



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 "Crown" 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 "Crown" 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: ASF003

Expires: 31 December 2020

Schedule 1: Specification

Ecosafe "Crown" Aerobic Sand Filter System

General Description:

The Ecosafe "Crown" Wastewater Treatment Plant is designed to treat the full wastewater stream from a residential dwelling occupied by a maximum of 10 persons. The Ecosafe "Crown" Aerobic Sand Filter system comprises 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 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 filter media used in the Ecosafe "Crown" Aerobic Sand Filter system is fully enclosed in a concrete or plastic tank with a minimum of 2.0 metres in diameter. The top of the filter bed is not covered by aggregate or top soil. Refer to drawings "Crown A and Crown B"

The "Crown" Aerobic Sand Filter (ASF) receives the primary treated effluent from the septic tank by gravitation. The effluent flows into a patented dosing mechanism that tips when the reservoir is full. When the filled reservoir is activated the effluent is discharged into the distribution pipe network. The distribution pipe network consists of 50 mm diameter perforated PVC pressure pipes with 8 mm diameter holes at 60 mm centres. The effluent flows downwards through the filter sand and is collected in a 50 mm diameter collection pipe and directed to the irrigation pump well.

- The "Crown" Aerobic Sand Filter is contained in a concrete or plastic tank and constructed using the following materials:
 - a layer of 10/20 mm aggregate, 175 mm deep, laid over a 50 mm diameter slotted collection pipe; followed by
 - a layer of filter sand, minimum of 700 mm deep;
 - a geotextile material, laid over the aggregate layer covering the collection pipe to prevent ingress of the filter sand;
 - the ASF is finished with a geotextile material laid over the filter sand.
- 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 "Crown" 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 "Crown" 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 "Crown" 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 "Crown" 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 "Crown" 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 (or upload the information to its web site) where it is intended to install the Ecosafe "Crown" 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 "Crown" 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 the premises to enter into an annual service contract with a representative of Ecosafe "Crown" Aerobic Sand Filter system or a service contractor or company acceptable to the local authority.
- 3.2 The Ecosafe "Crown" 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 local authority 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 "Crown" 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 "Crown" Aerobic Sand Filter system taken in any random grab sample shall comply with the following standard:
- BOD⁵ 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:

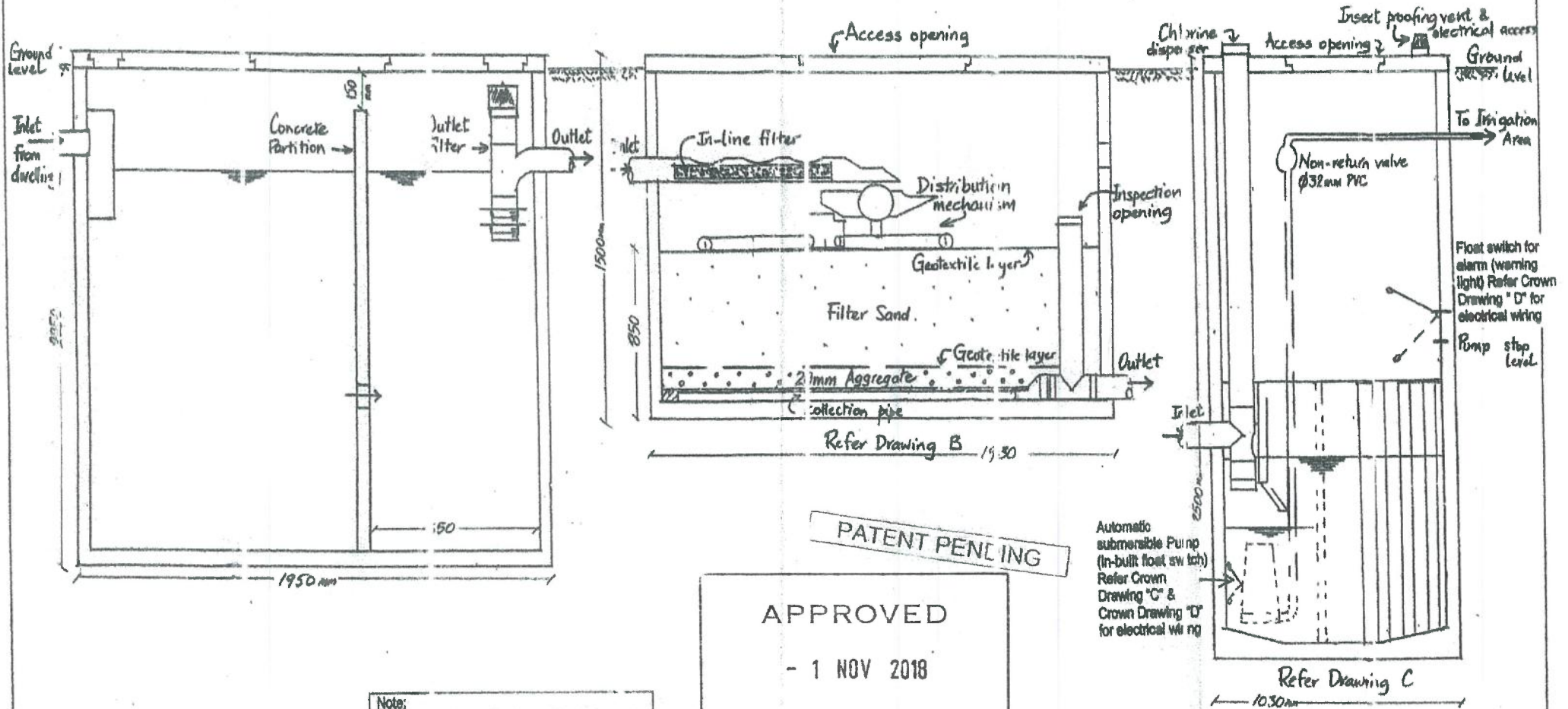
- above ground spray irrigation; or
- surface drip irrigation covered by mulch; or
- sub-surface drip irrigation installed at around 100 mm depth.

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

PRIMARY TANK

AEROBIC SAND FILTER (IN A TANK)

ADVANCED SECONDARY PUMPWELL & DISINFECTION UNIT



Note:
The Ecosafe Crown Treatment Plant is a gravity-fed automatic system. It does NOT contain any of the following: electric motors, gear boxes, compressors, valves, diffusers, sludge purging equipment, electrodes

PATENT PENDING

APPROVED

- 1 NOV 2018

NSW MINISTRY OF HEALTH

Automatic submersible Pump (In-built float switch) Refer Crown Drawing "C" & Crown Drawing "D" for electrical wiring

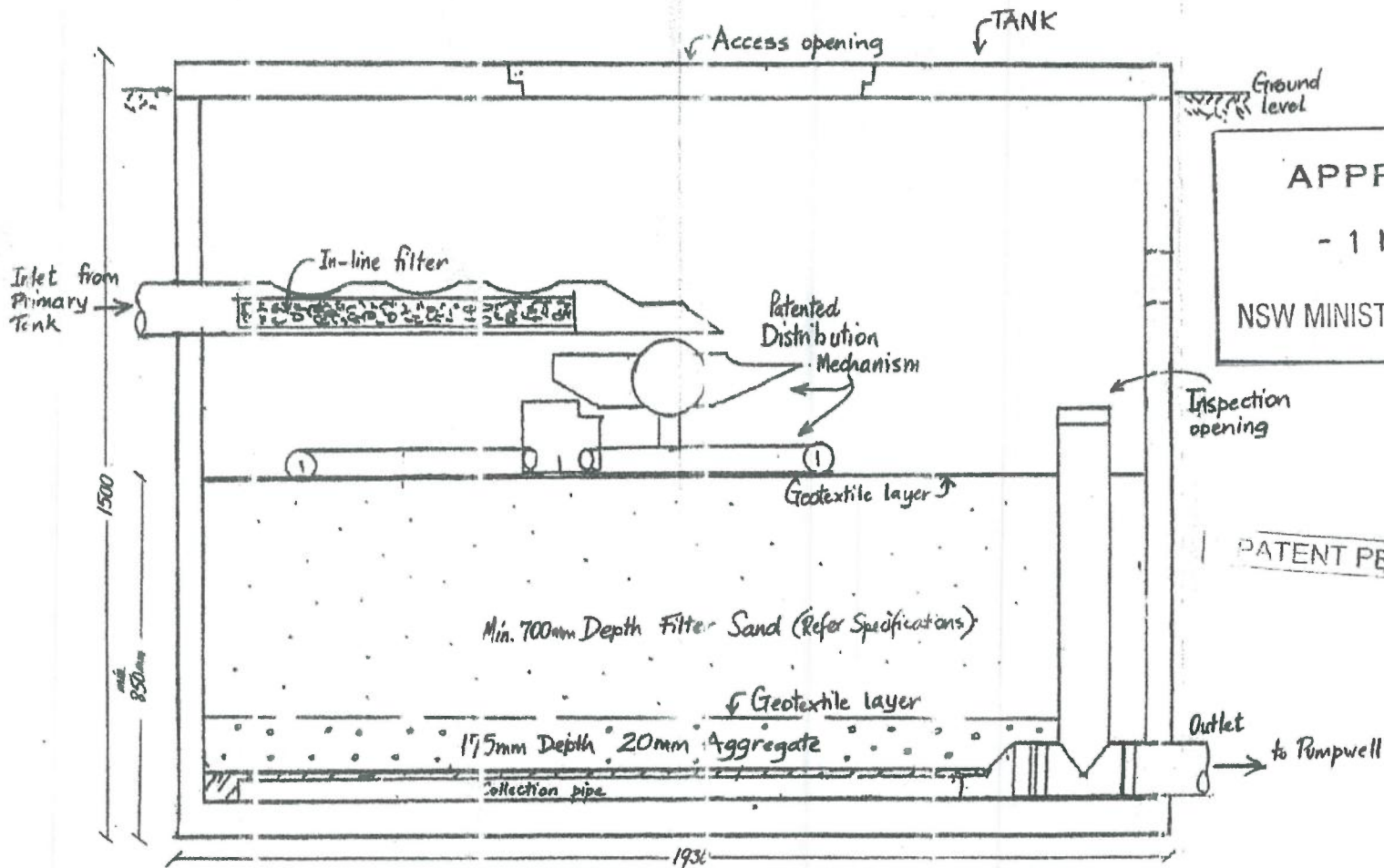
Float switch for alarm (warning light) Refer Crown Drawing "D" for electrical wiring
Pump stop level

Revised 10.01.08
Brian Hawthorne RPEQ MIE Aust.

Scale: 1:200

<p>ECOSAFE WASTEWATER TREATMENT</p> <p>DRAWN: DGH DATE: 31 Aug. 07</p>	<p>Ecosafe Crown: ADVANCED Secondary Wastewater Treatment Plant using aerobic sand filtration</p> <p>Ref: Crown Drawing A "PATENT PENDING C"</p>	<p>COPYRIGHT: The ownership of the copyright in this document, the design contained in it, and all of the work executed from it are vested in BV Hawthorne Pty Ltd. These designs, drawings and documents must not be reprinted, copied, used or wholly or in part of otherwise dealt with in breach of the Copyright Act without the prior written permission of BV Hawthorne Pty Ltd.</p>
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**AEROBIC SAND FILTER
(IN A TANK)**



APPROVED
- 1 NOV 2018
NSW MINISTRY OF HEALTH

Inspection opening

PATENT PENDING

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ECOSAFE WASTEWATER TREATMENT
DRAWN: DGH
DATE: 31 Aug. 07

Ecosafe Crown: Aerobic Sand Filter (in a Tank)
Ref: Crown Drawing B
"PATENT PENDING"

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