



Certificate of Accreditation

Sewage Management Facility

Aerated Wastewater Treatment 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 2021.

System: *Envirocycle Oxyfix AWTS*

Manufacturer: *AWTS Maintenance Services Pty Ltd*

Of: *3 Whealan Close, Heatherbrae, NSW, 2324*

The Envirocycle Oxyfix AWTS 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: *7/11/2022*

Certificate No: *STS-AWTS064*

Expires: *31 December 2027*

NSW Ministry of Health

Accreditation Schedules Envirocycle Oxyfix AWTS (8Ep):

Schedule 1 Description

The Envirocycle Oxyfix AU Chlorine is an aerated wastewater treatment system (AWTS) designed to treat the wastewater from a residential dwelling occupied by a maximum of 8 persons to a secondary treatment standard with nutrient reduction and chlorination disinfection. The system has a total fluid capacity of 7200L which is contained in one concrete vessel manufactured by Allcast Precast P/L - Accreditation STCW014.

Chamber	Capacity
Primary treatment Partition	3519 L Yes 2:1
Secondary treatment Aeration Clarifier Irrigation	1450 L 1013 L 1093 L
Emergency Storage	1000 L
Operational water level Primary Secondary	1980mm 1975mm

The emergency storage capacity is achieved by increasing the operational levels of the primary treatment chamber.

The Envirocycle Oxyfix AWTS has the following components:

- A primary anaerobic separator chamber of 3519L capacity with a 2:1 ratio baffle wall followed by,
- A biological reactor of 1450L capacity. The biological reactor utilises the submerged aerated fixed film (SAFF) process' fitted with three aeration discs and 1.24m³ of Oxybee media. Air is supplied from a RLB80T (or similar) aeration pump producing airflow of nominal 120 litres / minute at 1.3m water depth,
- a control unit with fault warning systems for aeration and discharge pumps with integrated tank mounted warning lamp and dwelling located mutable warning panel.
- a clarification chamber of 1013L to settle out suspended solids.
- suspended solids are returned to the primary chamber inlet by a continuous sludge return system from the clarification chamber.
- flow from the clarification chamber passes through a disinfection / irrigation tank of 1093 L using trichloroisocyanurate as the disinfectant chemical.
- A Reeve model RVS155 submersible irrigation pump (or equivalent) to the application area.

Schedule 2 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AU AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS shall not be permitted.

1.7 Each Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix 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 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 Envirocycle Oxyfix 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 documentation from NSW Health. |
| • Owner's Manual | |

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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.

2.3 The owner / occupier shall not commission the Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS,
 - uses replacement parts which meet the minimum specification of the Envirocycle Oxyfix AWTS,
 - 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 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 Envirocycle Oxyfix AWTS unless they are an authorised agent of the manufacturer.

3.3 The Envirocycle Oxyfix AWTS once installed and commissioned shall be serviced at four (4) monthly intervals.

3.4 The manufacturer / supplier of the Envirocycle Oxyfix AWTS shall place on its web site a copy of the service manual, service sheet or form and specifications for the Envirocycle Oxyfix AWTS 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 Envirocycle Oxyfix AWTS 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

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.

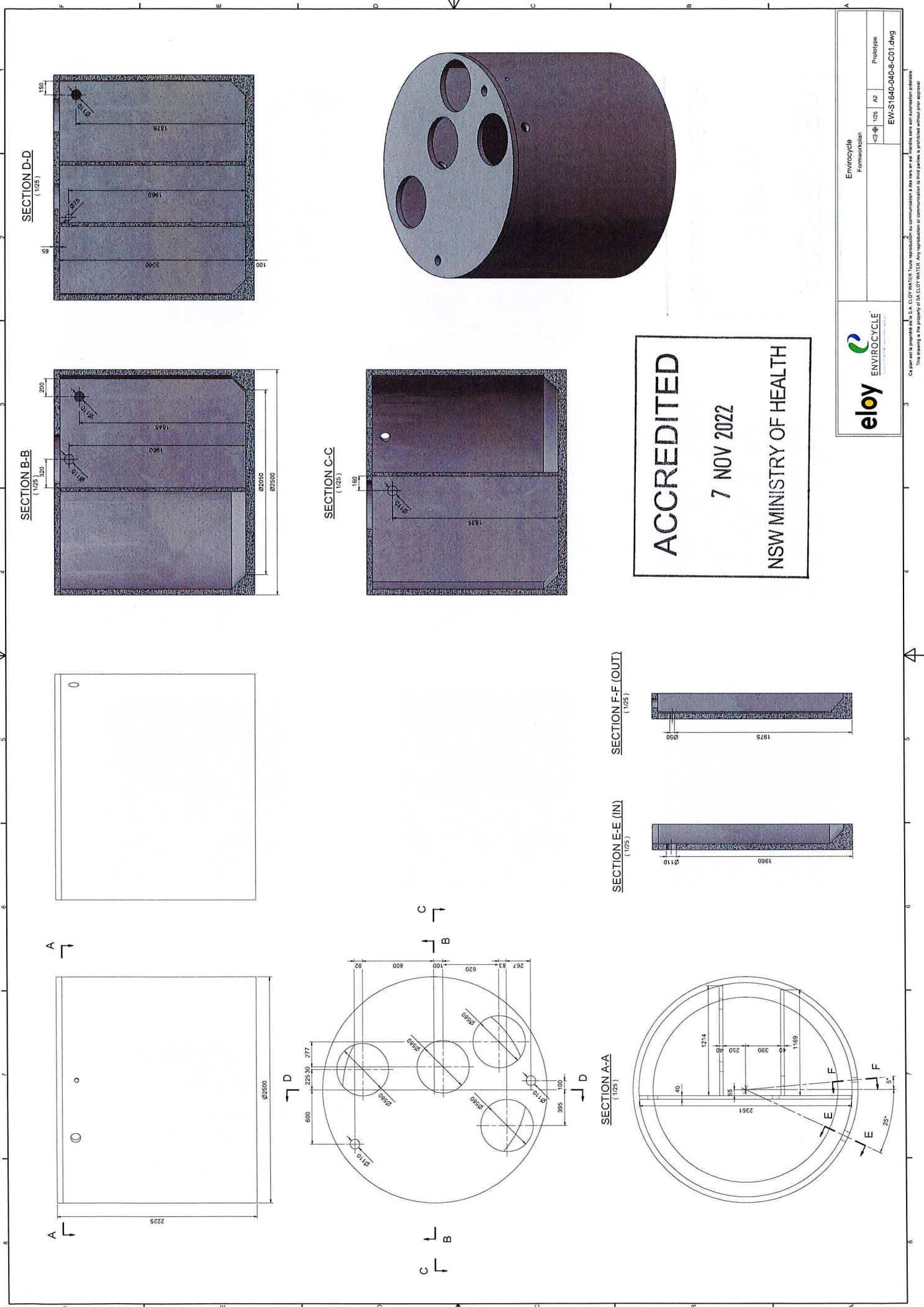
Each of the forms of irrigation or application is subject to the approval of the local authority.

6. Reduction in nutrient levels

A separate testing program of the Envirocycle Oxyfix AWTS for total Nitrogen (TN) and total Phosphorus (TP) reduction was conducted and analyses reported a TN reduction of 36% and a TP reduction of 22%.

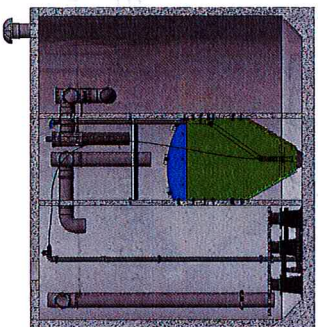
Local Council STS (DGTS) Service Report: February 2018		
Owner's Name:	Local Council:	
Installation Address:		
System Brand & Model:	<input type="checkbox"/> Domestic	<input type="checkbox"/> Commercial
Date of this service: / /	Date of last Service: / /	Next service due: / /
Has the STS/DGTS been serviced 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

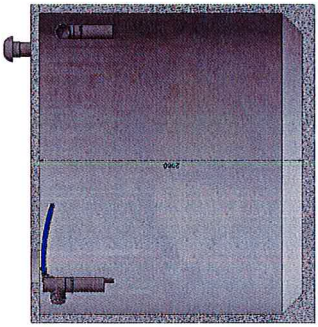


ACCREDITED
 7 NOV 2022
 NSW MINISTRY OF HEALTH

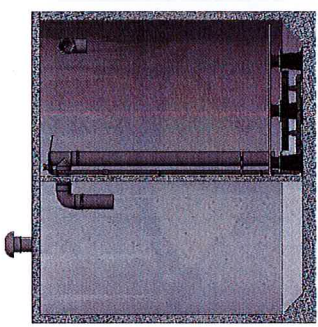
SECTION B-B
 (1/50)



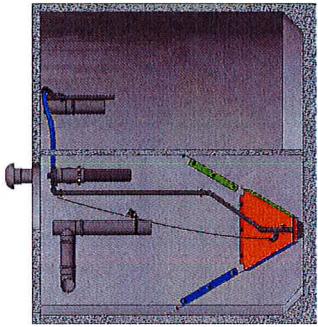
SECTION A-A
 (1/50)



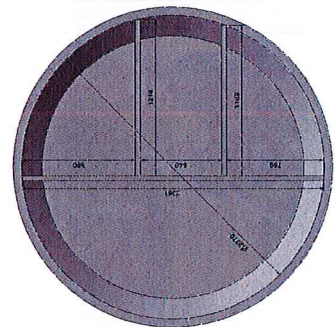
SECTION D-D
 (1/50)



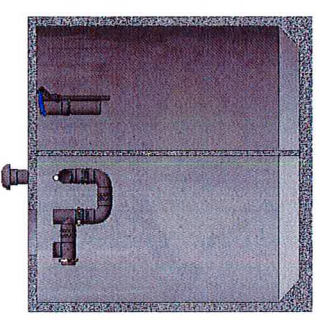
SECTION C-C
 (1/50)



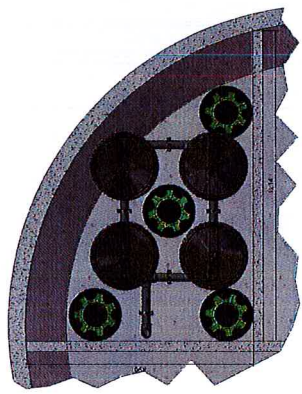
SECTION F-F
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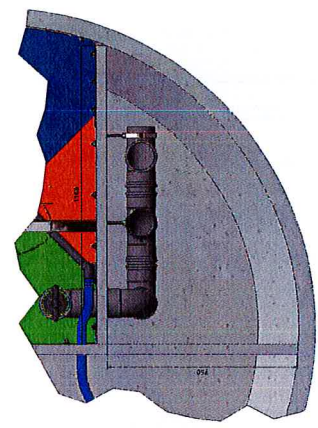
SECTION E-E
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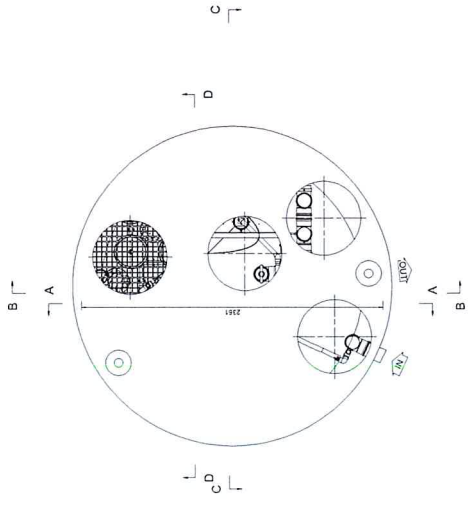
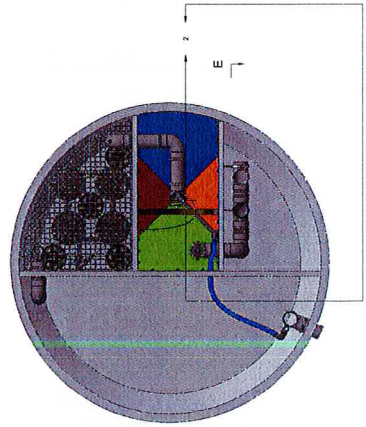
DETAIL 1
 (1/10)



DETAIL 2
 (1/10)



SECTION G-G
 (1/50)



REV	DESCRIPTIONS	DATE	DESIGNER	DRAWN BY	VALIDATED BY
A		25/10/2022			

		Envirocycle STANDARD PRODUCT RANGE (DPP) 800T PAU 8 PPE (NATIONAL 110)	
NSW 100		NSW 100	
EW S1640-800-8-012-010		100	