



Health

Certificate of Accreditation

Aerated Wastewater Treatment System

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

System: Fuji Clean model CE1500EX AWTS

Manufacturer: Fuji Clean Australia Pty Ltd

Of: 16 Waterway Drive, Coomera, QLD, 4210

This is to certify that the Fuji Clean model CE1500EX AWTS 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, and in accordance with the Sewage Management Facility Accreditation Guideline, May 2005.

*Director, Environmental Health Branch
for Director-General (delegation PH335)*

Date of Issue: 6 November 2013

Certificate No: AWTS 033

This Certificate of Accreditation is in force until 31 December 2014

Schedule 1: Specification

Fuji Clean model CE1500EX AWTS

Description of the Fuji Clean model CE1500EX system

The Fuji Clean model CE1500EX is designed to treat the wastewaters from a residential dwelling occupied by a maximum of 10 persons. The Fuji Clean model CE1500EX system is contained in a single horizontal axis type cylindrical fibreglass reinforced plastic septic tank/collection well with a design capacity of 4359 litres and manufactured by Fuji Clean Co Ltd. The treatment tank of the Fuji Clean model CE1500EX system contains the following components:

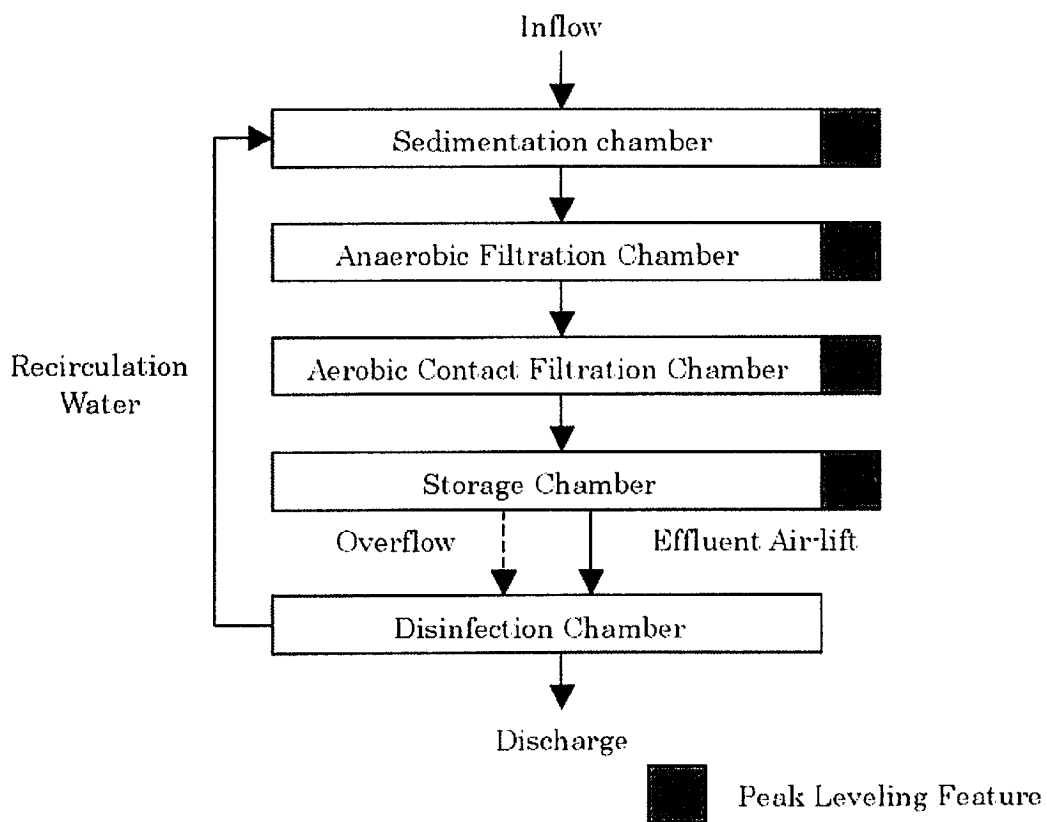
Primary Treatment

- Sedimentation Chamber – Effective volume of the chamber is 1114 litres. The chamber is designed to physically separate foreign material such as fat, grease or scum from the incoming wastewater.
- Anaerobic Filtration Chamber – Effective volume of the chamber is 982 litres. This chamber contains spherical-skeleton shaped filter media with packing ratio of 31-36% of the effective volume in the chamber. Micro-organisms grown on the surface of the filter media assist the biological anaerobic treatment process and capture suspended solids. At the same time denitrification of the nitrogen oxides in the wastewater occur during the treatment process. The gasses generated by the treatment are vented out of the system.

Secondary Treatment

- Aerobic Contact Filtration Chamber – Effective volume of the chamber is 580 litres. The upper section of the chamber is filled with board type filter media with packing of 14-17% of the effective volume in the chamber. The lower section is filled with hollow, mesh, cylindrical filter media with packing ratio of 52-57% of the effective volume of the chamber. Aeration is continuous over the whole of the media through the air diffusers located at the bottom of the chamber. Biological aeration treatment takes place with the assistance of micro-organisms in the wastewater and bacterial growth on the filter media. Solids are captured in the lower section of the chamber. Solids are returned to the sedimentation chamber at regular intervals.
- Storage Chamber – Effective volume of the chamber is 281 litres. The chamber is designed to temporarily store treated effluent that is processed in the contact filtration chamber.
- Disinfection chamber – Effective volume of the chamber is 308 litres. The treated effluent makes contact with the solid chlorine tablets stored in the polyethylene canister. Contact with the chlorine tablets can be controlled by adjusting the cylinder's opening area.
- Air is supplied to the aerobic contact filtration chamber by an aerator model MAC 80N with a nominal capacity of 80 litres/minute, manufactured by Fuji Clean Co Ltd.

- Disinfection/Emergency Storage Tank – This chamber is included in the main treatment tank and has an effective volume of 308 litres. The chamber provides for the storage of the final effluent prior to the discharge to the land application system. Part of the chamber is utilised to maximise the chlorine contact time. The upper part of the tank is set aside as an emergency storage space. A Davey model D25-A submersible pump or equivalent is provided in the storage tank to direct treated effluent to the land application system.



Schedule 2: Conditions of Accreditation

1.0 General

- 1.1 For each installation the owner/occupier of a premises shall make an application to the Local Authority to install a Fuji Clean model CE1500EX AWTS 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 Fuji Clean model CE1500EX AWTS 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 Fuji Clean model CE1500EX AWTS shall be submitted for separate consideration and variation of the Certificate of Accreditation by the Director-General of the NSW Ministry of Health.
- 1.4 Each Fuji Clean model CE1500EX AWTS 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 Fuji Clean model CE1500EX AWTS 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 an AWTS in their area once Departmental accreditation 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 Council should require that on completion of the installation of the Fuji Clean model CE1500EX AWTS, 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 Council.
- 2.2 The Council 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 Council shall require the owner/occupier of a premises to enter into an annual service contract with a representative of Fuji Clean Australia Pty Ltd.
- 3.2 The Fuji Clean model CE1500EX AWTS shall be serviced at three monthly intervals in accordance with the details set out in the owner's and service manual.
- 3.3 Each three monthly service shall include a check on all mechanical, electrical and functioning parts of the system including:
 - Pump and air blower,
 - The control panel and alarm system,
 - Slime growth on the filter media,
 - Operation of the sludge return system,
 - Sludge build up in the Sedimentation Chamber,
 - Chlorine disinfection unit
 - The effluent irrigation area,
 - On-site testing for free residual chlorine and dissolved oxygen.
- 3.4 The Council 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 Fuji Clean model CE1500EX AWTS. 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 At each anniversary of the accreditation date the manufacturer shall submit to NSW Ministry of Health a list of all Fuji Clean model CE1500EX AWTS installed in NSW during the previous twelve months. NSW Health will randomly select up to 10% of the installed Fuji Clean model CE1500EX AWTS from each year of installation. The manufacturer, at its own cost, shall arrange for the selected Fuji Clean model CE1500EX AWTS to be inspected and sampled. Sampling is to be organised by an independent JAS/ANZ accredited agency. Samples for BOD₅, SS, and Thermotolerant coliforms are to be determined by a NATA registered laboratory, and samples for disinfectant concentration, if applicable, are to be determined on site. The results are to be reported to NSW Ministry of Health by:

- address of premises,
- date inspected and sampled,
- sample identification number,
- BOD₅,
- SS,
- Thermotolerant coliforms,
- disinfectant concentration (if applicable), and
- service history (if available)

4.3 Effluent from the Fuji Clean model CE1500EX AWTS taken in any random grab sample shall comply with the following standard:

- BOD₅ less than 30 mg/L
- SS less than 45 mg/L
- Thermotolerant coliforms 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.

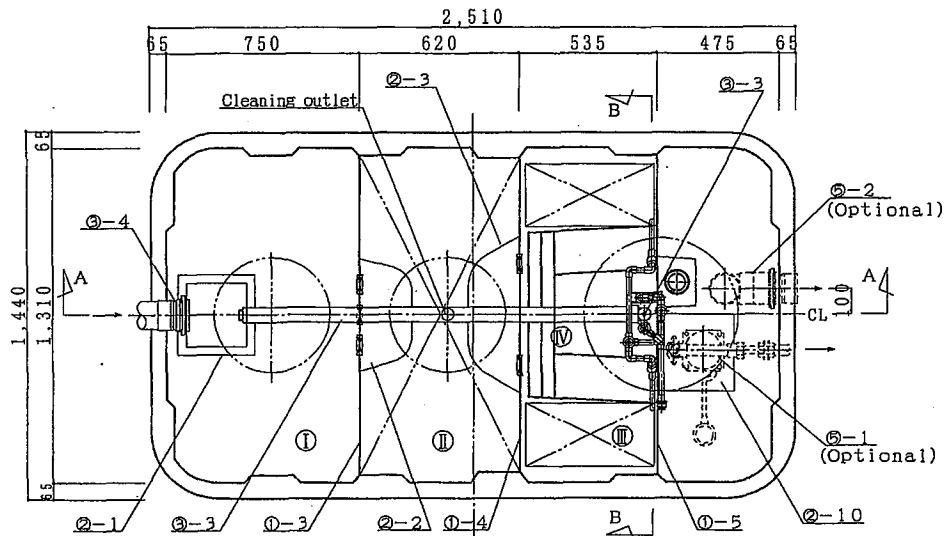
Each of the three forms of irrigation is subject to the approval of the Council.

6.0 Reduction in nutrient levels

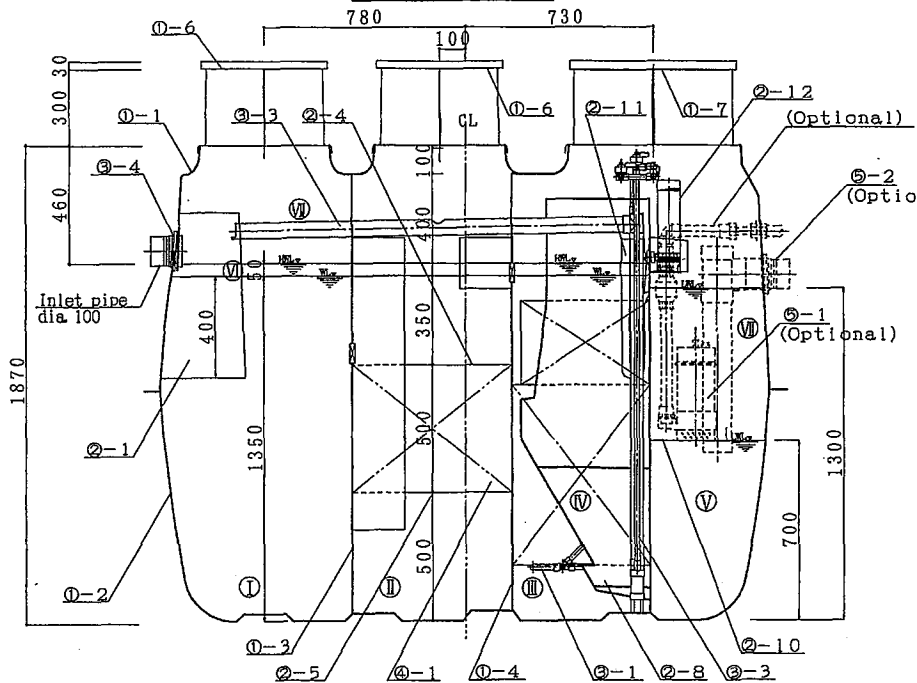
During the testing of the Fuji Clean model CE1500EX AWTS the treated effluent was tested for total N (TN) and total P (TP) concentrations.

The treatment process has the capacity to reduce the above concentrations as follows:

- Total N from an average of 39.6 mg/l to 18.11 mg/l which represent a reduction by 54.3 %;
- Total P from an average of 10.89 mg/l to 1.33 mg/l which represent a reduction by 87.8 %.

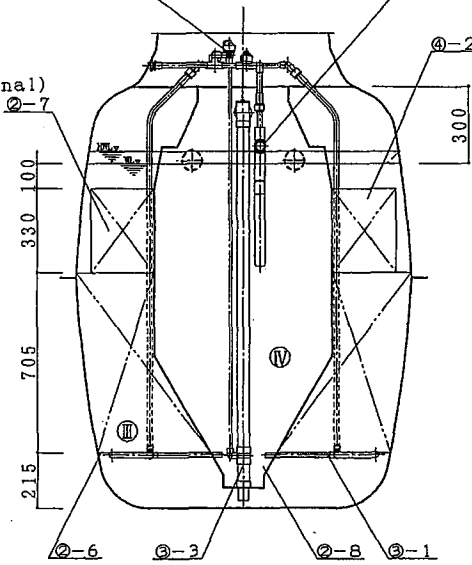


plan view



A-A section view

APPROVED
- 6 NOV 2013
NSW MINISTRY OF HEALTH



B-B section view

①- 1	Upper cup
①- 2	Lower cup
①- 3	Sedimentation partition
①- 4	Aerobic partition
①- 5	Outlet pump partition
①- 6	φ450 Manhole lid
①- 7	φ600 Manhole lid
②- 1	Inflow baffle
②- 2	Flow baffle
②- 3	Scum baffle
②- 4	Anaerobic suppress frame
②- 5	Anaerobic support frame
②- 6	Aerobic support frame
②- 7	Contact media fixing board
②- 8	Storage Chamber
②- 9	Chlorine cylinder support
②-10	Pump support
②-11	Disinfection chamber effluent airlift pump
②-12	Chlorine cylinder
③- 1	Aeration pipe assembly
③- 2	Air supplying pipe assembly
③- 3	Recirculation airlift assembly
③- 4	φ100 One-sided socket with slanted screw assembly
④- 1	Biostar (Anaerobic media)
④- 2	Contact media
④- 3	Aerobic media
⑤- 1	Outlet, pump (Optional)
⑤- 2	Outlet, gravity (Optional)

I	Sedimentation Chamber	1.114m ³
II	Anaerobic Filtration Chamber	0.982m ³
III	Aerobic Contact Filtration Chamber	0.580m ³
IV	Storage Chamber	0.281m ³
V	Disinfection Chamber	0.308m ³
VI	Peak cut volume	0.109m ³
VII	Extra capacity	1.094m ³

Name		CE1500EX			
		Overall view			
Designed date	Design	Check	Number	Scale	
10-2009	Otsubo	Kuwata			
Fuji Clean Co. Ltd.					