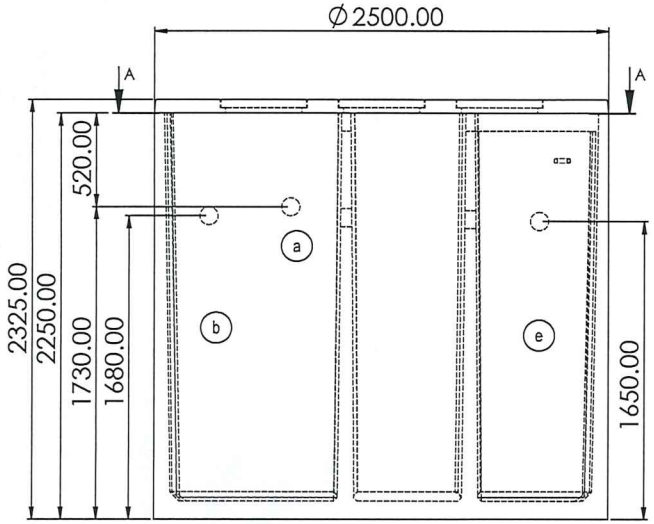

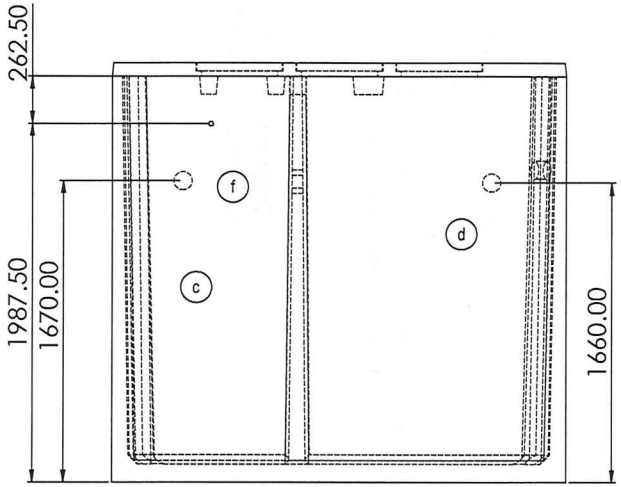

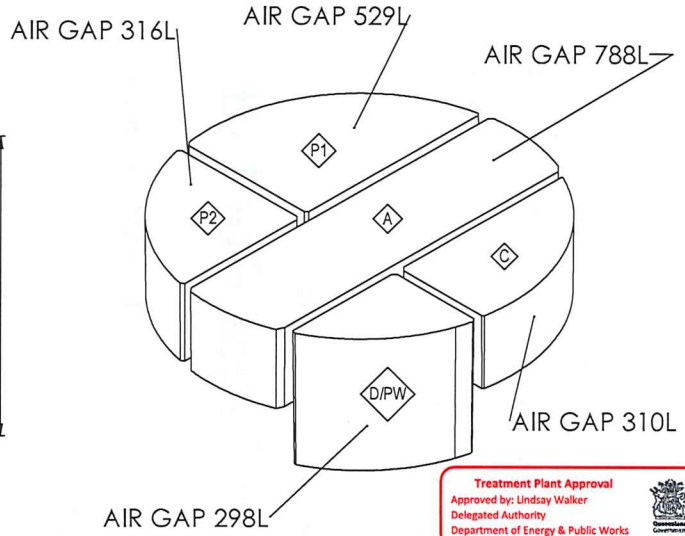

PENETRATION	DESCRIPTION	SIZE
a	Inlet	100mm
b	Overflow	100mm
c	Overflow	100mm
d	Overflow	100mm
e	Overflow	100mm
f	Discharge Outlet	25mm

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LINEAR: X 0.5, X.x 0.2, X.xx 0.01
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FINISH:

DEBUR AND BREAK SHARP EDGES

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APP'VD	J SURMAN		15.02.21
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MATERIAL:

WEIGHT:

TITLE:
AUSSIE TREAT TREATMENT SYSTEM MODEL 20

DWG NO. A2

SCALE

SHEET 4 OF 14

STANDARDSMARK LICENCE

SAI Global hereby grants:

Aussie Treat Pty Ltd

ABN 45 659 690 310

22 Laurel Court, Cashmere, QLD 4500, Australia

StandardsMark Licence

Manufactured to:

AS 1546.3:2017 - On-site domestic wastewater treatment units - Secondary treatment systems

"the StandardsMark Licensee" the right to use the STANDARDSMARK as shown below only in respect of the goods described and detailed in the Schedule which are produced by the Licensee or on behalf of the Licensee* and which comply with the appropriate Standard referred to above as from time to time amended. The Licence is granted subject to the rules governing the use of the STANDARDSMARK and the Terms and Conditions for certification and licence. The Licensee covenants to comply with all the Rules and Terms and Conditions.

Licence No: SMK41079

Issued : 7 October 2022
Expires : 15 February 2027

Originally Certified : 16 February 2022
Current Certification : 5 October 2022

Calin Moldovean
President, Business Assurance
SAI Global Assurance

Certified Product™ Australian Standard

JAS-ANZ
WWW.JAS-ANZ.ORG/REGISTER

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

Queensland Government

** For details of manufacture, refer to the licensee*

SAI GLOBAL
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SCHEDULE TO
STANDARDSMARK LICENCE

SAI Global hereby grants:

Aussie Treat Pty Ltd

22 Laurel Court, Cashmere, QLD 4500, Australia

StandardsMark Licence

Manufactured to:

AS 1546.3:2017 - On-site domestic wastewater treatment units - Secondary treatment systems

Model identification of the goods on which the STANDARDSMARK may be used:

Brand Name & Model ID	Treatment Capacity (Litre / Day)	Treatment Type	Compliance Type	Disinfection Method	Tank Types and Capacities	Service Interval	Date Endorsed
AussieTreat - Model 20	2000	Aerated wastewater treatment system	Advanced Secondary	Chlorine Tablets	Vertical concrete tank with 2 Primary chambers(1508 & 848L), Aeration chamber (2109L), Clarification chamber(924L), & Chlorination/Pump well (352L). Total Tank operational volume = 5741L. + Air Gap/Emergency storage of 2241L = Total volume of 7982L.	3 months	10 Feb 2022

End of Record

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

Queensland Government

Licence No: SMK41079 **Issued Date:** 7 October 2022

This schedule supersedes all previously issued schedules

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