



Certificate of Accreditation

Sewage Management Facility

Aerobic Sand Filter

Advanced Secondary Treatment System

Nutrient Reduction

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 2021.

System: *Envirotech 10 CP Signature Series Aerobic Sand Filter Advanced STS with Nutrient Reduction*

Manufacturer: *Pinnacle Envirosystems Pty Ltd
ta Envirotech Treatment Systems*

Of: *44 Palmerin St, Warwick, QLD, 4370*

The Envirotech 10 CP Signature Series Aerobic Sand Filter Advanced STS with Nutrient Reduction as described in Schedule 1 has been accredited as a sewage management facility for use in 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: *20 / Feb / 2023*

Certificate No: *STS-ASF001*

Expires: *31 December 2027*

Schedule 1: Specification

Envirotech 10 CP (Chris Palmer) Signature Series Aerobic Sand Filter Advanced Secondary Treatment System with Nutrient Reduction (referred to as the Envirotech 10 CP Signature Series ASF)

General Description:

The STS is designed to treat sewage from a residential dwelling occupied by a maximum of 10 persons.

The STS is contained in the following compartments of a single tank:

Chamber	Design capacities
Primary Treatment Chamber <ul style="list-style-type: none"> • Partitions 	1998 L Yes, five chambers cast inside a single tank
Secondary Treatment Chamber <ul style="list-style-type: none"> • Filter Pump Chamber • Clarifier • Irrigation Chamber • Aerobic Sand Filter (external) 	864 L 2,034 L 397 L 364 L 8.100 L
Emergency Storage <ul style="list-style-type: none"> • Filter Pump Chamber 	2,034 L

The emergency storage capacity is achieved by recirculating from the ASF (aerobic sand filter) back to the filter pump chamber. Normal working height of filter pump chamber is the bottom of float on pump, i.e. 300L

The Envirotech CP Signature Series advanced secondary aerobic sand filter with nutrient reduction has the following components:

Primary treatment chamber (anaerobic): Sewage from the dwelling flows into the primary treatment tank where a physical separation of foreign material such as fat, grease and scum occurs and allows for a reduction in BOD and TSS concentrations.

Secondary treatment chamber (anaerobic): Flows from primary treatment to secondary settlement chamber where the above continues to occur with additional settlement.

Filter pump chamber(aerobic): Primary treated wastewater flows into the filter pump chamber where it is pumped to the ASF on timer for example a 7 minute run time every hour, Effluent then flows to the sand filter.

Aerobic sand filter (aerobic): The wastewater flows from the filter pump chamber into the aerobic sand filter for natural aerobic treatment through sand filter media. The ASF is open at the top with a layer of sand to prevent fines from atmosphere entering the filter. The filter draws oxygen from the atmosphere down through the ASF. Two parts of the treated effluent returns to the same filter pump chamber and one part continues to the clarifying chamber. This process continuously recirculates each time the filter pump is operated.

Clarifier chamber (aerobic): Treated wastewater is transferred into the clarifier allowing for the removal of settled solids. The solids are transferred to the pump out chamber through a grease filter and chlorinator for disinfection.

Pump out chamber (aerobic): The treated effluent has been disinfected and is ready to be pumped out to the appropriate irrigation area via the float on the irrigation pump.

NOTES

1. The system does not use a mechanical air blower or the associated parts that go with it.
2. The Alarm System is an EES64 manufactured by Electronic & Electrical Solutions and approved to AS3105.

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 2021*, to the local authority for approval to install and operate the Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF issued under Clause 45(4), *Local Government (General) Regulation 2021*.

1.3 In accordance with Clause 36 of the *Local Government (General) Regulation 2021*, the Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF is installed or constructed:

- in accordance with the accredited specifications of the type tested unit and in accordance with good trade practice, and
- so as to allow ease of access for maintenance, and
- with regard to the health and safety of users, operators and persons maintaining the facility, and
- must be installed or constructed so as 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF. The manual 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 a Envirotech 10 CP Signature Series ASF in their area once Ministry Accreditation has been obtained:

- Statement of warranty
- Statement of service life
- Quality Assurance Certification
- Installation Manual
- Service Manual
- Owner's Manual
- Manufacturer's Service Report Form

- Engineering Drawings
- Specifications
- A4 Plans
- Certificate of Accreditation 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 Envirotech 10 CP Signature Series ASF 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 owner / occupier shall ensure that all electrical work is carried out on the Envirotech 10 CP Signature Series ASF by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.

2.3 The owner / occupier shall not commission the Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF 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 Envirotech 10 CP Signature Series ASF;
 - uses replacement parts which meet the minimum specification of the Envirotech 10 CP Signature Series ASF;
 - has advised of their name, contact details and credentials to the local authority;
 - submits a completed NSW Health "Local Council Service Report" (template attached) to the local authority immediately after each and every service;
 - shall report to the local authority 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 Envirotech 10 CP Signature Series ASF unless they are an authorised agent of the manufacturer.

3.3 The Envirotech 10 CP Signature Series ASF once installed and commissioned shall be serviced at twelve (12) monthly intervals.

3.4 The manufacturer / supplier of the Envirotech 10 CP Signature Series ASF shall place on its web site a copy of the service manual, service sheet or form and specifications for the Envirotech 10 CP Signature Series ASF 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 twelve-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 Envirotech 10 CP Signature Series ASF taken in any random grab sample shall comply with the following standard:

- BOD⁵ 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

The effluent is suitable for reuse 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 authority.

6. Advanced Secondary Treatment System

The Envirotech 10 CP Signature Series ASF 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

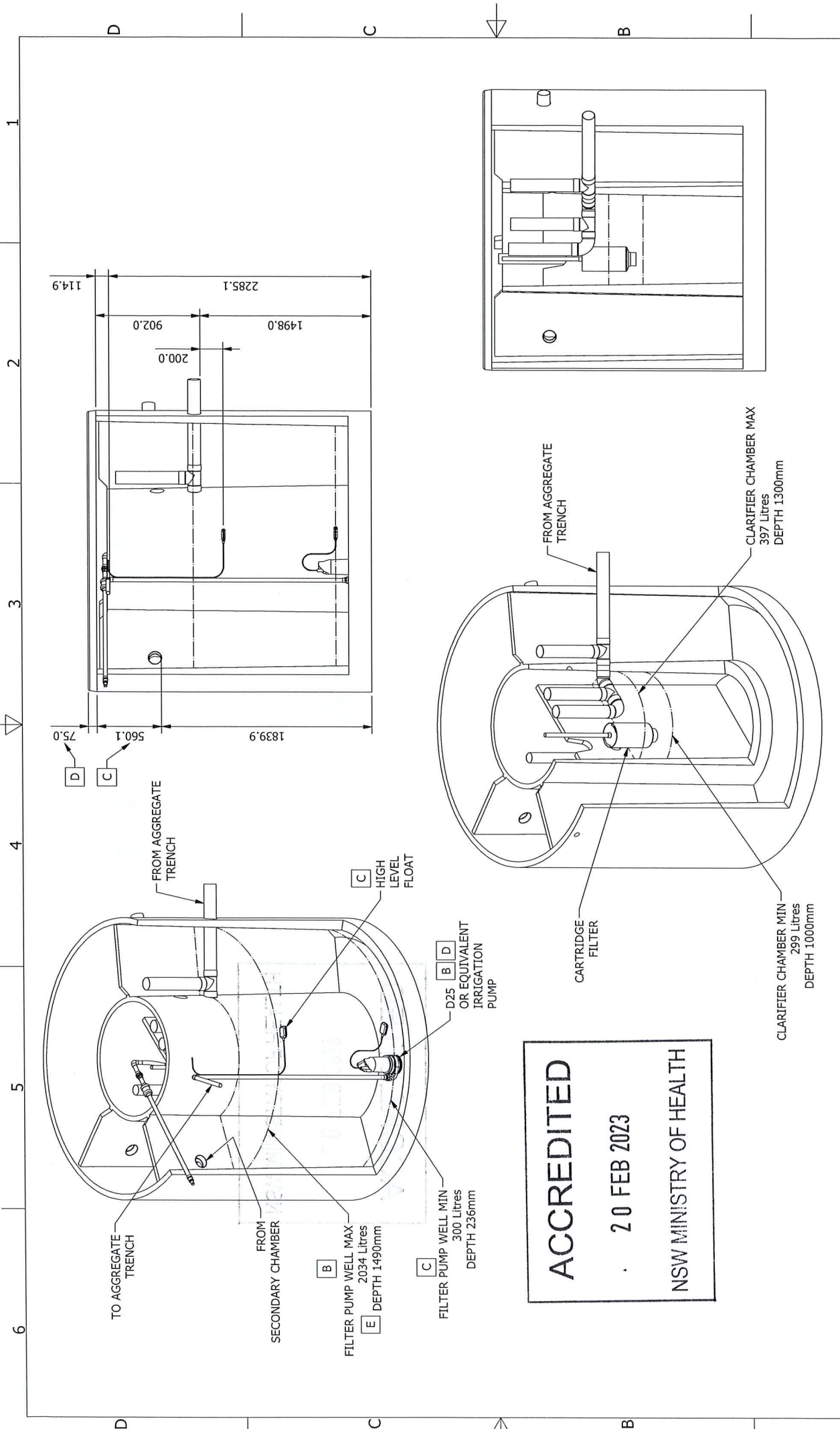
During the testing of the Envirotech 10 CP Signature Series ASF the treated effluent was tested for total Nitrogen (TN) and total Phosphorous (TP) concentrations. The treatment process has the capacity to reduce the TN and TP concentrations as follows:

- Total N measured average reduction of 39.27 %.
- Total P measured average reduction of 36.43 %.



Local Council STS (DGTS) 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 serviced 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 functioning correctly? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No" why not?		
According to sludge-judge or other methodology is de-sludging needed? <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" what action is recommended?		
Offensive odours?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "Yes" what action is recommended?
Alarms tested and functional?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If not "functional" what action is recommended?
Final Effluent Quality		
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?		
Land Application Area		
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	* Patio, play areas, BBQ, etc
Operating satisfactorily?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If "Not operating satisfactorily" what action was recommended?
Overall Condition of STS? <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



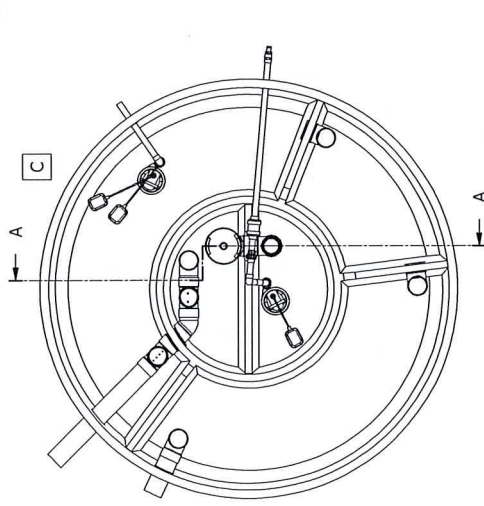
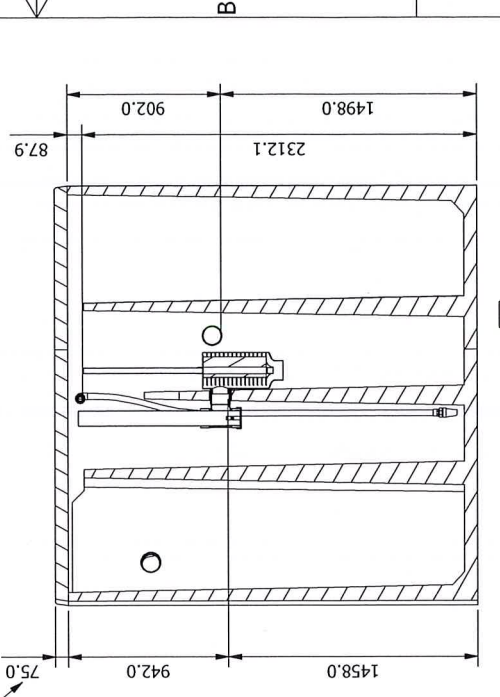
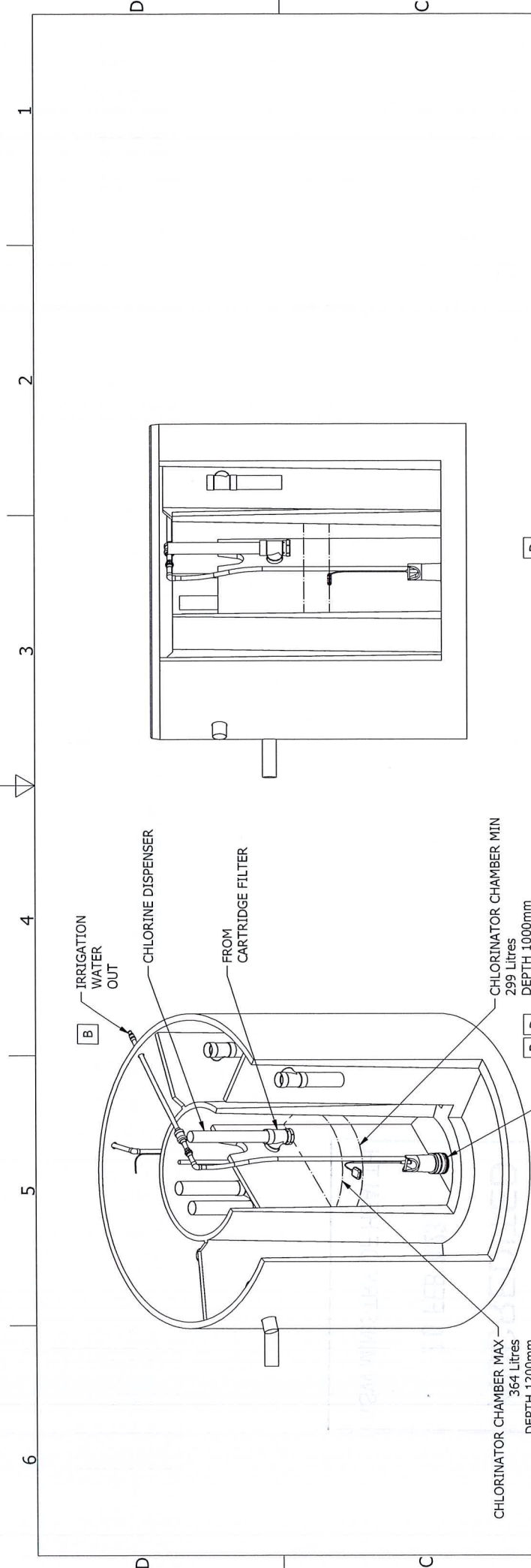
REV	DESCRIPTION	DWN	CKD	APP	DATE	REVISION HISTORY
A	ISSUED FOR REVIEW	P.B	M.B	M.B	M.B	26/06/2022
B	INCORPORATED COMMENTS VIEW ADDED	P.B	M.B	M.B	M.B	09/07/2022
C	INCORPORATED COMMENTS VIEWS ADDED	P.B	M.B	M.B	M.B	13/08/2022
D	INCORPORATED COMMENTS DIMENSIONS ADDED OR CHANGED	P.B	M.B	M.B	M.B	30/08/2022
E	PROJECT TITLE DESCRIPTION AND DIMENSION CHANGED	P.B	M.B	M.B	M.B	22/09/2022
F	ISSUED FOR SUBMITTAL	P.B	M.B	M.B	M.B	06/10/2022

PART NO	CPSS 0000	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES TOLERANCES UNLESS OTHERWISE SPECIFIED	PROJECT	ENVIROTECH CP SIGNATURE SERIES	E	ENVIROTECH CP SIGNATURE SERIES LOW POWER / LOW MAINTENANCE WASTEWATER TREATMENT SYSTEM
STOCK NO	CPSS 0000	DECIMAL ANGULAR	CP SIGNATURE SERIES	25/06/2022		
NC PROGRAM		LINEAR ±0.5 ±0.1 ±0.1° ±0.1°	DRAWN	P.B		
PART FILE	CPSS 0000	REMOVE BURRS AND SHARP EDGES	CHKD			
DRAWING FILE	CPSS 0000	DO NOT SCALE IF IN DOUBT. ASK STATUS	ISSUED			
WEIGHT	N/A	ISSUED FOR REVIEW	CUSTOMER SUPPLIER	ENVIROTECH		

ENVIROTECH
TREATMENT SYSTEMS

ACCREDITED
20 FEB 2023
NSW MINISTRY OF HEALTH

NOTES

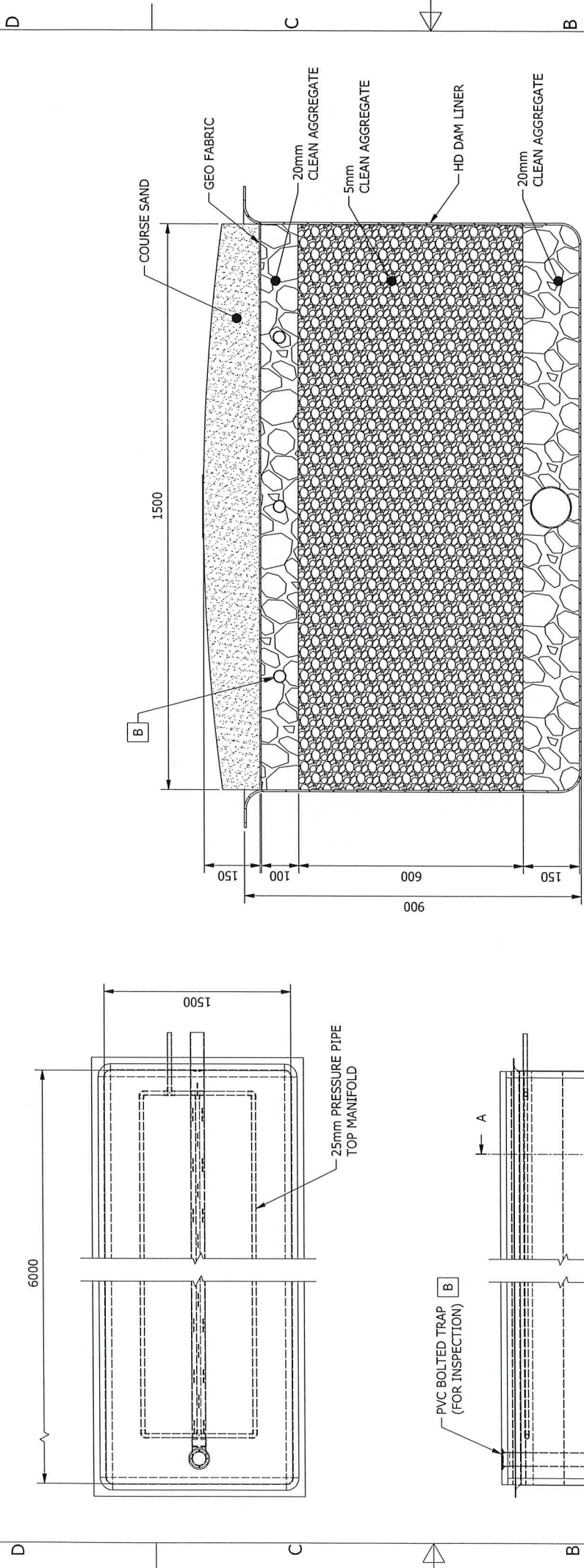


ACCREDITED
20 FEB 2023
NSW MINISTRY OF HEALTH

NOTES

F	ISSUED FOR SUBMITTAL	P.B	M.B	M.B	M.B	M.B	06/10/2022
E	PROJECT TITLE DESCRIPTION AND DIMENSION CHANGED	P.B	M.B	M.B	M.B	M.B	22/09/2022
D	INCORPORATED COMMENTS DIMENSIONS ADDED OR CHANGED	P.B	M.B	M.B	M.B	M.B	30/08/2022
C	INCORPORATED COMMENTS VIEWS ADDED	P.B	M.B	M.B	M.B	M.B	13/08/2022
B	INCORPORATED COMMENTS VIEW ADDED	P.B	M.B	M.B	M.B	M.B	09/07/2022
A	ISSUED FOR REVIEW	P.B	M.B	M.B	M.B	M.B	26/06/2022
REV	DESCRIPTION	DWN	CKD	APP	DATE	REVISION HISTORY	

ENVIROTECH TREATMENT SYSTEMS		PART NO CPSS 0000	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES TOLERANCES ARE UNLESS OTHERWISE SPECIFIED:	PROJECT CP SIGNATURE SERIES	ENVIROTECH CP SIGNATURE SERIES LOW POWER / LOW MAINTENANCE WASTEWATER TREATMENT SYSTEM
ENVIROTECH TREATMENT SYSTEMS		STOCK NO CPSS 0000	DECIMAL: ±0.5 ANGULAR: ±0.5° X.X: ±0.15 X.XX: ±0.15 X.XX: REMOVE ALL BURS AND SHARP EDGES DO NOT SCALE IF IN DOUBT ASK STATUS	25/06/2022	
ENVIROTECH TREATMENT SYSTEMS		NC PROGRAM	DO NOT SCALE IF IN DOUBT ASK STATUS	DRAWN: P.B CHKD: APPD	CUSTOMER: ENVIROTECH SUPPLIER:
ENVIROTECH TREATMENT SYSTEMS		PART FILE CPSS 0000	ISSUED FOR REVIEW	ISSUED	REV SIZE SHEET F A3 4 OF 4
ENVIROTECH TREATMENT SYSTEMS		DRAWING FILE CPSS 0000	ISSUED FOR REVIEW		
ENVIROTECH TREATMENT SYSTEMS		WEIGHT N/A	ISSUED FOR REVIEW		



ACCREDITED
20 FEB 2023
NSW MINISTRY OF HEALTH

SECTION A-A

A	ISSUED FOR SUBMITTAL	P.B	M.B	M.B	M.B	06/10/2022												
	MANIFOLD MOVED AND ELBOW, RISER AND TRAP ADDED	P.B	M.B	M.B	M.B	03/10/2022												
B	ISSUED FOR REVIEW	P.B	M.B	M.B	M.B	25/09/2022												
A	ISSUED FOR REVIEW	DWN	CKD	APP	DATE													
REV	DESCRIPTION																	
REVISION HISTORY																		
<table border="1"> <tr> <td>PART NO</td> <td>CPSS 1000</td> </tr> <tr> <td>STOCK NO</td> <td>CPSS 1000</td> </tr> <tr> <td>IC PROGRAM</td> <td></td> </tr> <tr> <td>BASE FILE</td> <td>CPSS 1000</td> </tr> <tr> <td>TEMPLATE FILE</td> <td>CPSS 1000</td> </tr> <tr> <td>WEIGHT</td> <td>N/A</td> </tr> </table>							PART NO	CPSS 1000	STOCK NO	CPSS 1000	IC PROGRAM		BASE FILE	CPSS 1000	TEMPLATE FILE	CPSS 1000	WEIGHT	N/A
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WEIGHT	N/A																	
<p>UNLESS OTHERWISE SPECIFIED TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <table border="1"> <tr> <td>DECIMAL</td> <td>LINEAR</td> <td>ANGULAR</td> </tr> <tr> <td>X.X</td> <td>±0.5</td> <td>±0.5°</td> </tr> <tr> <td>X.XX</td> <td>±0.05</td> <td>±0.05°</td> </tr> <tr> <td>X.XXX</td> <td>±0.005</td> <td>±0.005°</td> </tr> </table> <p>REMOVE ALL BURRS AND SHARP EDGES DO NOT SCALE IN DOUBT STATUS: ISSUED FOR REVIEW</p>							DECIMAL	LINEAR	ANGULAR	X.X	±0.5	±0.5°	X.XX	±0.05	±0.05°	X.XXX	±0.005	±0.005°
DECIMAL	LINEAR	ANGULAR																
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PROJECT		ENVIROTECH CP SIGNATURE SERIES																
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CHKD		CKD																
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REV		C		A3		1 OF 1												