Tasmanian Government

Certificate of Accreditation

On-Site Wastewater Management System

This Certificate of Accreditation is hereby issued by the Minister for Building and Construction pursuant to Section 18 of the *Building Act 2016* and the Plumbing Code of Australia as applicable.

System:	Fuji Clean ACE 1200 (8EP Max.) AWTS Secondary treatment system
Manufacturer or Supplier:	Fuji Clean Australia Pty Ltd, ACN 129 181 137
Of:	2/176 Siganto Drive, Helensvale Qld 4212

This is to certify that the Fuji Clean ACE 1200 (8EP) as described in Schedule 1, has been accredited for use as an on-site waste water management system in single dwellings (within plumbing installations in Tasmania). This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and the Plumbing Code of Australia as applicable.

Peter John Graham
Director of Building Control
Delegate of the Minister for Building and Construction

Date of Issue: 31/08/20 **Certificate Number: DOC/20/66067**

This Certificate of Accreditation is in force until 14/08/25
Unless withdrawn earlier at the discretion of the Director of Building Control

Document Development History

Version	Application date	Sections amended
1.0 14/08/20	New Model to AS1546.3:2017	Original release

Schedule 1: Specification

(Informative)

Fuji Clean ACE1200 8EP AWTS (Advanced) Secondary Treatment System

General Description

The Fuji Clean ACE1200 (*'the system'*) collects and treats domestic wastewater.

The *system* comprises:

One 4369 litre Fibreglass Reinforced Plastic (FRP) moulded tank containing:

- 1114L sedimentation chamber (primary treatment)
- 982L anaerobic filtration chamber(primary treatment)
- 580L aerobic contact filtration chamber containing contact and filter media
- 281L Storage chamber
- 308L Chlorine disinfection/ irrigation chamber containing the chlorinator unit and irrigation pump. The chamber has further emergency capacity of 1094L
- 100L/minute Air Blower
- High and low level float switch, and
- Alarm panel monitoring power, high water and air pressure faults. This is connected to a remote audio and visual alarm to alert the householder.

The *system* requires a 240V AC power supply.

The *system* has been certified by Global Certification to AS/NZS 1546.3:2017 and AS/NZS 1546.1:2008. The *system* is designed to treat a Hydraulic Load of 1200 litres of domestic wastewater per day from a residential premises. The Raw Influent used in the testing of the *system* met the requirements AS/NZS 1546.3:2017 Appendix A4.1. The effluent test results for 100% of samples showed:

- BOD5 less than or equal to 10mg/L
- TSS less than or equal to 10mg/L.
- E. coli less than or equal to 10cfu/100mL
- For *system* cutaway drawings, flow path schematic, sectional diagram and components diagram refer to Appendix A.

For Engineering drawings refer to Appendix B.

For treatment system components list refer to Appendix C

Energy consumption:

Estimated Electricity Usage for a 4 person household with average daily wastewater flows and loads:

Electrical Equipment	Watts	Daily operation (hours) specified by manufacturer	kWh/year	Estimated Annual Cost @ $0.2659/kWh As at July 2020, Aurora Energy tariff 31
Fuji Sub pump	1000	0.5	183	$48.70
Fuji Mac air Blower	68	24	596	$158.50
Alarm system	5	24	44	$11.70

Description of Treatment Processes

Sedimentation Chamber

Wastewater enters the Sedimentation Chamber which is designed to physically separate the gross solids and fat and grease from the incoming wastewater.

Anaerobic Filtration Chamber

This chamber contains a spherical-skeleton type of filter media. Anaerobic bacterial growth on the surface of the filter media captures and decomposes suspended solids. The bacteria in this chamber convert nitrates in the recirculated water returning from the aerobic chamber to gaseous nitrogen.

Aerobic Contact Filtration Chamber

The aeration chamber consists of an upper section with plastic lattice board media plates and hollow net media in the lower section. An air diffuser continuously supplies the micro-organisms with oxygen. In the upper section, the lattice board media adjusts inflow from the anaerobic filtration chamber and organic matter is decomposed by micro-organisms/bacteria on the contact media surface. Also, organic matter is decomposed by micro-organisms/bacteria on the lower filter media surface while suspended solids are captured in the lower section. Suspended solids accumulated on the bottom are constantly transferred to the sedimentation chamber by a recirculation air-lift pump.

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

Hydraulic Loading and Effluent Quality

ACE-1200 is designed to treat all household wastewater from the kitchen, bathroom, toilet and laundry and capable of producing Secondary Quality Effluent as specified below. The daily design flow rate of ACE-1200 is 1,200 L/day (8EP).

- BOD5 equal to or less than 10mg/L
- Total Suspended Solids equal to or less than 10mg/L
- E. coli equal to or less than 10cfu/100mL
- State the Nitrate concentrations less than or equal to 14.79mg/L NO3-N
- Total phosphorous concentrations less than or equal to 10.33mg/L TP

Schedule 2: Conditions of Accreditation

(Normative)

1.0 Definitions

Where included in this Certificate of Accreditation and Schedules:

AS/NZS 1547 means '*AS/NZS 1547:2012 On-site domestic-wastewater management'*

AS/NZS 1546.3 means '*AS/NZS 1546.3:2017 On-site domestic wastewater treatment units, Part 3: Secondary Treatment Systems (STS)'*

AS/NZS 3000 means '*AS/NZS 3000: Electrical installations Wiring rules*

AS/NZS 5667 means '*AS/NZS 5667.1:1998 Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and preservation and handling of samples'*

BOD_5 means '5-day Biochemical Oxygen Demand'

Council means 'the Municipal Council having jurisdiction'

Commissioned means 'when the test results from a NATA Certified Laboratory show that the water quality requirements for the *system* have been met and all pre-commissioning tests have been carried out in accordance with AS/NZS 1547 on all associated equipment including the land application system'

Designer means 'a person that is an accredited building practitioner or licensed plumber under the Act and who has a specialty in the area of designing on-site waste water management system installations'.

Director means 'the Director of Building Control'

EC means electrical conductivity

E. coli means 'Escherichia coli of the family Enterobacteriaceae which is a bacterium used in public health as an indicator of faecal pollution'

EP means 'Equivalent Population or Equivalent Persons'

g/m^3 means grams per cubic metre which is equivalent to milligrams per litre (mg/L)'

Informative defines the application of Schedule 1, which is for information and guidance only

Manufacturer means '**Fuji Clean Pty Ltd'**

NATA means 'National Association of Testing Authorities'

Normative defines the application of Schedule 2, which is an integral part of the Certificate of Accreditation

PCA means 'Vol. 3 of the National Construction Code (Plumbing Code of Australia)'

Permit work means 'a Permit issued by the *council* pursuant to the *Building Act 2016'*

Permit authority means 'a person or body authorised for that purpose by the *council* of the municipal area in which the on-site waste water management system is installed'

Plumber means a person who holds an appropriate class of licence under the *Occupational Licensing Act 2005* as a Plumber Practitioner (Certifier).

Supplier means 'the party that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based.' The supplier for the **Fuji Clean ACE1200 is Fuji Clean Pty Ltd.**

System means '**Fuji Clean ACE1200**

TN means 'Total Nitrogen'

TP means 'Total Phosphorus'

TSS means 'Total Suspended Solids'.

2.0 General

2.1 This Certificate of Accreditation is valid up until the date nominated on the front page of this accreditation. Any application for variation or renewal must be accompanied by Product Certification to AS/NZS1546.3 that has been issued by a JAS-ANZ accredited Conformity Assessment Body (CAB) and other required documentation in accordance with the latest Application for Accreditation Form. The Certificate of Accreditation may be withdrawn by the Director at any time and is not transferable.

2.2 This certificate supersedes all previously issued certificates.

2.3 The system must be supplied, constructed and installed in accordance with the design submitted and accredited by the Director.

2.4 The *system* must not be installed in a plumbing installation other than in accordance with the conditions of permit issued by the *Permit Authority*.

2.5 Each *system* must be permanently and legibly marked on a non-corrosive metal plaque or equivalent, attached to the lid with the following information:

- The brand and model name or designation of the system
- The manufacturer's name or registered trademark
- Top load limitations, and
- The month and year of manufacture.

2.6 The *supplier* must supply the owner and occupier, of each installation, with a user manual setting out the following:

- the treatment process
- procedures to be followed in the event of a *system* failure
- emergency contact number
- care, operation, monitoring and maintenance requirements, and
- inspection and sampling procedures to be followed as part of the on-going monitoring and program required by the *permit authority*.

2.7 Any proposed modifications to the *system's* specified processes, equipment, materials, fittings or manuals must have prior authorisation in writing from the *Director* and may be subject to additional verification or testing.

2.8 Each application to a *permit authority* to install a *system* must be accompanied by a site-and-soil evaluation report and design report in accordance with *AS/NZS 1547* as appropriate.

2.9 The *supplier* must provide the following information to each *permit authority* where it is intended to install a *system* in their jurisdiction:

- 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 system Specifications
- Copy of Certificate of Accreditation and Schedules.

2.10 This Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the *Director* and is not transferable.

2.11 At each anniversary of the accreditation date the *supplier* must submit to the *Director* a list of all *systems* installed in Tasmania during the previous 12 months. The *Director* may randomly select up to 10% of the installed *systems* from each year of installation. The *Director* will notify a nominate *NATA* accredited laboratory which *systems* are to be sampled and tested for BOD_5 and *TSS* and Chlorine residual. The sampling and testing of the selected *systems* is to be done at the *supplier's* expense. The following results must be reported to the *Director:*

- Address of premises
- Date inspected and sampled
- Sample identification number
- Chlorine Residual
- BOD5
- TSS
- E.coli, and
- Service history.

2.12 Where, due to a design fault, the *system* has been found not to operate satisfactorily during its service life and as a result requires modification to achieve the required water quality limits, all installed *systems* are to be modified accordingly.

2.13 When granting a *permit* the *permit authority* is to satisfy itself that the *designer's* choice of the *system* configuration is suitable for the proposed use and site conditions.

2.14 The *system* must not be deployed to areas where seasonal climatic conditions will adversely affect its proper operation (refer to *manufacturer's* specifications).

2.15 Prior to the granting of a *permit* to install a *system* the following reports (see AS/NZS 1547 Clause 7.4) must be submitted with an application to the *permit authority*:

- **Site-and-soil evaluation report**

The site and soil evaluation report is to detail results of an assessment of the individual lot(s) for the public health, environmental, legal and economic factors which are likely to impinge on the location and design of a land-application system. (Refer to AS/NZS 1547 Clause 5.2.4 and Appendices B, C, D, E & G).

- **Design report**

The Design Report is to include the following:

(a) Relevant aspects of the Site-and-soil Evaluation Report

(b) A report on the selection of the land-application system. (Refer to AS/NZS 1547, Clause 5.5.7)

(c) A report on the selection of the wastewater-treatment unit. (Refer to AS/NZS 1547, Clause 5.5.4 Appendix H and J)

(d) Sufficient information to show that the relevant performance requirements set out in the PCA have been met

(e) A loading certificate which sets out the design criteria and the limitations associated with use of the system and incorporates such matters as:

(i) *System* capacity ((number of persons (EP) and daily flow))

(ii) Summary of design criteria

(iii) The location of and use of reserve areas

(iv) Use of water efficient fittings, fixtures, or appliances

(v) Allowable variation from design flows (peak loading events)

(vi) Consequences of changes in loading (due to varying wastewater characteristics)

(vii) Consequences of overloading the *system*

(viii) Consequences of underloading the *system*

(ix) Consequences of lack of operation, maintenance and monitoring attention, and

(x) Any other relevant considerations related to the use of the *system*.

2.16 The following reports must be submitted to the *permit authority* and owner and be made available to the *Director* upon request after *commissioning* of the *system*:

- **Installation and commissioning report**

The Installation and Commissioning Report is to cover the 'as-constructed' records of the *system* installation together with the results of *commissioning* tests to demonstrate correct construction and installation and is to be provided to the owner and *permit authority* on completion of the work. (Refer to and AS/NZS 1547 Clause 6.2.5.4).

- **Inspection and Maintenance Report**

Maintenance reports cover ongoing inspection and maintenance operations in order to monitor the operation of the installation. (Refer to AS/NZS 1547 Clause 6.3.5, Appendix T & U).

2.17 Where the supplied pump is not suitably rated for the proposed land application area it must be replaced with a pump which has a rated capacity that matches the hydraulic characteristics of the irrigation system and be capable of discharging at least 50% more than the 30 minute flow rate. For drip irrigation systems, ensure that drip emitter flow rates do not vary more than 10% from the design rate over the whole of the system when installed on a sloping site.

Note: The pump selection is to be based on flow, head loss and pressure requirements.

2.18 Effluent distribution by sub-surface application may be permitted where the *Permit Authority* is satisfied that the application for a *permit* to install the *system* has demonstrated that the:

(a) effluent can be retained within the authorised land application area

(b) where applicable the land application system has been designed and is capable of being installed and maintained in accordance with *AS/NZS 1547*

(c) the location of the land application system satisfies the relevant requirements of the *State Policy on Water Quality Management 1997*, and

(d) the discharge is capable of satisfying the relevant water quality limits (see 5.2).

Product approval documentation

The following documents are referenced as part of this Accreditation:

Document	Document date
Global Certification Pty Ltd – Product Certificate of Registration No. 476: AS 1546.3.2017 Advanced Secondary 8EP Level	16/03/2019
Global Certification Pty Ltd – Product Certificate of Registration No. 249/4: AS 1546.1.2008 Fibreglass septic tank	27/03/2020
Global Certification Pty Ltd – Global Certification Audit Report AS1546.3.2017	Feb 2020
Japanese Standards Association – ISO9001 Certificate of Registration No. JSAQ 1109	05/03/2019
Japanese Standards Association – ISO9001 Appendix to the Certificate of Registration No. JSAQ 1109-10	05/03/2019
FujiClean ACE 1200 – Drawing – Overall view	Nov 2018
FujiClean ACE 1200 – Drawing B1000 - Shell	
FujiClean ACE 1200 – Installation Manual	01/12/2018
FujiClean ACE 1200 – Operation & Maintenance Manual	01/12/2018
FujiClean ACE 1200 – Owners Manual	01/12/2018
FujiClean ACE 1200 – Service Life Compliance Statement	07/05/2020
FujiClean ACE 1200 – Service Report	23/02/2020

3.0 Installation and Commissioning

3.1 The installation and operation of the system must comply with the conditions of accreditation and the *manufacturer's* instructions.

3.2 All plumbing work carried out in connection with the system installation must satisfy the requirements of the *Building Act 2016*, *Building regulations 2016*, The National Construction Code, Plumbing Permit (issued by the Permit Authority through the Council) and be carried out by a licensed plumber with appropriate training and competencies in onsite wastewater management systems.

3.3 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.

3.4 The *system* requires a 240V AC power supply. A weather-proof isolating switch must be provided at the power outlet. The power supply must have its own clearly marked designated circuit breaker in the electricity supply fuse box.

3.5 Each *system* installation must be inspected and checked by the *designer* or the designer's agent. The *designer* on completion is to certify that the *system* has been constructed, installed and *commissioned* in accordance with its design, the conditions of accreditation and any additional requirements set out in the *permit*.

> **Note:** Where the designer is not available to supervise the installation the designer should obtain signed certification from the installing plumber stating that the installation has been constructed/installed and commissioned in accordance with its design, the conditions of accreditation and any additional requirements of the council and/or permit authority

3.6 A report is to be prepared by the installing *plumber* detailing the inspection of the installation and the results of the *commissioning* tests and be accompanied by a certificate certifying that the *system* is operating and performing adequately (see 2.15).

3.7 Copies of the following reports/certificates must be submitted to the *council* and the owner as soon as practicable after the commissioning of the *system* and after each scheduled or unscheduled service or inspection for the period specified in the *permit*:

(a) The initial plant installation and commissioning report

(b) All required laboratory analytical test reports, and

(c) All inspection and maintenance reports.

3.8 Copies of any report or certificate required by the conditions of accreditation must be made available to the *Director* on request.

3.9 The *designer* is to provide a written statement or document warning the user of which items and products that must not be placed in the *system*.

3.10 To verify that the plant is commissioned, sampling must be carried out at the first scheduled maintenance service, by the either the maintenance contractor or the installation contractor, for BOD_5, *TSS* and Free Residual Chlorine. The samples are to be tested and reported on by a NATA certified laboratory. The test results are to be provided to the *council* and the owner.

4.0 Maintenance and monitoring

4.1 Each installation must be serviced and monitored at not less than 3 monthly intervals in accordance with the conditions of accreditation, the conditions of permit / maintenance specified in a Schedule of Maintenance and manufacturer's requirements.

Notes:

(1) Only a licensed plumber and or his or her qualified technician can carry out the maintenance and required monitoring of the system other than electrical work unless licensed to do so.
(2) The licensed plumber and his or her technician may need to complete training by the supplier before carrying out any maintenance on the system. The licensed plumber and their technician must comply with the applicable Directors Determination with regard to the training, reporting requirements and qualifications required to carry out servicing on the STS.
(3) The maintenance and monitoring intervals may be combined provided the monitoring frequency remains at 3 month intervals.

4.2 The owner of the system must enter into and maintain a maintenance contract with a suitable licenced plumbing contractor.

4.3 The owner must notify the council that a maintenance contract is in place for the maintenance of the STS.

4.4 The system must be operated and maintained to ensure it performs continuously and without any intervention between inspections carried out by the *plumber*.

4.5 A service report is to be prepared by the *plumber* who carried out the work detailing the inspection of the installation and the results of all servicing tests and conditions at the completion of all scheduled or unscheduled services or inspections.

4.6 The service report is to be accompanied by a signed document certifying that the *system* is operating and performing adequately.

4.7 A copy of the service report and certifying document is to be provided to the occupant and *council*. Each service report is to contain a statement reminding the user about items and products that must not be placed in the *system*.

4.8 Each service must include monitoring the operation of the *system* and associated land application system.

4.9 Maintenance must be carried out on all mechanical, electrical and functioning components of the *system* including the associated land application system as appropriate.

4.10 The monitoring, servicing and reporting of the installation must include but not be restricted to the following matters, as appropriate:

4.10.1 Reporting on weather conditions, ambient temperature, effluent temperature

4.10.2 Odour

4.10.3 Check and test pump

4.10.4 Check and test air blower, fan or air venturi and clean/replace air filters

4.10.5 Check and test alarm system

4.10.6 Check slime growth on membranes and report the on condition of membranes

4.10.7 Check and report operation of sludge return, sludge level and de-sludging

4.10.8 Check and record water meter reading (if fitted)

4.10.9 Check and record operation of irrigation area, irrigation fittings

4.10.10 Check and clean/replace irrigation filters

4.10.11 Check and report on water quality (testing for pH, Turbidity, EC and dissolved oxygen)

4.10.12 Check, and replenish chlorine disinfection system

4.10.13 Cleaning of the following items at above the waterline –

I. clarifier

II. pipework

III. valves

IV. walls of chambers.

5.0 Performance

5.1 Hydraulic and Organic Loading:

The *system* is accredited for treatment of domestic wastewater as defined in AS1546.3:2017 clause 1.8.7, limited to 8EP with the following MAXIMUM hydraulic and organic loads:

Model	Hydraulic load (L/day)	Biochemical Oxygen Demand (g/day)
Fuji Clean ACE1200 (EP)	1200	560

5.2 Water Quality Limits:

Treated effluent from the *system* must not exceed the following limits 90% of samples: for the uses specified in section 7.0.

For sub-surface irrigation:	
5-day Biochemical Oxygen Demand (BOD_5)	10 g/m^3 (max. 20 g/m^3)
Total Suspended Solids (TSS)	10 g/m^3 (max. 20 g/m^3)
For surface irrigation:	
5-day Biochemical Oxygen Demand (BOD_5)	10 g/m^3 (max. 20 g/m^3)
Suspended Solids (SS)	10 g/m^3 (max. 20 g/m^3)
E. coli	10 cfu/100 mL (max. 30 cfu/100 mL)
Free Residual Chlorine concentrations	≥ 0.5 g/m^3

6.0 On-going management

6.1 The mandatory servicing and monitoring is to commence 3 months after the *system* is *commissioned*. The servicing and monitoring is to coincide with the *supplier's* required on-going routine scheduled maintenance program.

6.2 Where a *system* installed at a site has been found not to operate satisfactorily during its service life, and as a result requires modification to achieve the required performance requirements, in particular, water quality limits, the installed *system* is to be modified accordingly. Any modifications must be recorded on the service report.

6.3 In the event of failure to comply with the water quality limits set out in these conditions, fortnightly sampling and testing for *BOD_5*, *TSS* and Free Residual Chlorine must be carried out until the plant is *re-commissioned.*

6.4 The method of preserving and the handling of samples taken from the plant must satisfy the relevant requirements of *AS/NZS 5667.*

6.5 Copies of the following reports and certificates must be submitted to the *permit authority* and the owner as soon as practicable after the *commissioning* of the *system* and after each scheduled or unscheduled service for the period specified in the *permit:*

(a) the initial plant installation and *commissioning* report
(b) all laboratory analytical test reports; and
(c) all inspection and maintenance/service reports

6.6 The *system* is to be de-sludged strictly in accordance with the *manufacturer's* recommendations and the sludge is to be disposed of in accordance with the Tasmanian Biosolids Reuse Guidelines and the conditions of *permit.*

6.7 Only persons with a waste transport business Environment Protection Notice are to be engaged for the removal, transporting and disposal of accumulated sludge removed from the *system.*

6.8 Any waste material removed from the *system* must be collected and disposed of or utilised by an approved facility or agency.

6.9 Measures are to be put in place so that during servicing activities all persons and the environment will be protected from the results of the servicing activities.

7.0 Permitted uses

7.1 The effluent is suitable for land application by any of the following methods:

(a) sub-surface by:
   i. subsurface drip irrigation
   ii. trenches, beds, mounds, evapo-transpiration systems

(b) above ground by:
   i. spray irrigation
   ii. surface drip irrigation

Note: Each of the above forms of Land Application is subject to consent from the permit authority and must be in accordance with the relevant provisions of AS/NZS 1547.

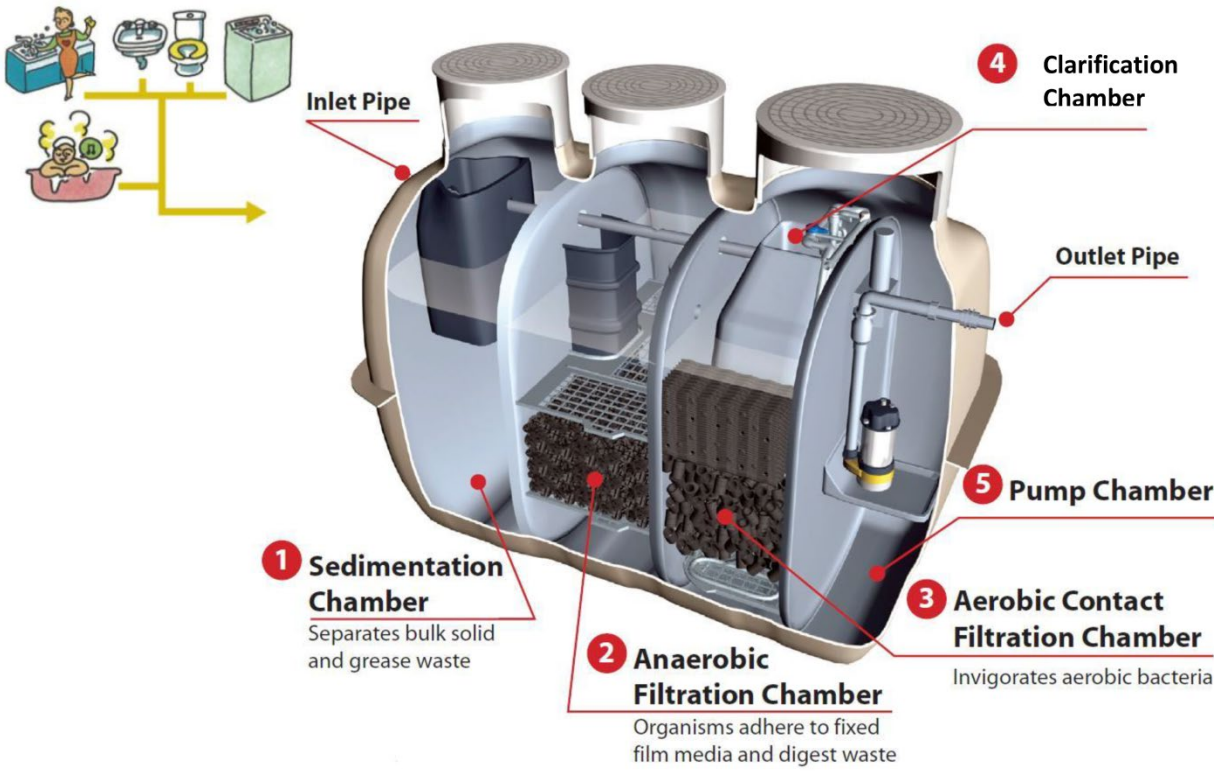
7.2 Where it is not practicable for effluent from the system to be applied in accordance with *AS/NZS 1547* the method of discharge must be in accordance with the relevant performance requirements within the NCC as a performance solution and to the satisfaction of the *permit authority*.

Appendix A

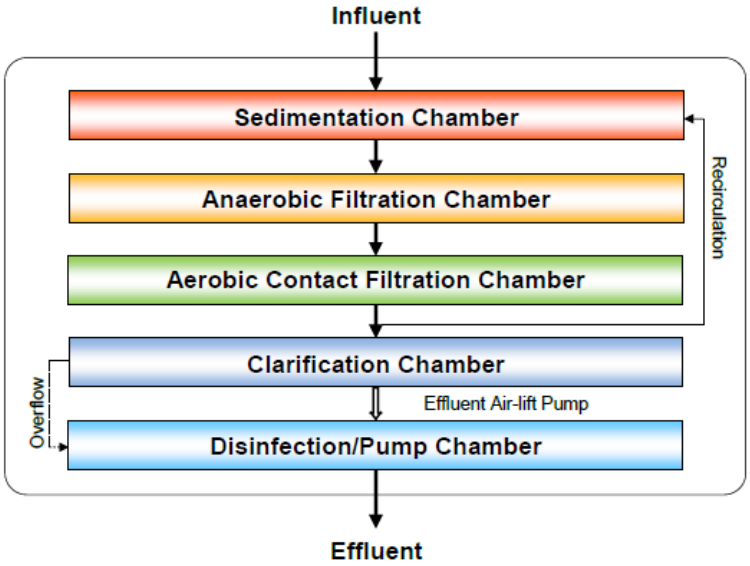
Cutaway drawings, schematic and sectional view

Fuji Clean ACE-1200 (8EP)

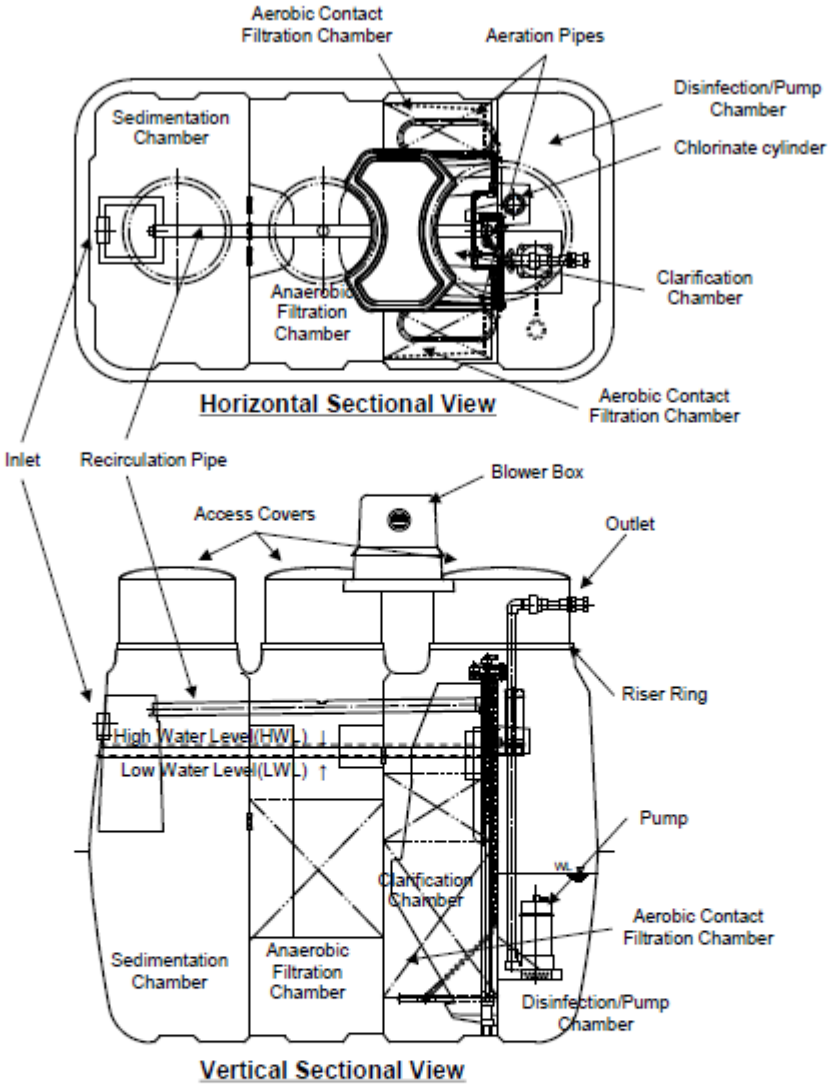
Cutaway view of the tank



Schematic diagram of treatment process



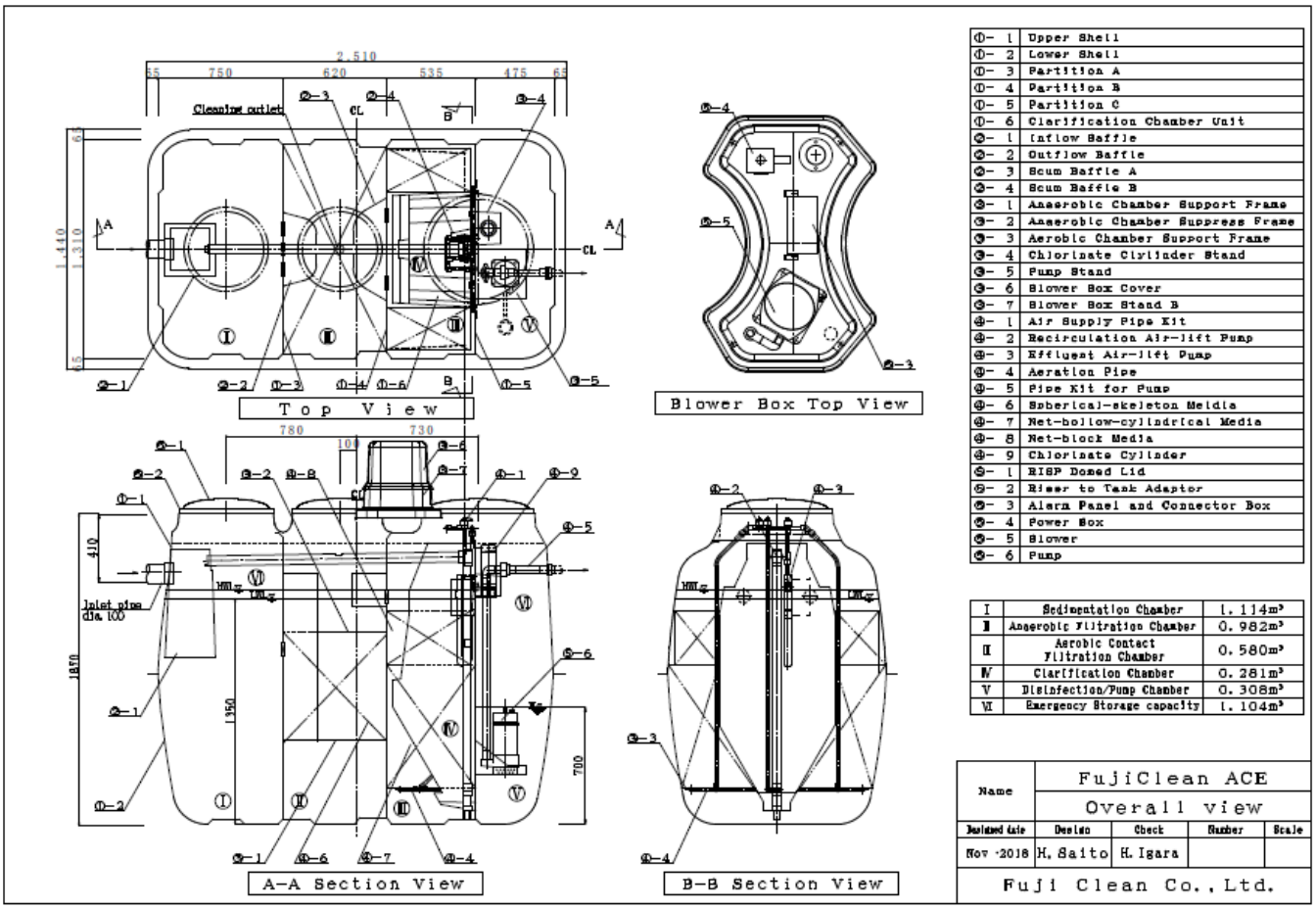
Appendix B



SPECIFICATIONS			
Volume (L)		**Dimensions (mm)**	
Sedimentation Chamber	1,114	Width	1,440
Anaerobic Filtration Chamber	982	Length	2,510
Aerobic Contact Filtration Chamber	580	Height (with No risers)	1,870
Clarification Chamber	281	Height (with 300mmH risers)	2,210
Disinfection/Pump Chamber	308	Height (with 500mmH risers)	2,360
Total Volume	3,265	Inlet Invert (with No risers)	500
		Inlet Invert (with 300mmH risers)	800
Weight (kg)	430	Inlet Invert (with 500mmH risers)	950
		Inlet Pipe Nominal Size	Dia. 100
		Outlet Pipe Nominal Size	Dia. 25

*Access cover lids are not included in the height

Engineering Drawings



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 Meidia
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			
	Overall view			
Designed date	Design	Check	Number	Scale
Nov -2018	H. Saito	H. Igara		
Fuji Clean Co., Ltd.				

Appendix C

Sampling Procedure for Fuji Clean ACE-1200 (8EP)

Equipment Needed

Fuji Clean service technician is required to provide equipment as required to facilitate sampling including:

1. Sub surface sampler. Approx. 1.8m long with a sample taking or bottle holding device on the end. Commercial examples – Tank Sampler (Thermo Fischer), Series 6000 Jar Sampler (Ben Meadows), Grab Sampler Li (Rickly Hydrogeologic),
2. Hex drive bit and battery drill, or socket set and driver.

Sampler / Auditor is to provide:

1. Sterilised esky to transport the samples to the laboratory within 24hrs at a temp of less than 4 Degrees Celsius.
2. Approved Sampling bottles

Procedure

Please note that steps 1-6 below will be performed by a Fuji Clean service technician upon request by the relevant Authority conducting the sampling / auditing. The service technician is also responsible for securing all plant and equipment upon completion of the sampling / auditing.

1. Fuji Clean accredited service technician unscrews and opens the motor box and effluent chamber, ensuring that there is nothing mechanically wrong with the system.
2. Turn the power to the system off at the GPO.
3. Prepare the sampler or sample bottle on the sampling stick.
4. Mark the sample pole at 1450mm from the sample inlet. Lower the sampler until the mark is level with the lip of the effluent chamber. This will ensure the sample is taken at the same level as the inlet to the irrigation pump.
5. Allow sampler or sample bottle to fill completely before raising from the sampling height.
6. Promptly fill, and or, seal the sample. Making sure not to contaminate the sample.

The Sampler / Auditor is responsible for the following steps:

7. Label accordingly and place sample in sterilised esky at 4 degrees Celsius or lower.
8. Deliver to laboratory, complete with relevant Chain of Custody forms.
9. If further samples are required or you are sampling another plant, please sterilise equipment and repeat procedure.