Approval

1. The WaterBoy Model 10 ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by Magnesium Tech Pty Ltd (ABN 25 098 336 399) ("the manufacturer") has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 15 January 2013.

2. Approval is granted for the advanced secondary quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the Plumbing and Drainage Act 2002, part 5 and the conditions of approval detailed below.

3. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.

4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

Conditions of approval

5. The manufacture, installation, operation, service and maintenance of the systems must be in conformance with the conditions of this Chief Executive Approval.

6. The advanced secondary quality wastewater treatment system with nutrient reduction, which is an example of the approved systems, may only be used on premises that generate per day

   (a) a maximum hydraulic loading of 1,776 litres; and
   
   (b) a maximum organic loading of 700 grams BODs.

7. The system must continue to meet the requirements of advanced secondary quality wastewater treatment system with nutrient reduction, producing the following effluent quality

   (a) 90% of the samples taken must have a BODs less than or equal to 10 g/m³ with no sample greater than 20 g/m³.

   (b) 90% of the samples taken must have total suspended solids less than or equal to 10 g/m³ with no sample greater than 20 g/m³.

   (c) 90% of the samples taken must have a thermotolerant coliform count not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100 mL.
8. Each system must be serviced in accordance with the details supplied in the owner’s service and maintenance manuals.

9. Each system must be supplied with —
   (a) a copy of this Chief Executive Approval document;
   (b) details of the system;
   (c) instructions for authorised persons for its installation;
   (d) a copy of the owner’s manual to be given to the owner at the time of installation; and
   (e) detailed instructions for authorised service personal for its operation and maintenance.

10. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.

11. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails —
    to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.

12. At each anniversary of the Chief Executive Approval date, the supplier must submit to the Chief Executive a list of all systems installed in Queensland during the previous 12 months. Where the Chief Executive is notified of any system failures the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the supplier’s nominated NATA accredited laboratory which systems are to be audited for BODs and TSS. The sampling and testing of the selected systems, if required, is to be done at the supplier’s expense. The following results must be reported to the Chief Executive;

   (a) Address of premises;
   (b) Date inspected and sampled;
   (c) Sample identification number;
   (d) BODs for influent and effluent; and
   (e) TSS for influent and effluent.

13. This approval may only be assigned with the prior written consent of the Chief Executive.

14. This approval expires on 01 July 2020 unless cancelled earlier in accordance with paragraph 11 above.

________________________________________
Lindsay Walker

Director
Plumbing, Drainage and Special Projects
Date approved: 02 July 2015
SCHEDULE

Attachment 1

Specifications for the

WaterBoy Model 10
Schedule 1: Specification

Waterboy HSTP10 Aerated Wastewater Treatment System

General Description

The Waterboy HSTP10 system is designed to treat the wastewater from a residential dwelling occupied by a maximum of 10 persons. The Waterboy HSTP10 system is contained in one cylindrical precast steel reinforced concrete collection well with a capacity of 7,100 litres and manufactured by Taylex Industries Pty Ltd, Ormeau, Queensland.

Two smaller tanks are located inside the collection well. The smaller tanks are labelled as the sludge detention tank and the membrane bio-reactor treatment (MBR) tank. The total operating capacity in the Waterboy HSTP10 system is 4910 litres.

The sludge detention tank has an operating capacity of 1057 litres, measured from the outlet to the membrane tank 200 mm below the top of the tank. A low level of aeration is maintained in the tank, which assist in the treatment and denitrification of the wastewater.

The MBR tank has an operating capacity of 793 litres. The operating liquid level in the tank is 150 mm from the top of the tank. The liquid level will rise and fall 200 mm or 86 litres in volume to maintain a head of liquid above the membrane pack. Aeration is maintained below and between the membrane plates to prevent a build up of sludge on the plate surfaces. The membrane pack consists of a series of flat membrane sheets. The treated effluent is separated from the activated sludge by passing through a fine pore membrane filter (Ultra filtration).

Treated effluent flows from the membrane sheets by way of a chlorine disinfection unit to an external cylindrical pump well which is used as a combined chlorine contact/irrigation pump well. The irrigation pump in the pump well is raised on a stainless steel bracket to provide a permanent storage capacity of 300 litres under the pump. The submersible irrigation pump is fitted with high and low float switches. The treated effluent is pumped to a designated land application system.

Schedule 2: Conditions of Accreditation

1.0 General

1.1 For each installation the Owner/occupier of the premises shall make an application to the Local Authority to install a Waterboy HSTP10 AWTS as a waste management facility in accordance with Section 88, Part C of the Local Government Act 1993 and Clause 26 of the Local Government (General) Regulation 2005.

1.2 The Waterboy HSTP10 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 Waterboy HSTP10 AWTS shall be submitted for separate consideration and variation of the Certificate of Accreditation by the Secretary of the NSW Ministry of Health.

1.4 Each Waterboy HSTP10 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 Waterboy HSTP10 AWTS an owner's manual, which sets out the care, operation, maintenance and on-going management requirements of the system.

Department of Housing and Public Works

Chief Executive Approval

Approval No: 24/2015
Date of Issue: 09/07/15
Delegate Signature:
Building Codes Queensland

27/11/16
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 Waterboy HSTP10 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 Magnesium Tech Pty Ltd or a service contractor or company acceptable to the Council.

3.2 The Waterboy HSTP10 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:
- The chlorinator and replenishment of the disinfectant,
- Pumps, air blower, fan or air venturi,
- The alarm system,
- Slime growth on the filter media,
- Operation of the membrane filter system,
- The effluent irrigation area,

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 Waterboy HSTP10 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 Effluent from the Waterboy HSTP10 AWTS taken in any random grab sample shall comply with the following standard:
- BOD\textsuperscript{5} less than 30 mg/L
- TSS 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
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

6.1 During the testing of the Waterboy HSTP10 AWTS the treated effluent from the Waterboy HSTP10 system was tested for total N and total P concentrations:
- The total N concentration in all of the samples tested was < 20 mg/l with the highest result of 11.7 mg/l and an average of 6.0 mg/l. This represents an 87% reduction in the total N concentration in the final effluent;
- The total P concentration in all of the samples tested was < 10 mg/l with the highest result of 4.66 mg/l and an average of 1.33 mg/l. This represents an 89% reduction in the total P concentration in the final effluent.

---

Department of Housing and Public Works
Chief Executive Approval

Approval No: 241 2013
Date of Issue: 02.11.2015
Delegated Signature: Building Codes Queensland

---
CHIEF EXECUTIVE APPROVAL No. 24/2015
Plumbing and Drainage Act 2002, part 5, division 1, section 93

SCHEDULE

Attachment 2

Drawings for the

WaterBoy Model 10