

Tasmanian Plumbing Code 1994

PART C2 - SYSTEM ACCREDITATION REPORT

No. BSR0443/2003

TYPE OF SYSTEM:	Hybrid Toilet System with Holding Tank (Displacement)
TITLE:	Gough Plastics HTS with Holding Tank. Models include: 6P Single Pedestal; 10P Single Pedestal; 25P Single Pedestal; 25P Double Pedestal; 50P Double Pedestal; 75P Three Pedestal; 100P Four Pedestal; and 150P Six Pedestal. (P=Person)
APPLICANT:	Gough Industries Pty Ltd 833 Ingham Road, TOWNSVILLE QLD 4818
MANUFACTURER:	Gough Industries Pty Ltd 833 Ingham Road, TOWNSVILLE QLD 4818
SYSTEM DESCRIPTION:	The Hybrid toilet is a non-flushing displacement toilet. The system consists of a pedestal drop toilet that feeds deposited waste into a primary tank filled with water. When the system is used effluent is displaced and flows from the primary tank and drains to the secondary tank which then flows to a Holding Tank for collection and disposal off-site. The primary tank receives undiluted waste and its function is to separate solids and digest the waste. The liquid retention time in the primary tank varies between 45-128 days depending on the model installed. The primary tank retains sludge for approx 4 – 7 years, until pumped out. The secondary tank is filled with a media that further treats the effluent to a secondary quality before its released to the Holding Tank. The secondary tank also contains baffles, which facilitates upward and downward flow of the effluent causing it to come into contact with anaerobic and aerobic zones within the system. Liquid retention time in the secondary tank varies between 25-27 days, which is also dependant on the model installed.
SPECIFICATION:	The Systems are designed to treat a total daily toilet-only discharge from 6 EP; 10 EP; 25 EP; 50 EP; 75 EP; 100 EP & 150 EP respectively. (EP means "Equivalent Persons")
SUPPORTING DOCUMENTS:	<ol style="list-style-type: none"> 1. Detailed summary description by Michael ten Lohuis (Ph.D., BscHons, MASM) 2. Owners manual version one, dated July 2003 3. Test Certificates/Evaluations to AS/NZS 1546.1 – 1998 prepared by H.M.E. Consulting Engineers Pty. Ltd. 4. Copies of approvals/accreditations granted by QLD, S.A, W.A, N.T, Vic., N.S.W & Tas. 5. NATA laboratory test results prepared by EnviroCheck Enterprises and various other laboratory services 6. Systems environmental performance summary 7. Assembly drawings and system layouts 8. Flow diagram 9. Assembly and Waste Management Instructions issued for each system
SCHEDULE/S	Schedule 1 Conditions of Accreditation Schedule 2A & 2B Drawing of a Typical Holding Tank and Holding Tank Level Indicator
NOTES:	Installations of the Hybrid Toilet Systems with Holding Tank are restricted to parks, reserves and the like under the jurisdiction of government agencies or public authorities.

SCHEDULE 1

CONDITIONS OF ACCREDITATION FOR GOUGH PLASTICS HYBRID TOILET WITH HOLDING TANK MODELS: 6P SINGLE PEDESTAL; 10P SINGLE PEDESTAL; 25P SINGLE PEDESTAL; 25P DOUBLE PEDESTAL; 50P DOUBLE PEDESTAL; 75P THREE PEDESTAL; 100P FOUR PEDESTAL; AND 150P SIX PEDESTAL.

Definitions

In this schedule:

AS/NZS 1547 means the Joint Australian/New Zealand Standard “AS/NZS 1547:2000 On-site domestic-wastewater management”;

AS/NZS 1546.1 means the Joint Australian/New Zealand Standard “AS/NZS 1546.1:1998 On-site domestic wastewater treatment units, Part 1: Septic tanks”;

AS/NZS 3000 means the Joint Australian/New Zealand Standard “AS/NZS 3000:2000 Wiring rules”;

AS/NZS 5667 means the Joint Australian/New Zealand Standard “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”;

BOD₅ 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 AWTS have been met and all pre-commissioning tests have been carried out in accordance with AS/NZS 1547 on all associated equipment and the irrigation system where installed”;

DIER means “the Department of Infrastructure, Energy and Resources”;

DESIGNER means “a person who has a expertise in the area of designing on-site waste water management systems and may include but not be restricted to appropriately trained professional engineers, soil scientists, land surveyors and plumbers”;

EP means “Equivalent persons”;

NATA means “National Association of Testing Authorities”;

O & M means "operation and maintenance";

P means “Phosphorus”;

Permit means “a Permit issued by the council pursuant to the Tasmanian Plumbing Regulations”;

SS means “Suspended Solids”;

N means “Nitrogen”;

TPC means the “Tasmanian Plumbing Code”.

CONDITIONS OF ACCREDITATION

1. General

The installation and operation of the 6 EP Single Pedestal, 10 EP Single Pedestal, 25 EP Single Pedestal, 25 EP Double Pedestal, 50 EP Double Pedestal, 100 EP Four Pedestal, 150 EP Six Pedestal, must comply with the following conditions.

- 1.1. This accreditation limits the installation and use of the Hybrid Toilet Systems with Holding Tanks to locations such as parks, reserves and the like which are under the jurisdiction of government agencies or public authorities provided:
 - conventional disposal methods cannot be adopted or are not suitable (for example, where rock layer or groundwater levels are near the surface or seasonal usage or zero discharge to the environment is specified by the authority having jurisdiction) and there is no sewer system; and
 - there are appropriate management regimes put in place to manage the installations by the authority having jurisdiction.
- 1.2. The systems must be manufactured, supplied, constructed, installed, operated and maintained in accordance with the manufacturers 'Assembly and Installation Instructions' and the 'Waste Management Instructions' and drawings (as detailed in Appendix 3) which formed part of the supporting documentation submitted to DIER for accreditation of the system.
- 1.3. The system(s) must not be installed in a plumbing installation other than in accordance with the conditions of Permit issued by the council.
- 1.4. The manufacturer must supply the owner/occupier, of each installation, with the owners manual referred to in the attached report which sets out the care, operation and maintenance requirements of the system installed.
- 1.5. All plumbing work installed in connection with the installed system must satisfy the requirements of the Tasmanian Plumbing Code and Tasmanian Plumbing Regulations, and be carried out by a registered plumber with appropriate qualifications.
- 1.6. Any proposed modifications to the Hybrid System's specified processes, equipment, materials, fittings or manuals must be authorised by DIER and may be subject to additional verification and/or testing.
- 1.7. The Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the Minister.
- 1.8. Where any of the Hybrid Toilet System models have been found not to operate satisfactorily during their service life, and as a result require modification/s to achieve the required water quality limits, the installed systems are to be modified accordingly.
- 1.9. Each tank must be provided with a permanent, clear indelible notice in a prominent position that is readily visible after installation. The notice is to include, as a minimum, the following information:
 - the manufacturer's name or registered mark;
 - model number or designation;
 - the month and year of manufacture;

- the capacity in litres/week;
 - top load limitations; and
 - weight of unit.
- 1.10. All tanks used in the Hybrid Toilet with Holding Tank Systems must be selected from the range of tanks (detailed in the table below) verified as complying with AS/NZS 1546.1-1998 by H.M.E. Consulting Engineers Pty. Ltd and be manufactured without an outlet.

Range of tanks authorised for use in Hybrid Toilet Systems with Holding Tank		
Number of persons	Type	Capacity - Litres
5 & 10	PST	1000
10	SST	600
25	PST	2500
25	SST	1000
50	PST	2500 & 5500
100 & 150	PST & SST	5500

PST = Primary Septic tank SST = Secondary Septic Tank

- 1.11. Each installation must be inspected and checked by the designer or the designer's agent. The designer on completion is to certify that the installation has been constructed/installed and commissioned in accordance with the manufacturers design and installation requirements, the conditions of accreditation and any additional requirements of the council.

2. Holding Tanks

- 2.1. Holding Tanks must be sized to allow at least seven days storage of the design daily loading. Sizing must take into consideration higher minimum capacities to allow for peak flows from higher loadings from visitors such as tourist parties, buses and alike.
- 2.2. Where a graduated dipstick (level indicator) is used to determine the levels within the Holding Tank the highest graduation is to indicate when the Holding Tank is full.
- 2.3. Subject to condition 2.7, each Holding Tank must be equipped with a permanently installed high level alarm system.
- 2.4. The alarm system must comprise audible and visible alarms with muting facility for audible alarm.
- 2.5. The muting facility must reset to audible after 24 hours.
- 2.6. The alarm is to be located in a readily visible position or as required by the council.
- 2.7. Where mains power or an alternate power source is not available or practicable or cost prohibitive, a Gough Plastics Level Indicator is to be installed (see Schedule 2B) provided the system is monitored daily or as required by the council.

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

3. Commissioning, Maintenance, Monitoring and Reporting

- 3.1. Each installation must be monitored and maintained at not less than weekly intervals in accordance with the conditions of accreditation, the conditions of permit and manufacturers requirements, by council-approved personnel.
- 3.2. The systems must be operated and maintained to ensure they perform continuously and without any intervention between inspections carried out by a council-approved servicing personnel at a frequency nominated by the manufacturer.
- 3.3. Only persons with a Waste Transport Business Environment Protection Notice issued by DPIWE are to be engaged for the removal, transporting and disposal of septic waste from the system.
- 3.4. Pumpout contractors should ensure that all field personnel have undertaken an appropriate training programme.
- 3.5. The system is to be desludged strictly in accordance with the manufacturers recommendations.
- 3.6. Full records are to be kept of desludging and pumpout operations and that notification is provided of unusual circumstances and/or wastewater treatment unit defects discovered during servicing to the owner/occupier and with the council.
- 3.7. Record sheets are to be designed with space for pump-out contractor's and responsible field personnel's detail's, notes and dates of maintenance events such as sludge/scum depths, pump-outs, other inspections, stoppages, faults, and any remedial actions taken.
- 3.8. All record sheets are to be retained for at least 10 years from their date(s) of issue.
- 3.9. Scum/sludge and all septage material taken from the site during desludging/pumpout are to be disposed of and/or utilized by an approved facility or agency.
- 3.10. Measures are to be put in place during desludging/pumpout that will protect the environment, staff and any other persons who could be affected by the activity.
- 3.11. Prior to the issue of a Permit the sites that the systems are to be deployed must be verified as being suitable and accessible for the collection of effluent by the removal vehicle/tanker.
- 3.12. Operation and maintenance requirements are to include checking the alarm function and/or float level indicator, where installed, and the cleaning of the activation float(s).
- 3.13. Copies of any report or certificate are to be made available to DIER on request.

SCHEDULE 2A – HOLDING TANK



Typical Gough Plastics Holding Tank with Level Indicator installed

SCHEDULE 2B – HOLDING TANK LEVEL INDICATOR



Gough Plastics Holding Tank Level Indicator

SCHEDULE 3 – TABLE OF DRAWINGS

DRAWING NO.	REV NO.	DESCRIPTION.
GTL-0000-10	E	Generic Concrete Hold Down Details
GTL-0000-11	C	Generic Duckbill Anchor Point Details
GTL-0000-12	A	Dropper Tube & Pedestal Details
GTL-0000-13		Generic Tank Hold Down Slab Design
GTL-0000-14	A	Paper Dampener Section & Details
GTL-0000-15	B	Generic Layout 4 Pedestal Paper Dampener
GTL-0000-16		Microflush Foot Pump Cover Plate
GTL-0000-17		Microflush Inline Assembly Drawing
GTL-0000-18		Microflush General Arrangement
GTL-0000-19		Microflush Foot Pump Inline Assembly
GTL-0000-22	A	Microflush Hand Pump Inline Assembly
GTL-0000-25		Microflush Hand Pump General Arrangement
HTS907.0014.1-05		Microflush installation floor plan layout
HTS907.0009-05		Paper Dampener Retro Kit
PARHTS1053-01	C	Heavy duty hand pump mounting bracket
		6 PERSON
HTS901.0001.1-05		6 Person nonflush (200lt holding tank) Assembled product pictorial view
HTS901.0001.1-06		6 Person microflush (200lt holding tank) Assembled product pictorial view
HTS901.0001.1-10		6 Person nonflush (200lt Holding Tank) General arrangement
HTS901.0001.1-11		6 Person microflush (600lt Holding Tank) General arrangement
		10 PERSON
HTS900.0002.1-05		10 Person nonflush (600lt holding tank) assembled product pictorial view
HTS900.0002.1-06		10 Person microflush (1000lt holding tank) assembled product pictorial view
HTS900.0002-09		10 Person paperdampener (600lt holding tank) assembled product pictorial view
HTS900.0002.1-10		10 Person nonflush (600lt holding tank) general arrangement
HTS900.0002.1-11		10 Person microflush (1000lt holding tank) general arrangement
		25 PERSON SINGLE
HTS902.0001-06	A	25 Person nonflush (2500lt holding tank) assembled product pictorial view
HTS902.0001-08		25 Person microflush (2500lt holding tank) assembled product pictorial view
HTS902.0001-09		25 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS902.0001-11	A	25 Person nonflush (2500lt holding tank) general arrangement
HTS902.0001-13		25 Person microflush (2500lt holding tank) general arrangement
HTS902.0001-14		25 Person nonflush (5500lt holding tank) general arrangement
		25 PERSON DOUBLE
HTS902.0001.1-06	A	25 Person nonflush (2500lt holding tank) assembled product pictorial view
HTS902.0001.1-08		25 Person microflush (2500lt holding tank) assembled product pictorial view
HTS902.0001.1-11	A	25 Person nonflush (2500lt holding tank) general arrangement
HTS902.0001.1-13		25 Person microflush (2500lt holding tank) general arrangement

SCHEDULE 3 – TABLE OF DRAWINGS Cont'd

DRAWING NO.	REV NO.	DESCRIPTION.
		50 PERSON
HTS903.0001-06	A	50 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS903.0001-08		50 Person microflush (5500lt holding tank) assembled product pictorial view
HTS903.0001-11	A	50 Person nonflush (5500lt holding tank) general arrangement
HTS903.0001-13		50 Person microflush (5500lt holding tank) general arrangement
HTS903.0001-14		50 Person nonflush (2500lt holding tank) general arrangement
		75 PERSON
HTS904.0002-06	A	75 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS904.0002-08		75 Person microflush (5500lt holding tank) assembled product pictorial view
HTS904.0002-11	B	75 Person microflush (5500lt holding tank) general arrangement
HTS904.0002-13		75 Person microflush (5500lt holding tank) general arrangement
		100 PERSON
HTS904.0001-06		100 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS904.0001-08		100 Person microflush (5500lt holding tank) assembled product pictorial view
HTS904.0001-11	A	100 Person nonflush (5500lt holding tank) general arrangement
HTS904.0001-13		100 Person microflush (5500lt holding tank) general arrangement
		150 PERSON
HTS905.0001-06		150 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS905.0001-08		150 Person microflush (5500lt holding tank) assembled product pictorial view
HTS905.0001-11	A	150 Person nonflush (5500lt holding tank) general arrangement
HTS905.0001-13		150 Person microflush (5500lt holding tank) general arrangement
		6 PERSON
HTS901.0001.1-05		6 Person nonflush (200lt holding tank) Assembled product pictorial view
HTS901.0001.1-06		6 Person microflush (200lt holding tank) Assembled product pictorial view
HTS901.0001.1-10		6 Person nonflush (200lt Holding Tank) General arrangement
HTS901.0001.1-11		6 Person microflush (600lt Holding Tank) General arrangement
		10 PERSON
HTS900.0002.1-05		10 Person nonflush (600lt holding tank) assembled product pictorial view
HTS900.0002.1-06		10 Person microflush (1000lt holding tank) assembled product pictorial view
HTS900.0002-09		10 Person paperdampener (600lt holding tank) assembled product pictorial view
HTS900.0002.1-10		10 Person nonflush (600lt holding tank) general arrangement
HTS900.0002.1-11		10 Person microflush (1000lt holding tank) general arrangement

SCHEDULE 3 – TABLE OF DRAWINGS Cont'd

DRAWING NO.	REV NO.	DESCRIPTION.
		25 PERSON SINGLE
HTS902.0001-06	A	25 Person nonflush (2500lt holding tank) assembled product pictorial view
HTS902.0001-08		25 Person microflush (2500lt holding tank) assembled product pictorial view
HTS902.0001-09		25 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS902.0001-11	A	25 Person nonflush (2500lt holding tank) general arrangement
HTS902.0001-13		25 Person microflush (2500lt holding tank) general arrangement
HTS902.0001-14		25 Person nonflush (5500lt holding tank) general arrangement
		25 PERSON DOUBLE
HTS902.0001.1-06	A	25 Person nonflush (2500lt holding tank) assembled product pictorial view
HTS902.0001.1-08		25 Person microflush (2500lt holding tank) assembled product pictorial view
HTS902.0001.1-11	A	25 Person nonflush (2500lt holding tank) general arrangement
HTS902.0001.1-13		25 Person microflush (2500lt holding tank) general arrangement
		50 PERSON
HTS903.0001-06	A	50 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS903.0001-08		50 Person microflush (5500lt holding tank) assembled product pictorial view
HTS903.0001-11	A	50 Person nonflush (5500lt holding tank) general arrangement
HTS903.0001-13		50 Person microflush (5500lt holding tank) general arrangement
HTS903.0001-14		50 Person nonflush (2500lt holding tank) general arrangement
		75 PERSON
HTS904.0002-06	A	75 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS904.0002-08		75 Person microflush (5500lt holding tank) assembled product pictorial view
HTS904.0002-11	B	75 Person microflush (5500lt holding tank) general arrangement
HTS904.0002-13		75 Person microflush (5500lt holding tank) general arrangement
		100 PERSON
HTS904.0001-06		100 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS904.0001-08		100 Person microflush (5500lt holding tank) assembled product pictorial view
HTS904.0001-11	A	100 Person nonflush (5500lt holding tank) general arrangement
HTS904.0001-13		100 Person microflush (5500lt holding tank) general arrangement
		150 PERSON
HTS905.0001-06		150 Person nonflush (5500lt holding tank) assembled product pictorial view
HTS905.0001-08		150 Person microflush (5500lt holding tank) assembled product pictorial view
HTS905.0001-11	A	150 Person nonflush (5500lt holding tank) general arrangement
HTS905.0001-13		150 Person microflush (5500lt holding tank) general arrangement