



Health

Certificate of Accreditation

Sewage Management Facility

Aerobic Sand Filter System

This Certificate of Accreditation is issued by the Secretary of the NSW Ministry of Health pursuant to Clause 41(1) of the Local Government (General) Regulation 2005.

System: Ecosafe "Ep10" Aerobic Sand Filter System

*Manufacturer: B V Hawthorne Pty Ltd t/a
Ecosafe Wastewater Treatment*

Of: 8 Fitzroy St, Burpengary East, QLD, 4505

The Ecosafe "Ep10" Aerobic Sand Filter System as described in Schedule 1, has been accredited as a sewage management facility for use in a single domestic premises in NSW. This accreditation is subject to the conditions of accreditation and permitted uses specified in Schedule 2.

*Director, Environmental Health
for Secretary (delegation PH335)*

Issued: 1 November 2018

Certificate No: ASF002

Expires: 31 December 2020

Schedule 1: Specification

Ecosafe Wastewater Treatment Plant “Ep10 Aerobic sand filtration treatment system”

General Description:

The Ecosafe Ep10 Aerobic sand filtration system is designed to treat the full wastewater stream from a residential dwelling occupied by a maximum of 10 persons. The Ecosafe Ep10 Aerobic Sand Filter System is comprised of a primary treatment tank and an aerobic sand filter (ASF).

- The primary treatment tank/septic tank are designed as a concrete or plastic tank, fitted with a partition wall and has a minimum capacity of 3900 litres. The tank is used for the separation from the wastewater of settleable/gross solids and floatable matter such as greases and fat.
- The Ecosafe Aerobic Sand Filter system is designed as a non-pressure dosing system. Primary treated effluent is distributed over the sand filter by gravitation by means of an inlet manifold connected to 3 rows of 100 mm diameter PVC pressure pipes. Where site restrictions apply a 450 litres dosing pump well is installed after the septic tank to pressure dose the sand filter by means of 3 rows of 25 mm diameter PVC pressure pipes.
- The Aerobic Sand Filter (ASF) receives the primary treated effluent from the septic tank by gravitation. The effluent is distributed across the sand filter through 3 rows of perforated pressure pipes with 6 mm diameter holes at 60 mm centres. The effluent flows downwards through the filter sand and is collected in a 100 mm diameter collection pipe and directed to the irrigation pump well.
- The Aerobic Sand Filter consist of an excavation 20 m² in area (8 m long x 2.5 m wide x 1.0 m deep). The ASF is fully lined and constructed using the following materials:
 - a layer of 10/20 mm aggregate, 200 mm deep, laid over a 100 mm diameter slotted collection pipe; followed by
 - a layer of filter sand, 750 mm deep; and
 - a layer of 10/20 mm aggregate, 200 mm deep;
 - a geotextile material laid over the top aggregate layer to prevent ingress of sand and soils;
 - the ASF is finished with a cover of selected topsoil in a form of a mound to prevent entry of surface run-off water.
- Disinfection/Irrigation Pump Well. The treated effluent is collected in a 450 litres concrete or plastic pump well after disinfection by a chlorine disinfection unit. The unit consist of a 1.6 m long canister fitted inside the disinfection unit and capable of holding 15 chlorine tablets inside the canister.
- The treated and disinfected effluent is pumped to a dedicated land application area by a Grundfos or Davey automatic submersible pump sized to suit each particular application. The submersible pump is fitted with lower and higher float switches.

Schedule 2: Conditions of Accreditation

1.0 General

- 1.1 For each installation the owner/occupier of the premises shall make an application to the local authority to install an Ecosafe Aerobic Sand Filter system as a waste management facility in accordance with Section 68, Part C of the Local Government Act 1993 and Clause 26 of the Local Government (General) Regulation 2005.
- 1.2 The Ecosafe Ep10 Aerobic Sand Filter system shall be supplied, constructed and installed in accordance with the design as submitted and accredited by the NSW Ministry of Health.
- 1.3 Any modification or variations to the accredited design of the Ecosafe Ep10 Aerobic Sand Filter system shall be submitted for separate consideration and variation of the Certificate of Accreditation by the Secretary of the NSW Ministry of Health.

- 1.4 Each Ecosafe Ep10 Aerobic Sand Filter system shall be permanently and legibly marked on a non-corrosive metal plaque or equivalent, attached to the lid with the following information:
- The brand name of the system;
 - The manufacturer's name or registered trademark;
 - The month and year of manufacture.
- 1.5 The manufacturer shall supply with each Ecosafe Ep10 Aerobic Sand Filter system an owner's manual, which sets out the care, operation, and maintenance and on-going management requirements of the system.
- 1.6 The manufacturer shall provide the following information to each local authority where it is intended to install the Ecosafe Aerobic Sand Filter system in their area once accreditation from the Ministry of Health has been obtained:
- Statement of warranty
 - Statement of service life
 - Quality Assurance Certification
 - Installation Manual
 - Service Manual
 - Owner's Manual
 - Service Report Form
 - Engineering Drawings on A3 format
 - Detailed Specifications
 - A4 Plans
 - Accreditation documentation from NSW Health.

2.0 Installation and Commissioning

- 2.1 The local authority should require that on completion of the installation of the Ecosafe Ep10 Aerobic Sand Filter system, the system is inspected and checked by the manufacturer or the manufacturer's agent. The manufacturer or the agent is to certify that the system has been installed and commissioned in accordance with its design, conditions of accreditation and any additional requirements of the local authority.
- 2.2 The local authority should require that all electrical work must be carried out by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.

3.0 Maintenance

- 3.1 The local authority shall require the owner/occupier of a premises to enter into an annual service contract with a representative of Ecosafe Aerobic Sand Filter system or a service contractor or company acceptable to the local authority.
- 3.2 The Ecosafe Ep10 Aerobic Sand Filter system shall be serviced at six monthly intervals in accordance with the details set out in the owner's and service manual.
- 3.3 Each six monthly service shall include a check on all mechanical, electrical and functioning parts of the system including:
- The operation of pumps, float switches, sludge return, etc
 - The alarm system,
 - Condition of ASF,
 - The UV disinfection unit or tablet chlorinator if applicable,
 - The effluent irrigation area.
- 3.4 The local authority should require that a service report sheet, in triplicate, is completed for each service. The original shall be given to the owner, the duplicate forwarded to the Council and the triplicate retained by the service contractor.

4.0 On-going Management

4.1 The owner's manual prepared by the manufacturer shall contain a plan for the on-going management of the Ecosafe Ep10 Aerobic Sand Filter system. The plan shall include details of:

- the treatment process,
- procedures to be followed in the event of a system failure,
- emergency contact numbers,
- maintenance requirements,
- inspection and sampling procedures to be followed as part of the on-going monitoring program developed by the local authority.

4.2 Effluent from the Ecosafe Ep10 Aerobic Sand Filter system taken in any random grab sample shall comply with the following standard:

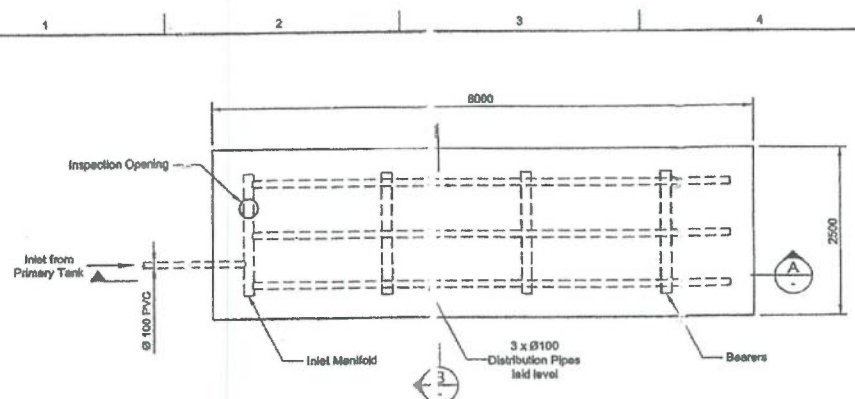
- | | |
|--------------------------|--|
| • BOD ⁵ | less than 30 mg/L |
| • SS | less than 45 mg/L |
| • E. Coli | less than 100 cfu/100 ml |
| • Free residual chlorine | greater than 0.2 and less than 2.0 mg/L, where chlorination is the disinfection process. |

5.0 Permitted uses

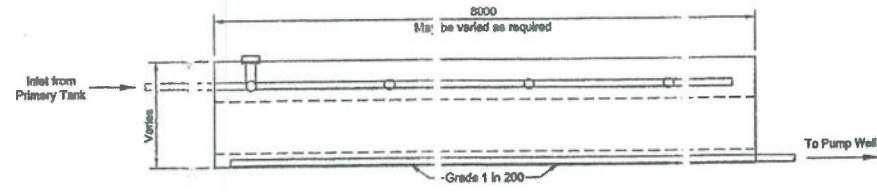
5.1 The effluent is suitable for re-use for garden purposes by way of any of the forms of irrigation as described in AS/NZS 1547:2000:

- above ground spray irrigation; or
- surface drip irrigation covered by mulch; or
- sub-surface drip irrigation installed at around 100 mm depth.

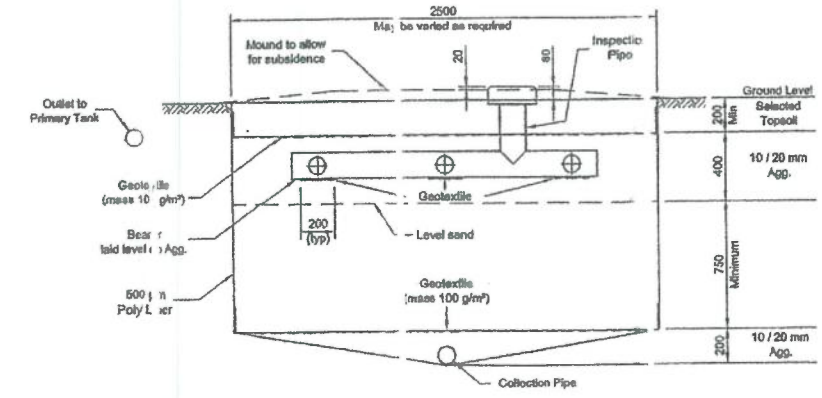
Each of the three forms of irrigation is subject to the approval of the local authority.



PLA 1 - SAND FILTER



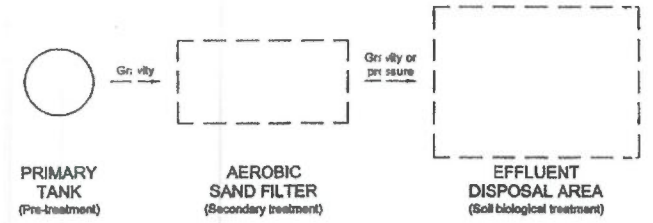
SECTION A-A



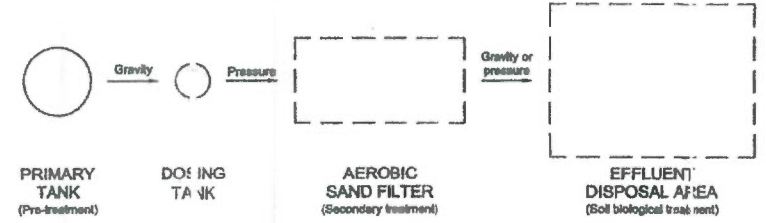
SECTION B-B
SCALE 1:20

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REVISIONS					
REV	DATE	DESCRIPTION	DRWN	CHKD	APPV
A	12/01/0	ISSUED FOR INFORMATION	CF		
B	05/07/1	DRAWING REVISED	CF		
C	13/01/0	DRAWING REVISED & DRAWING NUMBER UPDATED	CF		
D	10/11/10	DRAWING REVISED	CF		
E	15/02/1	TITLE BLOCK REVISED	CF		



SYSTEM COMPONENT LAYOUT
(Filter area > 50m²)



SYSTEM COMPONENT LAYOUT
(Filter area > 50m²)

APPROVED
- 1 NOV 2018
NSW MINISTRY OF HEALTH

- NOTE:**
- Minimum Filter Area for Domestic Unit 20 m²
 - Allowable Hydraulic Loading shall be 20L/p/d/m²
 - Filter Area > 50m² shall be dosed by pressure
 - Refer Specifications for details of Primary Tank, Dosing Tank & Pump Well

ECOSAFE WASTEWATER TREATMENT

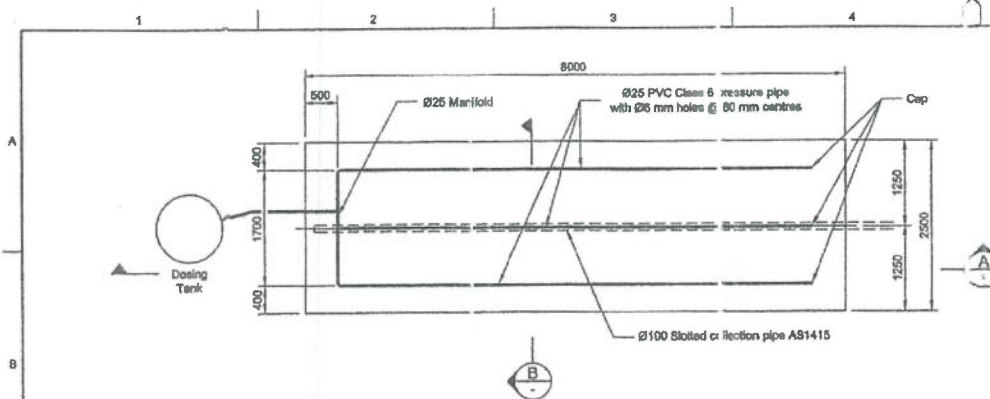
PO Box 220 CAROLTON QLD 4010
Ph: 07 5429 5322 Fax: 07 5429 8305
Email: info@ecosafe.com.au Web: www.ecosafe.com.au

TITLE:
CONSTRUCTION DETAILS OF
AEROBIC SAND FILTRATION
WASTEWATER TREATMENT PLANT

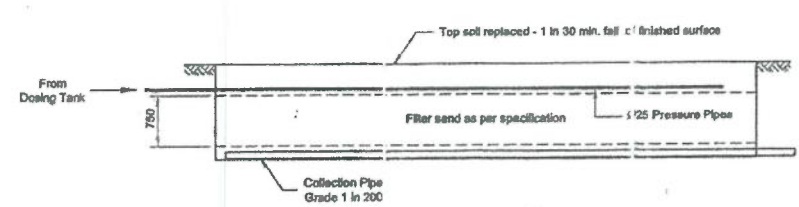
DESIGNED: <i>R. Hawthorne</i>	CHECKED: <i>R. Hawthorne</i>
B V HAWTHORNE - RPEQ 5206	P B HAWTHORNE - RPEQ 7477

DRG. NO. EC-0010	SHT. 1 / 1	REV. 0
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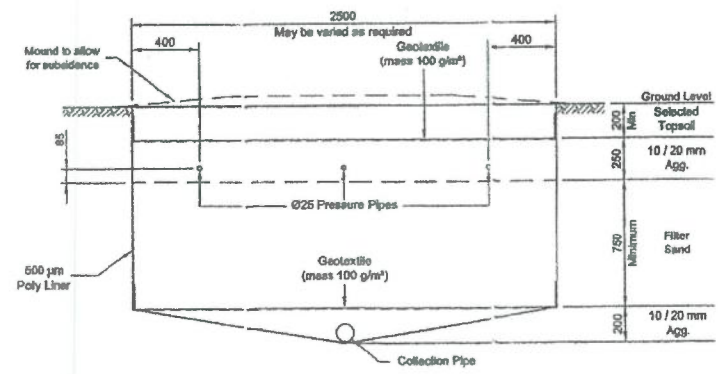
DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETRES
UNLESS NOTED OTHERWISE
TO: 10 ANGLE PROJECTION



PLAN - SAND FILTER



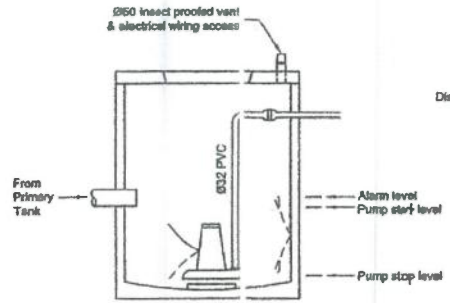
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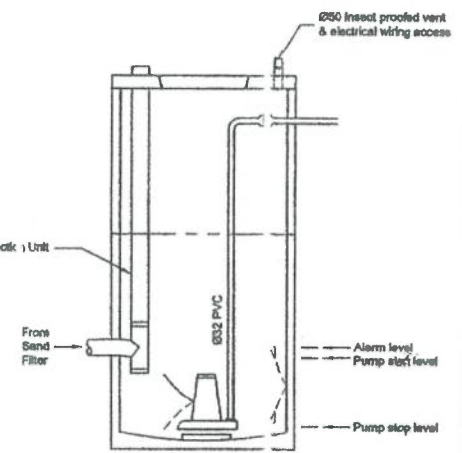
SECTION B
SCALE 1:20

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REV	DATE	DESCRIPTION	DRWN	CHKD	APPV
1	8/10/10	ISSUED FOR INFORMATION	CF		
2	19/1/10	DRAWING REVISED	CF		
3	18/2/11	TITLE BLOCK REVISED	CF		



DOSING TANK
Everhard 450
Scale 1:20



PUMP WELL
Everhard 450 L w/ Rise
Scale 1:20

APPROVED
- 1 NOV 2018
NSW MINISTRY OF HEALTH

FILTER AREA 6 FOR 10EP

EP	AREA
15	25 m ²
18	30 m ²
20	35 m ²

- NOTE:**
- Dimensions are shown for 10EP
 - Minimum Filter Area for Domestic Unit 20 m²
 - Allowable Hydraulic Loading shall be 20 L/dm²
 - Filter Areas > 50m² shall be dosed by pressure
 - Refer Specifications for details of Primary Tank, Dosing Tank & Pump Well
 - Based on 200 L/p/d.

ECOSAFE WASTEWATER TREATMENT

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Ph: 07 5 29 6022 Fax: 07 6429 8386
Email: info@ecosafe.com.au Web: www.ecosafe.com.au

TITLE
AEROBIC SAND FILTRATION TREATMENT OF DOMESTIC WASTEWATER USING PRESSURISED DISTRIBUTION PIPES

DESIGNED: *R. Hawthorne* **CHECKED:** *R. Hawthorne*
B V HAWTHORNE - RPEQ 5208 | B HAWTHORNE - RPEQ 7477

DO NOT SCALE DRAWING
ALL DIMENSIONS ARE IN MILLIMETRES
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THIRD ANGLE PROJECTION

DRG. NO. EC-004 **REV.** 1/1/0