

## TREATMENT PLANT APPROVAL 07/2021

*Plumbing and Drainage Act 2018*

### Approval

1. The **BioSeptic Performa 2000** (“the system”) described in the Specifications and Drawings in the attached Schedule and manufactured by **BioSeptic Pty Ltd** (ABN 95 056 461 226) (“the manufacturer”) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 October 2017.
2. Approval is granted for the 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 secondary quality wastewater treatment system, which is an example of the approved systems, may only be used on premises that generate per day:
  - (a) a maximum hydraulic loading of 1,500 litres; and
  - (b) a maximum organic loading of 700grams BOD<sup>5</sup>
7. The system must continue to meet the requirements of secondary quality wastewater treatment system, producing the following effluent quality:
  - (a) 90% of the samples taken must have a BOD<sup>5</sup> less than or equal to 20 g/m<sup>3</sup> with no sample greater than 30g/m<sup>3</sup>.
  - (b) 90% of the samples taken must have total suspended solids less than or equal to 30g/m<sup>3</sup> with no sample greater than 45g/m<sup>3</sup>.
  - (c) 90% of the samples taken must have a thermotolerant coliform count not exceeding 200 organisms per 100 mL with no sample exceeding 1000 organisms per 100 mL.
  - (d) Total chlorine concentration must be between 0.5g/m<sup>3</sup> and 2.0 g/m<sup>3</sup> in four out of five samples taken.
8. Each system must be serviced in accordance with the details supplied in the owner’s operation and maintenance manual.
9. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.

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Delegated Authority

Department of Housing & Public Works

10. 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.

11. 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<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) BOD<sup>5</sup> for influent and effluent; and
- e) TSS for influent and effluent.

12. 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.

13. This approval may only be assigned with the prior written consent of the Chief Executive.

14. This approval expires on 01 January 2024 unless cancelled earlier in accordance with paragraph 12 above.

**Treatment Plant Approval**

Approved by: Lindsay Walker  
Delegated Authority  
Department of Housing & Public Works

Lindsay Walker

**Director**  
**Plumbing, Drainage and Special Projects**  
**Building Legislation and Policy**

Date approved: 04 February 2021

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**TREATMENT PLANT APPROVAL No. 07/2021**  
*Plumbing and Drainage Act 2018*

**SCHEDULE**

**Attachment 1**

Drawings and Specifications for the

**BioSeptic Performa 2000**

**Treatment Plant Approval**

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## 4. BioSeptic Performa AWTS Product Specification

|   | Application item   | Description or specification   |
|---|--|--|
| a | <b>Brief description</b>   | The BioSeptic Performa AWTS is a compact sewage treatment plant that processes all household wastewater before its disposal to a land application area. The Performa is contained in two concrete tanks. The process consists of primary settling, aeration, secondary clarification and disinfection.                 |
| b | <b>Design Parameters</b><br>Influent strength  | BOD <sub>5</sub> -70g/person or 700g/day<br>SS - 70g/person or 700g/day<br>TN - 15g/person or 150g/day<br>TP -2.5g/person or 25g/day   |
| c | <b>Normal &amp; peak capacity</b><br>Normal operating flow<br>Peak design capacity   | Up to 10 persons.<br>150L/person or 1500L/day.<br>Tested at 600L/hour/minute and 2137L/day.  |
| d | <b>Septic Tank</b><br>Tanks of similar dimensions to those shown on the drawing from other manufacturers may be used.<br><br>Operation | 3550L.<br>The Everhard 3900L septic tank is a similar size.<br><br>Reduces Biochemical Oxygen Demand in Five Days (BOD <sub>5</sub> ) & Suspended Solids (SS) by settling solids. There is anaerobic digestion of solids and scum.   |
|   | <b>Performa treatment tank</b><br>Tanks of similar dimensions to those shown on the drawing from other manufacturers may be used.      | 3750L.<br>The Everhard 3900L collection well is a similar size.<br><br>The clarifier and pump chamber are manufactured as a single concrete unit. The concrete unit is placed into the centre of an accredited collection well of suitable dimensions and capacity, thus dividing the tank into two aeration chambers. |
|   | <b>Aeration chambers</b><br><br>Air blower<br>Dissolved oxygen (DO)<br><br>Operation   | There are two discrete aeration chambers with two sintered polyethylene air diffusers in each chamber. 80 or 100L/minute.<br>>2.0g/m <sup>3</sup> .<br>During accreditation testing the average DO over six months was 5.88 mg/L.<br>Reduction of complex compounds in the waste to simple compounds.                  |
|   | <b>Bacterial support media</b><br><br>Operation  | 89m <sup>2</sup> of submerged plastic media.<br>8g of BOD <sub>5</sub> removed/m <sup>2</sup> surface area.<br>Provides substrate for the bacteria.  |
|   | <b>Secondary clarifier</b><br><br>Operation  | Capacity - 500L.<br>Surface area - 0.5m <sup>2</sup><br>Equipped with surface skimmer and waste sludge return<br>Settles SS and recycles and wastes MLSS and MLVSS to maintain Cell Residence Time (CRT)   |

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|   |  |  |
|---|--|--|
|   | <b>Chlorinator</b><br>Operation  | Erosion tablet type<br>200 mg tablets of Sodium Trichlorocynuric acid<br>Adds chlorine to stream for pathogen kill   |
|   | <b>Chlorine contact chamber</b><br>Operation   | Capacity 300L<br>Provides >30 minutes (actually 1.5 hours) of residence time to ensure pathogen kill   |
|   | <b>Pump Chamber</b><br>Operation   | Capacity/pump cycle- 100L<br>Holds treated water prior to discharge to the disposal field  |
| e | <b>Pump</b><br><br>Pump failure<br><br>High water/pump failure alarm                 | Automatic submersible type with integral float switch control.<br>10m- 40 head as required to suit disposal field design.<br><br>Pump failure causes the treated water to rise in the pump chamber and create positive pressure in an air switch in the control box.<br>The high water audio/visual alarm is activated at a remote alarm panel mounted in a prominent position adjacent to the tanks or in the house.<br>The audio alarm can be muted, but will sound again every 24 hours until the fault is repaired.  |
| f | <b>Aeration</b><br>Air supply<br>Dissolved oxygen (DO)<br><br>Low air/blower failure | Aeration is provided by an air blower<br>80 or 100L/minute<br>>2.0g/m <sup>3</sup> .<br>During accreditation testing the average DO over six months was 5.88 mg/L.<br>The air blower maintains pressure on an air switch in the control box. If the blower fails the lack of pressure causes the air switch contacts to open to create an alarm.<br>The low air audio/visual alarm is activated at a remote alarm panel mounted in a prominent position adjacent to the tanks or in the house.<br>The audio alarm can be muted, but will sound again every 24 hours until the fault is repaired. |
| g | <b>Control box</b>   | The control box supplies power to the pump and blower and contains the pump and blower failure air switch alarms. It is placed inside the cover box on top of the treatment tank with the air blower.  |
| h | <b>Alarm System</b><br>High water/pump failure alarm<br><br>Low air/blower failure   | Pump failure or a disposal pipe blockage causes the treated water to rise in the pump chamber and create pressure in an air switch in the control box. The pressure causes the contacts to close to activate the alarm.<br>The high water audio/visual alarm is activated at a remote alarm panel mounted in a prominent position adjacent to the tanks or in the house.<br>The audio alarm can be muted, but will sound again every 24 hours until the fault is repaired.<br>The air blower maintains pressure on an air switch in the control box. If the blower fails or a pipe breaks the    |

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|   |                          |  |
|---|--------------------------|--|
|   |                          | <p>low pressure causes the air switch contacts to open to create an alarm.</p> <p>The low air audio/visual alarm is activated at a remote alarm panel mounted in a prominent position adjacent to the tanks or in the house.</p> <p>The audio alarm can be muted, but will sound again every 24 hours until the fault is repaired.</p> |
| i | <b>Service intervals</b> | The BioSeptic Performa is serviced at three month intervals.   |
| j | <b>Desludging</b>        | The septic tank is desludged when the sludge level is more than one third deep in the primary tank or as required by regulatory requirements. The aeration chambers are checked and may be desludged at the same time.   |

**Treatment Plant Approval**

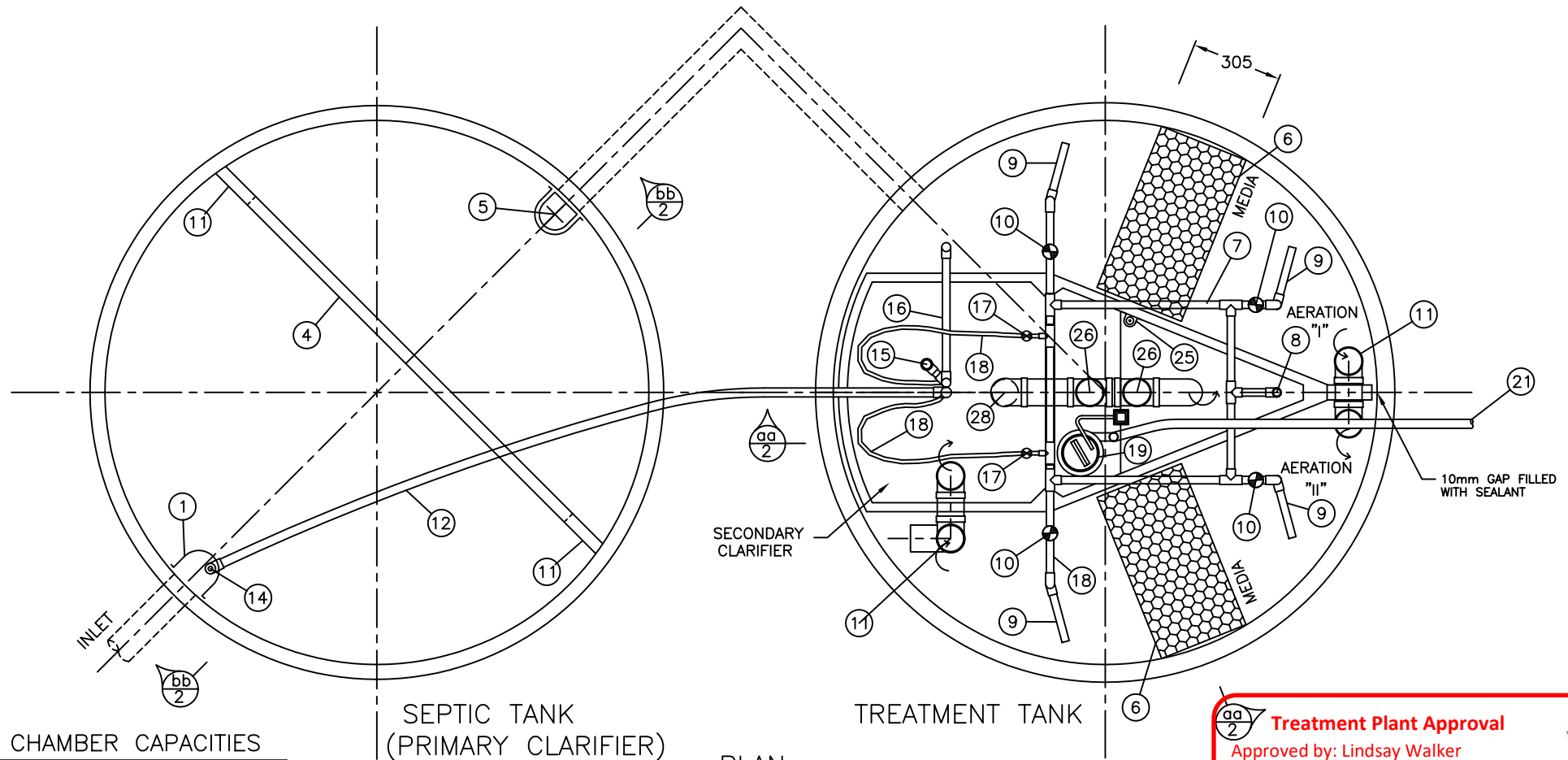
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# BIOSEPTIC – PERFORMA 2006



## CHAMBER CAPACITIES

|                          | Capacity    |
|--------------------------|-------------|
| Septic Tank              | 3575 litres |
| Aeration 1               | 1250 litres |
| Aeration 2               | 1250 litres |
| Clarifier                | 503 litres  |
| Chlorine Contact Chamber | 307 litres  |
| Pump Chamber             | 103 litres  |
| Surcharge Volume         | 1050 litres |

SEPTIC TANK  
(PRIMARY CLARIFIER)

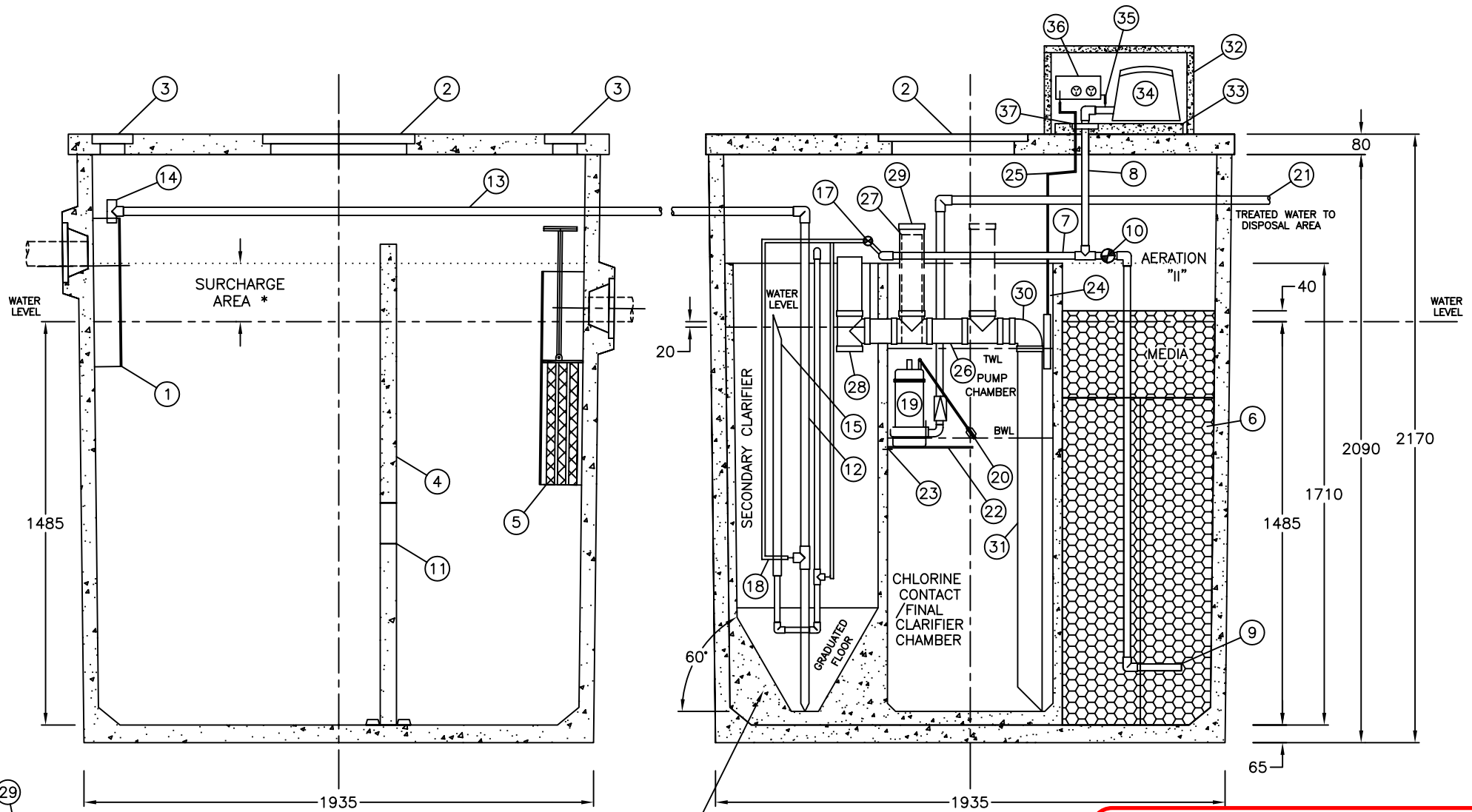
TREATMENT TANK

PLAN  
( SCALE 1:15 )

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|   |        |                       |                 |                        |              |
|---|--------|-----------------------|-----------------|------------------------|--------------|
| BIOSEPTIC PTY. LTD.<br>1-5 ANZAC AVENUE<br>SMEATON GRANGE<br>NARELLAN, NSW 2567 |        | BIOSEPTIC<br>PERFORMA |                 | SHEET 1<br>OF 2 SHEETS |              |
| Gary Murphy B.E. (CIVIL) M.I.E. AUST.   | SIGNED | SCALES<br>1:15        | DRAWN<br>G.F.M. | DATE<br>16/03/00       | BP-2006-TANK |

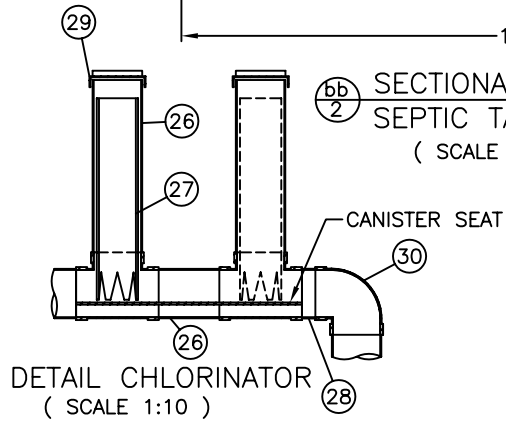


SECTIONAL ELEVATION  
 SEPTIC TANK (PRIMARY CLARIFIER)  
 ( SCALE 1:15 )

SECTIONAL ELEVATION  
 TREATMENT TANK  
 ( SCALE 1:15 )

\* SURCHARGE AREA - INCLUDES BOTH SEPTIC AND TREATMENT TANK COMPARTMENTS EXCLUDING PUMP CHAMBER.

CONCRETE INTERNAL CHAMBER CAST SEPARATELY, FIXED TO MAIN TANK.



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|   |        |                       |                 |                        |              |
|---|--------|-----------------------|-----------------|------------------------|--------------|
| BIOSEPTIC PTY. LTD.<br>1-5 ANZAC AVENUE<br>SMEATON GRANGE<br>NARELLAN, NSW 2567 |        | BIOSEPTIC<br>PERFORMA |                 | SHEET 2<br>OF 2 SHEETS |              |
| Gary Murphy B.E. (CIVIL) M.I.E. AUST.   | SIGNED | SCALES<br>1:15        | DRAWN<br>G.F.M. | DATE<br>16/03/00       | BP-2006-TANK |



# BioSeptic Performa Specifications and key to drawings

January 2006

| No | Description             | Position | Quantity            | Material    | Specification                                    |
|----|-------------------------|----------|---------------------|-------------|--|
| 1  | Inlet square            | P S      | 2                   | PVC         | 100mm per manufacturer's spec.                   |
| 2  | Access cover            | P S      | 2                   | Concrete    | 610mm diameter                                   |
| 3  | Inspection opening      | S        | 3                   | Conc or PVC | 150mm min diameter                               |
| 4  | Baffle                  | P S      | 1                   | Concrete    | Reinforced concrete                              |
| 5  | Outlet filter           | S        | 1                   | PE          | 6 tubes 20mm x 700mm                             |
| 6  | Bacterial support media | P S      | 89.09m <sup>2</sup> | PVC         | Surface area > 157m <sup>2</sup> /m <sup>3</sup> |
| 7  | Air manifold            | P S      | 1                   | PVC         | 20mm pressure pipe PN 12                         |
| 8  | Air inlet               | P S      | 1                   | PVC         | 20mm pressure pipe PN 12                         |
| 9  | Air diffuser            | P S      | 4                   | PE          | 20mm diameter                                    |
| 10 | Ball valve              | P S      | 2                   | PVC         | 20mm   |
| 11 | Transfer weir           | P        | 2                   | PVC         | 90mm stormwater pipe                             |
| 12 | Sludge return           | P S      | 1                   | PVC         | 25mm pressure pipe                               |
| 13 | Sludge return pipe      | P S      | 1                   | PVC         | 25mm pressure pipe                               |
| 14 | S R outlet square       | P S      | 1                   | PVC         | 25mm pressure pipe                               |
| 15 | Skimmer inlet           | P S      | 1                   | PVC         | 25mm pressure pipe                               |
| 16 | Skimmer pipe            | P        | 1                   | PVC         | 20mm pressure pipe PN 12                         |
| 17 | Air valve               | P S      | 2                   | PVC         | 13mm bore  |
| 18 | Air line                | P S      | 2                   | PE          | 13mm low density pipe                            |
| 19 | Water pump              | P S      | 1                   | CI/SS       | >.25Kw   |
| 20 | Non return valve        | S        | 1                   | Brass/PE    | 25mm bore  |
| 21 | Pump discharge pipe     | P S      | 1                   | PVC         | 25m pressure pipe                                |
| 22 | Shelf                   | S        | 1                   | FC/concrete | >6mm thick                                       |
| 23 | Shelf support           | S        | 3                   | SS          | 10mm bolt  |
| 24 | High water sensor       | P S      | 1                   | PVC         | 20mm pressure pipe PN 12                         |
| 25 | High water alarm tube   | P S      | 1                   | PE          | 4mm tube   |
| 26 | Chlorinator             | P S      | 1 or 2              | PVC         | 90mm s/w sq junctions & pipe                     |
| 27 | Chlorine canister       | P S      | 1 or 2              | PVC         | 90mm stormwater pipe                             |
| 28 | Outlet weir             | P S      | 1                   | PVC         | 90mm s/w square junctions                        |
| 29 | Cap                     | S        | 2                   | PVC         | 90mm stormwater                                  |
| 30 | Elbow                   | S        | 1                   | PVC         | 90mm stormwater                                  |
| 31 | Outlet pipe             | S        | 1                   | PVC         | 90mm stormwater pipe                             |
| 32 | Cover box               | S        | 1                   | Concrete    | Reinforced concrete                              |
| 33 | Base slab               | S        | 1                   | Concrete    | 40mm   |
| 34 | Air blower              | S        | 1                   |             | Nominal 80 or 100litre/minute                    |
| 35 | Low air alarm tube      | S        | 1                   | PE          | 4mm tube   |
| 36 | Control box             | S        | 1                   | PVC         | Approval No: CS6333N                             |
| 37 | Sealing plate           | S        | 1                   | PVC         | 90mm stormwater cap                              |

|  | Tank/chamber            | Capacity/area |                | Key   |                          |
|--|-------------------------|---------------|----------------|-------|--------------------------|
|  | Septic tank             | 3.601         | m <sup>3</sup> | P     | Denotes shown on plan    |
|  | Aeration chamber 1      | 1.26          | m <sup>3</sup> | S     | Denotes shown on section |
|  | Aeration chamber 2      | 1.26          | m <sup>3</sup> | PVC   | Polyvinylchloride        |
|  | Clarifier               | 0.503         | m <sup>2</sup> | PC    | Powder coated            |
|  | Chlorine contact/       |               |                | PE    | Polyethylene             |
|  | final clarifier chamber | 0.307         | m <sup>3</sup> | CI/SS | Cast iron/stainles steel |
|  | Pump chamber            | 0.103         | m <sup>3</sup> | FC    | Fibre coment             |
|  | Surcharge chamber       | 1.054         | m <sup>3</sup> |       |                          |
|  | Total                   | 8.088         | m <sup>3</sup> |       |                          |

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