



# **Certificate of Accreditation**

## **Sewage Management Facility**

### **Aerated Wastewater Treatment System**

#### **Advanced Secondary Effluent**

*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: FujiClean ACE 1200 8Ep AWTS*

*Manufacturer: Fuji Clean Australia Pty Ltd t/a Fuji Clean Australia*

*Address: 2/176 Siganto Drive, Helensvale, QLD, 4212  
PO Box 1230 Oxenford, QLD, 4210*

*The FujiClean ACE 1200 8Ep AWTS as described in Schedule A, has been Accredited as a sewage management facility in accordance with the Secondary Treatment System Accreditation Guideline 2018 for use in single domestic premises in NSW. This Accreditation is subject to the conditions and permitted uses specified in Schedule B.*

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

**Issued:** 25 May 2020

**Certificate No:** STS-AWTS042

**Expires:** 31 December 2025



**Schedule A: Specification / Description of the FujiClean ACE 1200 8Ep Advanced Secondary AWTS**

**Name and Model of STS: FujiClean ACE 1200 8Ep Advanced Secondary AWTS**

The FujiClean ACE 1200 8Ep STS is designed to treat sewage from a residential dwelling occupied by a maximum of 8 persons, or 1200 LPD. The FujiClean ACE 1200 8Ep STS is contained in the following vessel: A septic tank/collection well with design capacity of 4359 L. NSW Health Accreditation Number STCW008.

<b>Chamber</b>	<b>Design capacities</b>
Primary treatment/ Anaerobic treatment	2 x chambers 1114 L plus 982 L
• Partition	yes
Secondary treatment	
• Aeration chamber	580 L
• Clarifier	281 L
• Irrigation chamber	308 L
Emergency storage Operational	1104L
water level (depth)	
• primary	1350mm
• secondary	1350mm

The emergency storage capacity is achieved by the height of the last baffle (internal top of the treatment plant) being 335mm above the operating level of the treatment plant. This allows for a minimum of 1104 Litres of hydraulic loading as emergency storage inside the treatment plant. In most scenarios the ORG drain for the dwelling would overflow before the treatment plant allows for cross contamination.

The FujiClean ACE 1200 has the following components:

- **Sedimentation chamber:** All wastewater from the dwelling flows into the sedimentation chamber where physical separation of organic waste and foreign material such as fats, oil, and grease commence. Sludge and scum form and allow for a reduction in BOD and TSS concentrations.
- **Anaerobic Filtration Chamber:** Wastewater from the sedimentation chamber gravity feeds into the anaerobic filtration chamber. This chamber is also a part of primary treatment chamber, with the addition of a contact media filtration bed which increases the surface area for the growth of bacteria. Scum and sludge also form in this chamber through biological separation.
- **Aerobic Contact Filtration chamber:** Primary treated wastewater from the anaerobic filtration chamber gravity feeds into this chamber. This chamber is a contact media filtration chamber. Air is pumped in continuously to assist nitrification of the ammonium nitrogen in the wastewater. The media in the chamber provides a surface area for the growth of bacteria to allow for the bio-degradation of organic material in the wastewater.
- **Clarification Chamber:** Treated wastewater is transferred into the clarification chamber allowing for the removal of settled solids. The solids are transferred to the primary treatment tank by way of an airlift device.
- **Disinfection/Pump Chamber:** A chlorine disinfection unit is installed on the outlet of the disinfection/pump chamber.
- **Filtration:** The treated and disinfected effluent is filtered through an external irrigation filter of no less than 130 micron if subsurface drip line is used as the disposal type.
- **Air Supply:** Air is supplied to the aerobic contact filtration chamber by a FujiMac 100 LPM/68 watt air blower or equivalent, producing an airflow of a nominal 100 litres/minute at 1.8 m water depth. The air is distributed via a manifold to aeration leg diffusers located near the base of the aeration chamber and the airlift device located in the aerobic zone and in the clarification chamber. The airlift device continually returns partially treated wastewater and settled solids to the inlet of the sedimentation chamber.
- **Irrigation Pump:** A FujiSub model FS756 submersible irrigation pump or equivalent is installed in the disinfection/pump chamber.

## Schedule B: Conditions of Accreditation

### 1. General

- 1.1 Prior to installation the owner/occupier of the premises shall make an application, in accordance with Clause 26 of the *Local Government (General) Regulation 2005*, to the local authority for approval to install and operate the FujiClean ACE 1200 as a Sewage Management Facility in accordance with Section 68, Part C of the *Local Government Act 1993*.
- 1.2 The local authority shall apply those Conditions of Accreditation, appropriate to the owner / occupier, to any approval to operate the FujiClean ACE 1200 issued under Clause 45(4), *Local Government (General) Regulation 2005*.
- 1.3 In accordance with Clause 36 of the *Local Government (General) Regulation 2005*, the FujiClean ACE 1200 8Ep shall have an expected service life of 5 years in the case of mechanical and electrical components and 15 years in the case of other components.
- 1.4 The owner / occupier shall ensure that the FujiClean ACE 1200 is installed or constructed:
- in accordance with the accredited specifications of the type tested unit and in accordance with good trade practice, and
  - to allow ease of access for maintenance, and
  - regarding the health and safety of users, operators and persons maintaining the facility, and
  - must be installed or constructed to make appropriate provision for access to, and removal of, contents in a safe and sanitary manner, and
  - must, if it is intended to be a permanent fixture, be anchored to prevent movement.
- 1.5 The manufacturer / supplier shall ensure that the FujiClean ACE 1200 is supplied, constructed and installed in accordance with the design (including the disinfection unit) as submitted and accredited by the NSW Ministry of Health. The FujiClean ACE 1200 shall not be modified or altered except that alternate individual mechanical and electrical components such as pumps, PLCs, etc, may be substituted provided that the component meets the accredited design specification.
- 1.6 Any permanent modification or variations to the accredited design of the FujiClean ACE 1200 shall be submitted for separate consideration and variation of the Certificate of Accreditation by the NSW Ministry of Health. Modifications will be considered in accordance with section 2.3.13 of AS1546.3:2017.
- 1.7 Each FujiClean ACE 1200 shall be permanently and legibly marked by the manufacturer in accordance with section 3 of AS1546.3:2017.
- 1.8 The manufacturer shall supply with each FujiClean ACE 1200 an owner's manual, which sets out the care, operation, maintenance and on-going management requirements of the system. The owner's manual prepared by the manufacturer shall specifically contain a plan for the on-going management of the FujiClean ACE 1200. 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 any on-going monitoring program developed by the local authority.
- 1.9 The manufacturer shall provide the following information to each local authority where it is intended to install an AWTS in their area once Ministry Accreditation has been obtained:
- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| • Statement of warranty           | • Manufacturer's Service Report Form |
| • Statement of service life       | • Engineering Drawings               |
| • Quality Assurance Certification | • Specifications                     |
| • Installation Manual             | • A4 Plans                           |
| • Service Manual                  | • Certificate of Accreditation       |
| • Owner's Manual                  | documentation from NSW Health.       |

The manufacturer need not provide the above information to the local council where the information or document is contained on the manufacturer's web site.

## **2. Installation and Commissioning**

- 2.1 The owner / occupier shall have the FujiClean ACE 1200 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 council.
- 2.2 The owner / occupier shall ensure that all electrical work is carried out on the FujiClean ACE 1200 by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.
- 2.3 The owner / occupier shall not commission the FujiClean ACE 1200 unless the land application system has been completed.

## **3. Maintenance**

- 3.1 The owner / occupier of the premises shall enter into a minimum 12-month contract or agreement with a service agent and ensure that the FujiClean ACE 1200 is serviced:
  - in accordance with the manufacturer's / supplier's service manual and using the manufacturer's / supplier's service sheet; and
  - by a service agent who
    - has completed a course on the servicing and maintenance of STS; and has some supervised servicing experience or extensive un-supervised experience;
    - is employed or authorised by the manufacturer / supplier of the FujiClean ACE 1200;
    - uses replacement parts which meet the minimum specification of the FujiClean ACE 1200;
    - has advised of their name, contact details and credentials to the local council;
    - submits a completed NSW Health "Local Council Service Report" (template attached) to the local council immediately after each and every service;
    - shall report to the local council any instances where the owner / occupier refuses to authorise repairs, replacement of parts or maintenance; and
    - does not perform electrical work or enter confined spaces unless trained and is suitably qualified to do so.
- 3.2 The owner/occupier shall not service the FujiClean ACE 1200 unless they are an authorised agent of the manufacturer.
- 3.3 The FujiClean ACE 1200 once installed and commissioned shall be serviced at three (3) monthly intervals.
- 3.4 The manufacturer / supplier of the FujiClean ACE 1200 shall place on its web site a copy of the service manual, service sheet or form and specifications for the FujiClean ACE 1200 to facilitate servicing, maintenance and repairs. Commercial-in-confidence documents may be provided directly to the service agent without uploading to the web site.
- 3.5 Each three-monthly service shall, as a minimum where provided, include a check on all mechanical, electrical and functioning parts of the system including:
  - The chlorinator and replenishment of the disinfectant,
  - Pump and air blower,
  - The alarm system,
  - Slime growth on the filter media,
  - Operation of the sludge return system,
  - The effluent irrigation area,
  - On-site testing for free residual chlorine, pH and dissolved oxygen at the appropriate check points.

#### 4. Verification

4.1 Effluent from the FujiClean ACE 1200 taken in any random grab sample shall comply with the following standard:

- BOD<sup>5</sup> less than 30 mg/L
- TSS 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

#### 5. 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 1547:2012:

- above ground spray irrigation; and/or
- surface drip irrigation covered by mulch; and/or
- sub-surface drip irrigation installed at around 100 mm depth; and or
- any form of sub-soil application.

Each of the forms of irrigation or application is subject to the approval of the local council.

#### 6. Advanced Secondary Treatment System

6.1 The FujiClean ACE 1200 when tested by a Product Certification Body in accordance with AS1546.3:2017 was found to comply with the Advanced Secondary Effluent Criteria as follows:

**TABLE 2.1 (Abrev) AS1546.3:2017  
ADVANCED SECONDARY EFFLUENT COMPLIANCE CRITERIA FOR A STS**

Parameter	Advanced secondary effluent	
	90% of Samples	Maximum
BOD5	≤ 10mg/L	12 mg/L
TSS	≤ 10 mg/L	8 mg/L
<i>E. coli</i> *	≤ 10 cfu/100mL	3 cfu/100mL
FAC p	Minimum 0.5 mg/L†	N/A
Turbidity ?	N/A	10 NTU

\* Where disinfection is required.

p Where chlorine disinfection is used.

† Minimum level, not 90% of samples.

? Where UV light is used for disinfection.

#### 7. Reduction in Nutrient Levels

During the testing of the Fuji Clean ACE1200 AWTS the influent and treated effluent were tested for total Nitrogen (TN) and total Phosphorus (TP) concentrations.

AS1546.3:2017 requires a maximum Total Nitrogen of 15 mg/L and Total Phosphorous of 2 mg/L to pass the nutrient reduction test. While the Fuji Clean ACE 1200 passed TN it did not the TP result. The treatment process was found to:

- Reduce Total N by 79.05 %;
- Reduce Total P by 14.50 %.

The test report and test results should be consulted for further detailed information.

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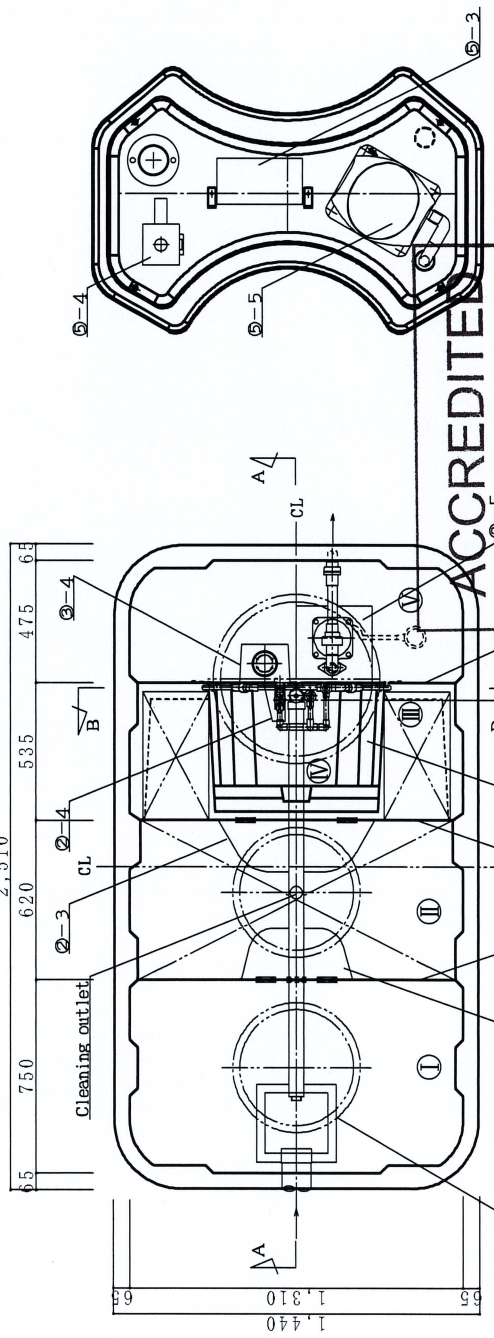
Local Council STS Service Report: February 2018		
Owner's Name:	Local Council:	
Installation Address:		
System Brand & Model:	<input type="checkbox"/> Domestic	<input type="checkbox"/> Commercial
Date of this service: / /	Date of last Service: / /	Next service due: / /
Has the STS/DGTS been <b>serviced</b> in accordance with the manufacturer's / supplier's requirements and using the service sheet? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No" why not?		
STS/DGTS <b>functioning</b> correctly? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No" why not?		
<b>According to sludge-judge or other methodology is de-sludging needed?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" what action is recommended?		
<b>Offensive odours?</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes" what action is recommended?
<b>Alarms</b> tested and functional?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If not "functional" what action is recommended?
<b>Final Effluent Quality</b>		
Tested?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Disinfected?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Chlorine tablets remaining?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Quality?	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Unsatisfactory
On what evidence is this judgement made? If "Unsatisfactory" what action was recommended?		
<b>Land Application Area</b>		
Surface ponding?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Run off?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Excess plant growth?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Effluent leaving premises.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
High risk areas contaminated? *	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Operating satisfactorily?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		* Patio, play areas, BBQ, etc If "Not operating satisfactorily" what action was recommended?
<b>Overall Condition of STS?</b> <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor		
Comments / Action Recommended / Repairs Needed / Repairs Performed:		
Has the owner / occupier taken recommended actions? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Service Agent:	Contact Details:	
Signature:	Date:	

Source: Adapted from "Checklist 4.2: Operational AWTS inspection report for use by service providers and Council inspectors" in *Designing and Installing On-Site Wastewater Systems*, Sydney Catchment Authority, May 2012

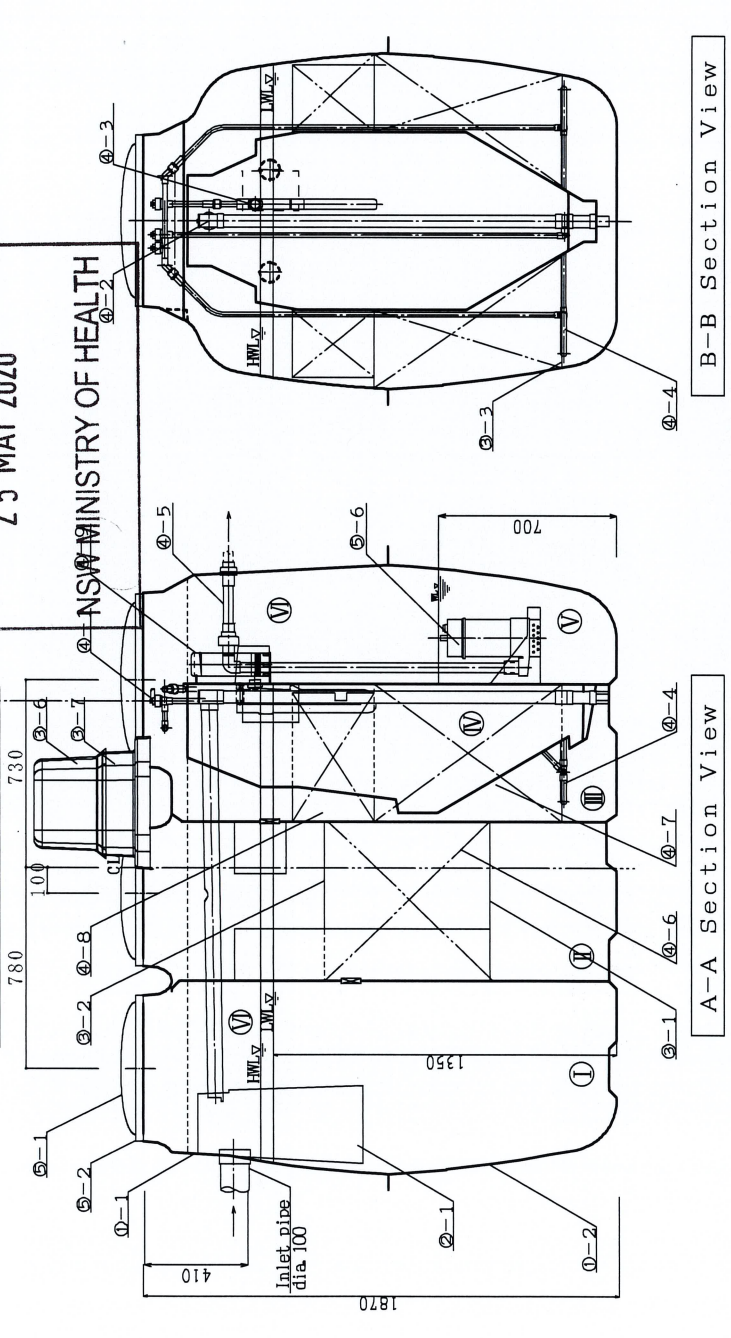
①-1	Upper Shell
①-2	Lower Shell
①-3	Partition A
①-4	Partition B
①-5	Partition C
①-6	Clarification Chamber Unit
②-1	Inflow Baffle
②-2	Outflow Baffle
②-3	Scum Baffle A
②-4	Scum Baffle B
③-1	Anaerobic Chamber Support Frame
③-2	Anaerobic Chamber Suppress Frame
③-3	Aerobic Chamber Support Frame
③-4	Chlorinate Cylinder Stand
③-5	Pump Stand
③-6	Blower Box Cover
③-7	Blower Box Stand B
④-1	Air Supply Pipe Kit
④-2	Recirculation Air-lift Pump
④-3	Effluent Air-lift Pump
④-4	Aeration Pipe
④-5	Pipe Kit for Pump
④-6	Spherical-skeleton Media
④-7	Net-hollow-cylindrical Media
④-8	Net-block Media
④-9	Chlorinate Cylinder
⑤-1	RISP Domed Lid
⑤-2	Riser to Tank Adaptor
⑤-3	Alarm Panel and Connector Box
⑤-4	Power Box
⑤-5	Blower
⑤-6	Pump

I	Sedimentation Chamber	1.114m³
II	Anaerobic Filtration Chamber	0.982m³
III	Aerobic Contact Filtration Chamber	0.580m³
IV	Clarification Chamber	0.281m³
V	Disinfection/Pump Chamber	0.308m³
VI	Emergency Storage capacity	1.104m³

Name				FujiClean ACE	
Designed Date				Overall view	
Nov '2018	H. Saito	H. Igara	Check	Number	Scale
Fuji Clean Co., Ltd.					



Blower Box Top View



B-B Section View

ACCREDITED

25 MAY 2020

NSW MINISTRY OF HEALTH