

TREATMENT PLANT APPROVAL 10/2020

Plumbing and Drainage Act 2018

Approval

1. The **Aqua-Nova model 80203Z** (“the system”) described in the Specifications and Drawings in the attached Schedule and manufactured by **Everhard Industries Pty Ltd** (ABN 41 009 690 859) (“the manufacturer”) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 October 2017.
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 Regulation 2018*, and the conditions of approval detailed below.
3. This approval, the conditions of approval and the Schedule comprise the entire Treatment Plant 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 conformity with the conditions of this Treatment Plant Approval.
6. The advanced secondary quality wastewater treatment system, which is an example of the approved systems, may only be used on premises that generate per day:
 - (a) a maximum hydraulic loading of 2,250 litres; and
 - (b) a maximum organic loading of 700grams BOD⁵
7. The system must continue to meet the requirements of advanced secondary quality wastewater treatment system, producing the following effluent quality:
 - (a) 90% of the samples taken must have a BOD⁵ less than or equal to 10 g/m³ with no sample greater than 20g/m³.
 - (b) 90% of the samples taken must have total suspended solids less than or equal to 10g/m³ with no sample greater than 20g/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.
 - (d) Total chlorine concentration must be between 0.5g/m³ and 2.0 g/m³ in four out of five samples taken.
8. Each system must be serviced in accordance with the details supplied in the owner’s operation and maintenance manual.
9. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.

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Department of Housing & Public Works

10. Each system must be supplied with —

- (a) a copy of this Treatment Plant 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.

11. At each anniversary of the Treatment Plant 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 BOD⁵ 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) BOD⁵ for influent and effluent; and
- e) TSS for influent and effluent.

12. The Chief Executive may, by written notice, cancel this approval if the manufacturer/supplier fails —

- a) to comply with one or more of the conditions of approval; or
- b) within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.

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

14. This approval expires on 01 January 2024 unless cancelled earlier in accordance with paragraph 12 above.

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Lindsay Walker

**Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy**

Date approved: 19 June 2020

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TREATMENT PLANT APPROVAL No. 10/2020
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SCHEDULE

Attachment 1

Drawings and Specifications for the

Aqua-Nova model 80203Z

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Schedule 1: Specification

Aqua-Nova (80203Z) Aerated Wastewater Treatment System

The Aqua-Nova (80203Z) Aerated Wastewater Treatment System (AWTS) is designed to treat the wastewater from a residential dwelling occupied by a maximum of 15 persons (2250L/day) to an Advanced Secondary Standard

BOD ₅	<	10mg/L
TSS	<	10mg/L
Thermotolerant Coliforms	<	10cfu/100mL
Total Chlorine Concentration	greater or equal to	0.5g/m ³ less than 2.0g/m ³

The Aqua-Nova (80203Z) is contained in injection moulded 4000L polypropylene septic tanks and collection wells each with design capacities as set out below.

Operation

The Aqua-nova treatment plant is a two tank system.

Wastewater flows into the first tank (Primary Tank). This tank acts as a septic tank removing most solids and fats/oils. Solids retained in this tank are digested anaerobically.

Water from this tank flows to a second tank. This tank is aerated and fitted with submerged media. Aerobic bacteria grow on the media to biodegrade the remaining contaminants in the wastewater. Bacteria occasionally slough off the media and become suspended in the water.

Aeration is continuous.

Water then flows to a clarifier where the solids are allowed to settle. These solids are pumped back to the start of the treatment plant.

Clarified wastewater is chlorinated and pumped through a Granular Media Filter prior to irrigation.

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Configuration

The Aqua-Nova AWTS is assembled in the following configuration:

Design capacities	polymer 2 x 4000lt
primary sedimentation	4175 lt
secondary treatment <ul style="list-style-type: none">• aeration chamber• sedimentation• irrigation	3340 lt 430 lt 393 lt
emergency storage	1052 lt
operational water level <ul style="list-style-type: none">• primary• secondary	(mm) 1770 1730

- A chlorine disinfection unit is installed on the outlet of the clarifying chamber.
- Air is supplied to the contact aeration chamber by a Nitto LA120 air blower or equivalent, producing an airflow of a nominal 120 litres/minute at 1.3 m water depth.

A Davey model D-25A submersible irrigation pump or equivalent is installed in the irrigation chamber for standard above ground irrigation. Type of pump may vary if subsurface irrigation is employed or the disposal area is significantly above the location of the sewage treatment plant.

- Label will be located on the Control Box of the system and have the following information provided
 - System Name
 - Model No.
 - Approval Number
 - Design Hydraulic Capacity
 - Date of Manufacture
 - Top Load Limitations
 - Weight of Tank
 - Lifting/Transport Instruction
 - The name and telephone number of an appropriate service representative to be contacted in the event that a problem with the plant occurs.
 - The website from which the documentation can be downloaded during the design life.

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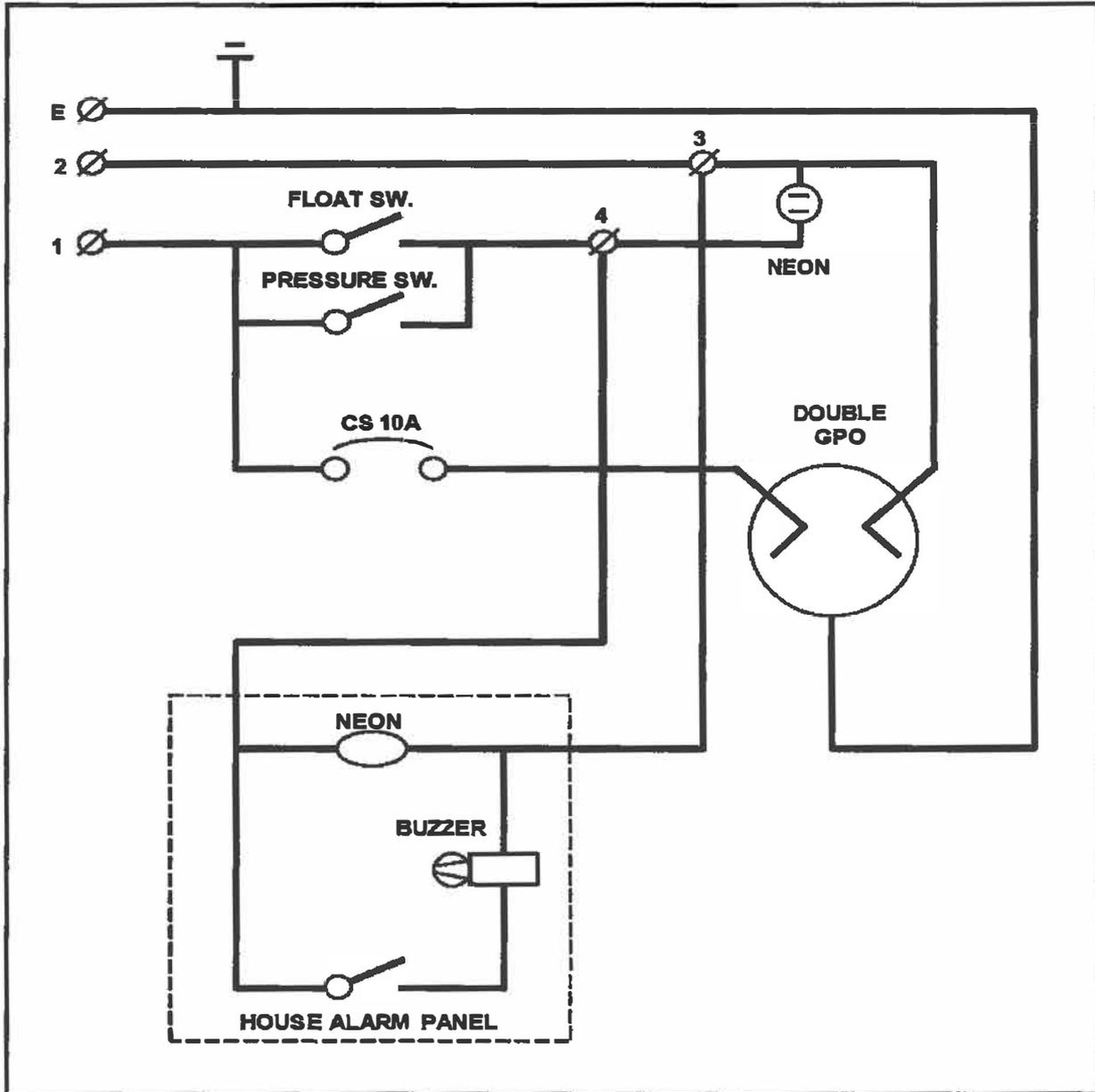
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AQUA NOVA ELECTRICAL DIAGRAM



TERMINAL 1 - SUPPLY ACTIVE
 TERMINAL 2 - SUPPLY NEUTRAL
 TERMINAL 3 - HOUSE PANEL NEUTRAL
 TERMINAL 4 - HOUSE PANEL ACTIVE

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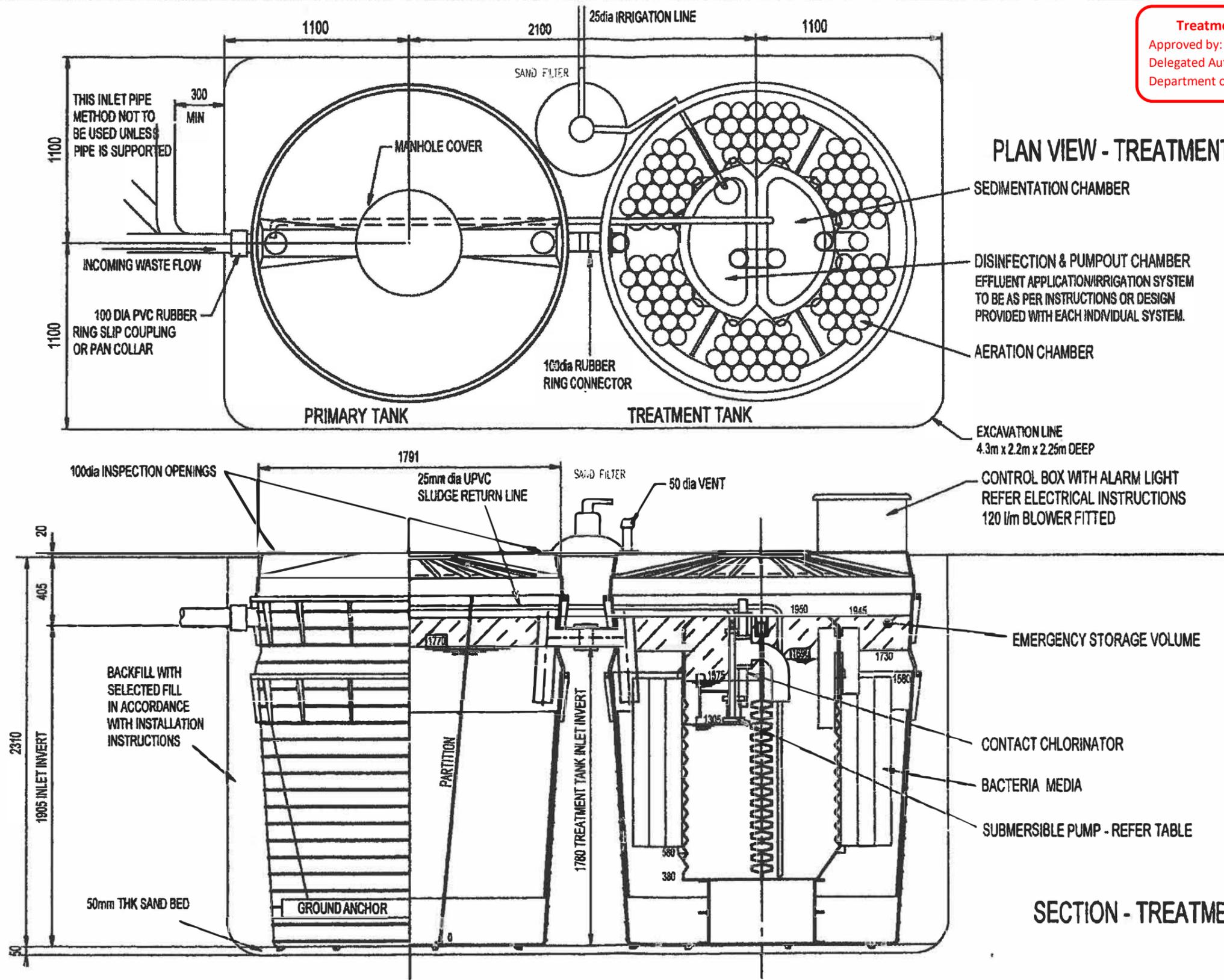


Date : 22/04/2013

Review : 22/04/2018

TANK INSTALLATION AND PLUMBING TO BE IN ACCORDANCE WITH PLUMBING INSTRUCTIONS PROVIDED WITH SYSTEM.

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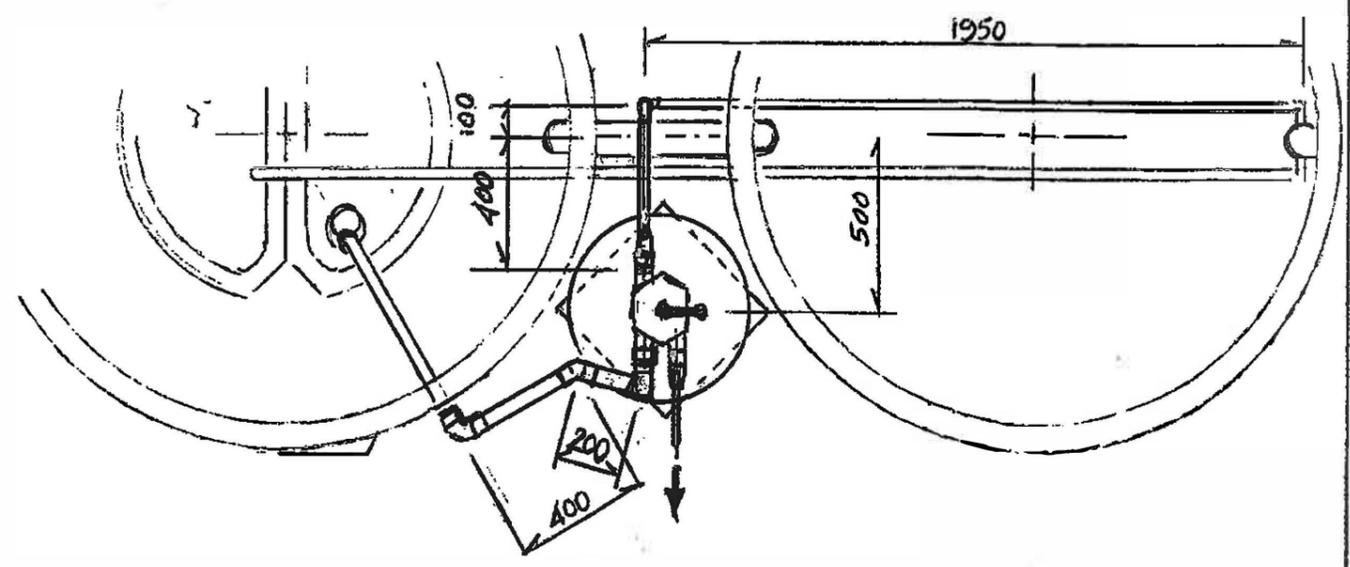
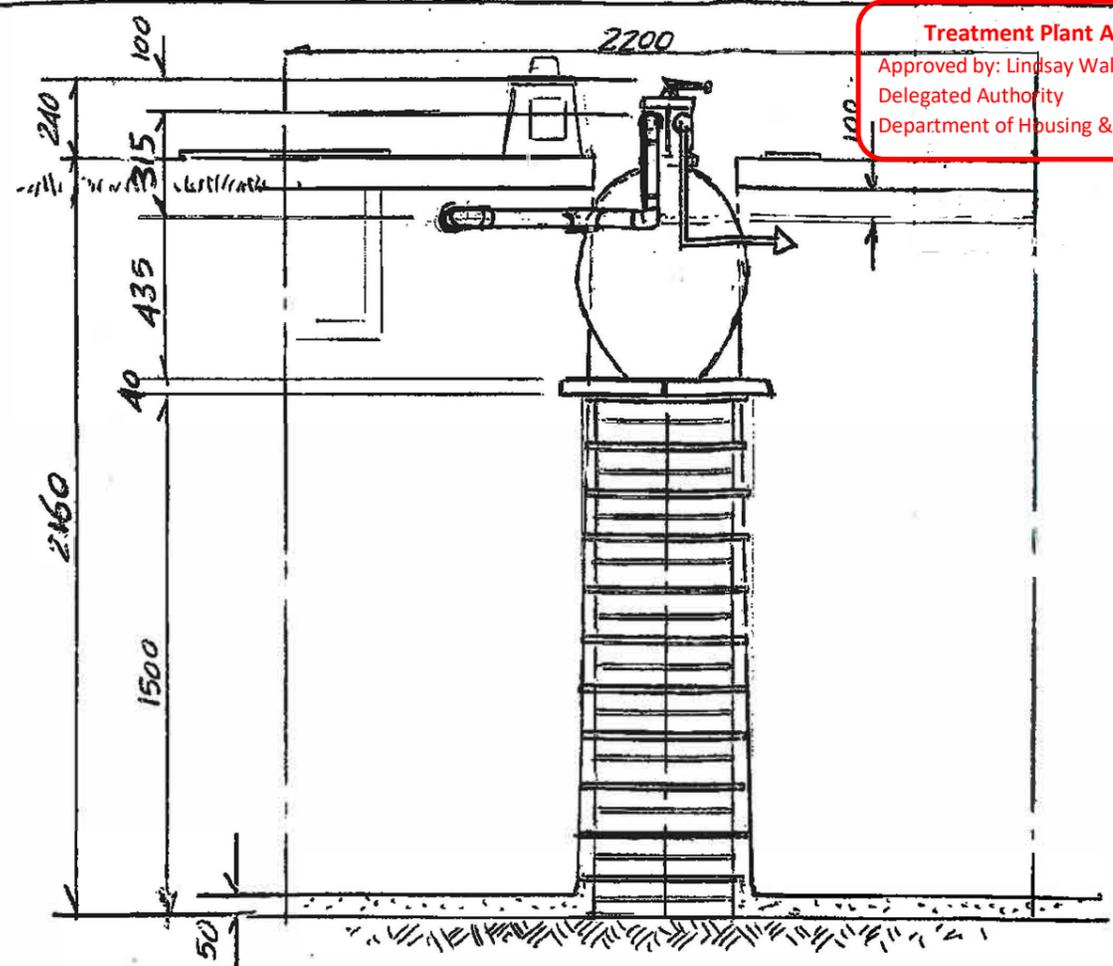
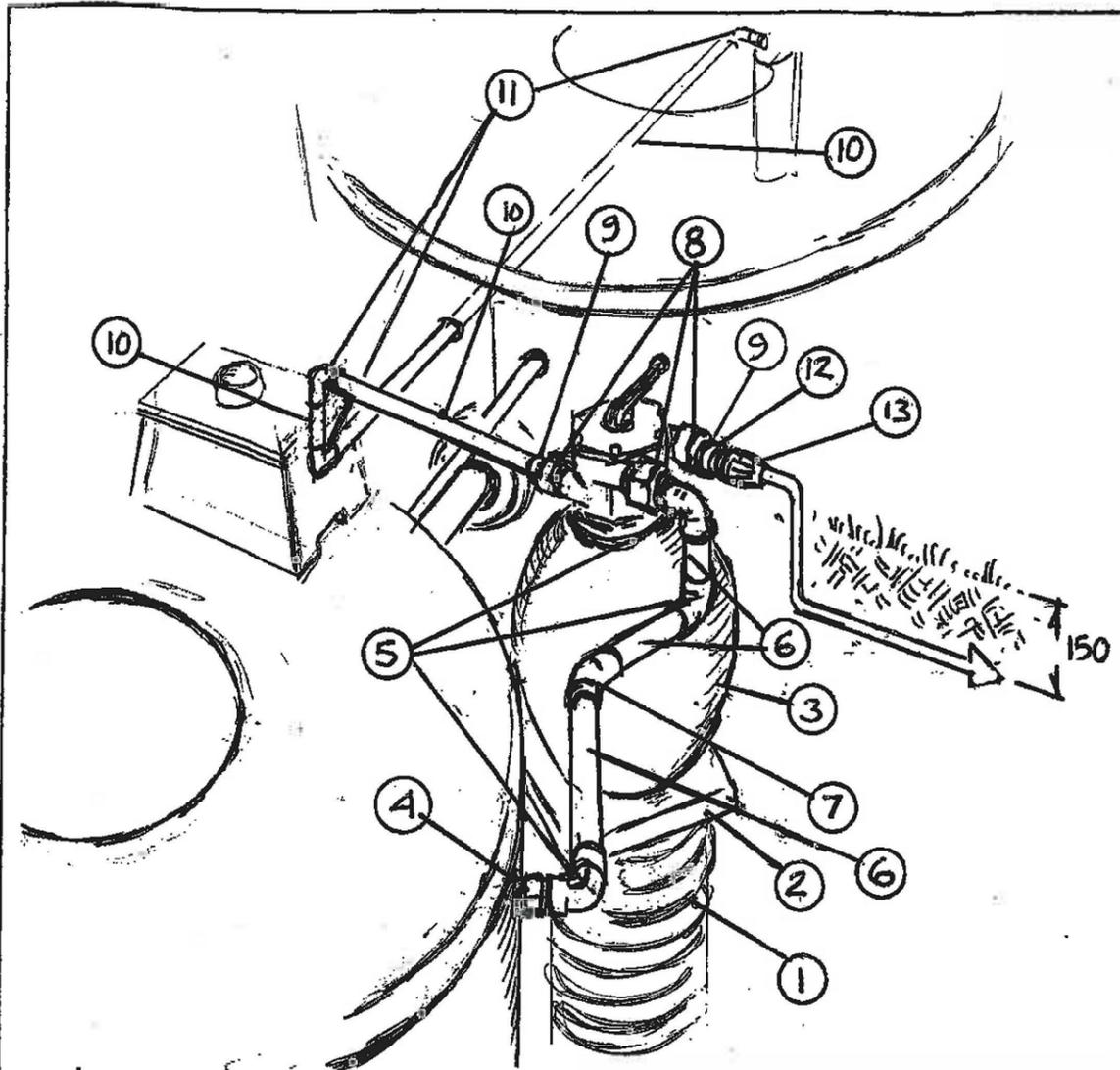
PLAN VIEW - TREATMENT SYSTEM

SECTION - TREATMENT SYSTEM

PRODUCT CODE No.	DETAILS / DESCRIPTION
80203Z	DAVEY 25 PUMP FITTED
80203CZ	CLAYTONS BLUE DIVER 30 PUMP FITTED
80203DZ	DAVEY 42 PUMP FITTED

AMMENDMENT 1		MODEL NO. ADDED TO TITLEBLOCK		BJD	6/5/10
BROWN	DATE	APPROVED FOR MANUFACTURE	MATERIAL	MASS	SCALE
BJD	10/9/07				1:25
TITLE			EVERHARD INDUSTRIES PTY LTD		405 NEWMAN ROAD, GEEBUNG, QLD, 4034
AQUANOVA - 80203Z - POLYMER TANK					PH: 1 07 1 3637 6444
ADVANCED SECONDARY TREATMENT SYSTEM - 2 x 4000 LITRE TANKS			DRAWING NUMBER		REVISION
			MP - 6639		1
					DATE
					6/5/10

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 Queensland Government



13	1" BSP M X 25 TUBE UNION	1	POLY - SUPPLIED WITH TANK KIT
12	25 SLIP X 1" BSP F ADAPTOR	1	UPVC
11	25mm SLIP 90° ELBOW	3	UPVC
10	25mm PIPE X 2500	1	420 + 260 + 1500 + 100
9	40 X 25 SLIP/SLIP REDUCER	2	UPVC
8	40 BSP M X 40 SLIP UNION	3	SUPPLIED WITH FILTER - ITEM 3
7	40mm SLIP 45° ELBOW	1	UPVC
6	40mm UPVC PIPE X 900	1	50 + 350 + 150 + 260 + 50
5	40mm SLIP 90° ELBOW	3	UPVC
4	1" BSP M X 40 SLIP TAKE-OFF ADAPTOR	1	UPVC
3	DAVEY SF180 SAND FILTER	1	COMPLETE KIT
2	450 PLAIN CONCRETE SLAB	1	
1	375 RIBSTRUCT PIPE X 1500	1	'U' GROUND GRADE POLYMER
ITEM	DESCRIPTION	QTY	REMARKS

EVERHARD INDUSTRIES PTY. LTD. IS AND ALWAYS SHALL BE, THE SOLE OWNER OF THIS DRAWING. NO DATA HEREIN MAY BE COPIED BY ANY MEANS, NOR ANY DEPICTED ITEM MADE, WITHOUT PRIOR APPROVAL IN WRITING FROM THE MANAGEMENT.

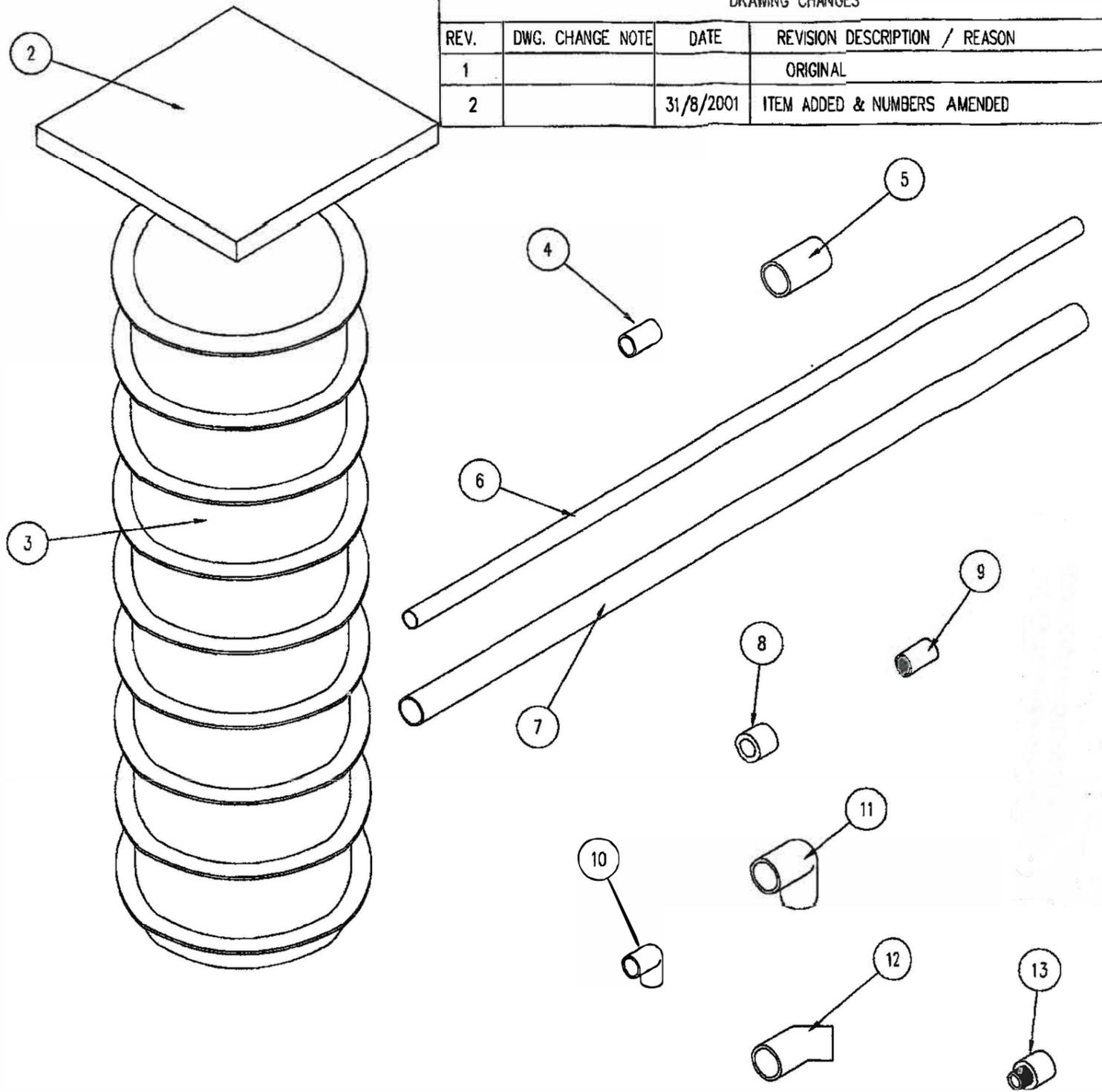
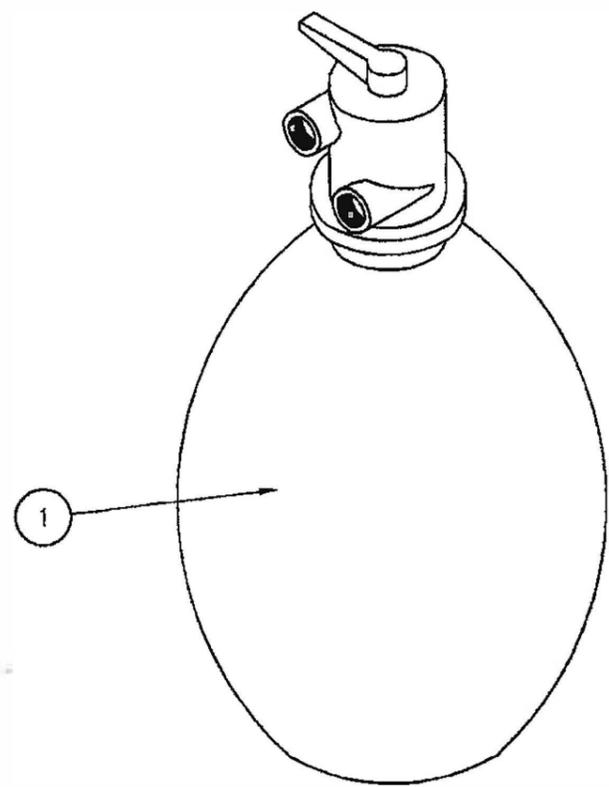
FIRST APPROVED FOR MANUFACTURE
 ISSUE REVISION:
 DATE:
 APP'D BY:

EVERHARD INDUSTRIES PTY. LTD
 PLASTICS & PRECAST CONCRETE
 OLD CONCRETE AQUA-NOVA SYSTEM SAND FILTER LAYOUT.
 FILE: SCALE: DRG. NO.
 DRAWN: DATE: 29/8/2001 RF 3464

ITEM	QUANTITY	PART No.	DESCRIPTION	SIZE	GRADE	MASS
1	1	95371	DAVEY SAND FILTER SF180 - COMPLETE KIT	SF180		
2	1	42512	PLAIN PAVING SLAB	450sqm x 38		19.54
3	1	86720	375mm RIBSTRUCT FLAT FLANGE 1 END	1.2m	U/GROUND	9.6
4	2	90952	PVC SLIP-SLIP COUPLING	25mm		
5	1	90730	PVC SLIP-SLIP COUPLING	40mm		
6	2	90742	25mm PVC PIPE	1.5m	CLASS 12	
7	2	90743	40mm PVC PIPE	1.5m	CLASS 12	
8	2	90532	PVC REDUCING BUSH	40/25		
9	1	90720	FEMALE ADAPTOR 25 SLIP/1" BSP		CAT 18	
10	3	90719	PVC ELBOW SLIP-SLIP	25mm		
11	2	90728	PVC ELBOW SLIP-SLIP	40mm		
12	1	90729	PVC 45° SLIP - SLIP BEND	40mm		
13	1		PVC TAKE-OFF ADAPTOR PIPE x BSPM	40 x 1"		

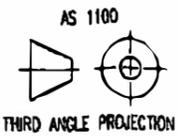
DRAWING CHANGES			
REV.	DWG. CHANGE NOTE	DATE	REVISION DESCRIPTION / REASON
1			ORIGINAL
2		31/8/2001	ITEM ADDED & NUMBERS AMENDED

MANUFACTURING OPERATIONS	
Tolerance [Except where otherwise stated] Over Up to Tolerance	
ANGULAR TOLERANCE (U.N.O.)	
BEND RADIUS	
CORNERS AND FILLETS	
MARK PART No IN REGION MARKED	
ALL DIMENSIONS TO BE MET AFTER PLATING REMOVE ALL BURRS BREAK ALL SHARP EDGES 0.4mm-0.8mm	
SURFACE ROUGHNESS INCLUDING REAMED HOLES	N8 ✓
SURFACE ROUGHNESS FOR DRILLED HOLES U.N.O.	N8 ✓
WELDING	



MATERIAL	DIMENSIONS IN mm U.N.O.
MATERIAL AS LISTED	APPROVAL STAMP
TREATMENT	

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DRAWN	BJD
DATE	27/8/2001
SCALE	NTS
CHECKED	
APPROVED	

Client EVERHARD INDUSTRIES PTY LTD			
Title SAND FILTER INSTALLATION KIT FOR AQUANOVA QLD POLYMER TREATMENT SYSTEM PART No. 60008			
Weight	Arm	Drawing Number	Revision
		MP - 3452 3495	2