



NSW Ministry of Health

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Sewage Management Facility Vessel Accreditation Guideline (Septic Tanks, Collection Wells, Sewage Ejection Pump Stations, etc.)

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Local Government (General) Regulation, 2005 Clauses 40 and 41

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February 2016

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NSW Ministry of Health

Sewage Management Facility (SMF) Vessel Accreditation Guideline

1 Scope

A Sewage Management Facility (SMF) is by definition a human waste storage facility or a waste treatment device intended to process sewage. This Guideline sets out the minimum requirements for accreditation of SMF vessels used in the containment and / or treatment of sewage on single domestic premises.

Where the treatment process is a primary treatment process, the vessel is known as a septic tank, collection well, greywater tank, septic closet, blackwater tank, or CED pre-treatment tank. The vessel may be used as a pump well without containing a treatment process and is known as a sewage ejection pump station. The treatment process may be a secondary treatment process and the vessel and its contents are commonly known as an aerated wastewater treatment system but there are also other types of secondary treatment system. These systems are covered in another separate Accreditation Guideline. However, any manufactured vessel used to contain a secondary treatment system or part thereof must be accredited using this Guideline.

A manufacturer of a SMF vessel is required to obtain a NSW Health certificate of accreditation for each capacity vessel produced. This is because local councils in NSW are only permitted to approve of the installation of septic tanks and other SMF vessels which are accredited by the Secretary of NSW Health. See Section 4 for a more detailed legislative outline. Specific details on how to obtain NSW Health accreditation are contained in Section 7.

Other accreditation guidelines are available for:

- Aerated Wastewater Treatment Systems and other secondary treatment systems;
- Domestic Greywater Treatment Systems; and
- Waterless Composting Toilets.

2 Objectives

The objectives of this Accreditation Guideline are to:

- specify the performance requirements and performance criteria for SMF vessels;
- provide design criteria for manufacturers/suppliers of SMF vessels to enable product accreditation by an independent third party;
- specify the capacities of certain SMF vessels for installation in NSW.

3 Interpretation

3.1 Abbreviations

AS/NZS 1546.1:2008	Australian Standard/New Zealand Standard "Onsite Domestic Wastewater Treatment Units, Part 1: Septic Tanks"
AS/NZS 1547:2012	Australian Standard / New Zealand Standard "On-site Domestic Wastewater Management"
CAB	Conformity Assessment Body accredited by JAS-ANZ
CED	Common Effluent Drain
JAS-ANZ	Joint Accreditation System of Australia and New Zealand
NSW Health	NSW Ministry of Health
SEPS	Sewage Ejection Pump Station
SMF	Sewage Management Facility

3.2 Definitions

blackwater	human excrement or matter which may be contaminated with human excrement discharged from a toilet or similar fixture
conformity assessment body (CAB)	an independent third party accredited by JAS-ANZ to certify products and/or organisational compliance of companies
CED pre-treatment tank	a SMF which is a type of septic tank treating sewage prior to discharging effluent to a common effluent drainage scheme
collection well	a SMF which is a holding tank used for the reception and temporary storage of septic tank effluent
greywater	a component of sewage which is domestic wastewater arising from a hand basin, bath, shower, kitchen sink, dishwasher, washing machine and laundry tub but excludes blackwater
greywater tank	a SMF which is a single or multiple chambered tank through which greywater is allowed to flow under quiescent conditions to permit settling and floatation of suspended matter for retention so that organic matter contained can be decomposed (digested) by anaerobic bacterial action. It is essentially a septic tank for greywater
manufacturer/supplier	the person, company or firm, and any nominated representative of the company or firm submitting an application for accreditation of the SMF vessel to NSW Health
septic tank	a SMF which is a single or multiple chambered tank through which sewage is allowed to flow under quiescent conditions to permit settling or floatation of suspended matter for retention so that organic matter contained can be decomposed (digested) by anaerobic bacterial action
septic closet	(also called a blackwater tank) a SMF which is a type of septic tank having a toilet constructed, usually in an outhouse, directly over the tank and where the toilet discharges directly into the tank
sewage	wastewater and human waste arising from domestic premises and may contain waste arising from toilets and similar fixtures, showers, baths, hand basins, clothes washing machines, laundry tubs, kitchen sinks and dishwashers. Sewage includes blackwater and greywater but not stormwater
sewage ejection pump station	a SMF which is designed to temporarily store sewage prior to comminution/maceration and/or discharge directly to a sewer
sewage management facility (SMF)	a human waste storage facility or a waste treatment device intended to process sewage (clause 3 <i>Local Government (General) Regulation 2005</i>)
single dwelling	includes a dual occupancy dwelling
wastewater	liquid waste containing solids generated by a domestic premises and includes sewage, greywater and blackwater

4 Legislation

Section 68 of the *Local Government Act, 1993*, sets out the activities which require prior approval of the local council. In the *Table of Approvals to section 68, Part C – “Management of Waste”, Item 5* states that prior approval of the local council is required to “install, construct or alter a waste treatment device or a human waste storage facility or a drain connected to any such device or facility”.

Clause 3 of the *Local Government (General) Regulation 2005* defines a sewage management facility (SMF) as:

- (a) a human waste storage facility or
- (b) a waste treatment device intended to process sewage, and includes a drain connected to such facility or device.”

This definition ties the Regulation and section 68 of the Act together when considering the requirement for local council approval prior to SMF installation.

Those types of SMF's which are generally available for purchase by retail and which require accreditation by NSW Health are set out in clause 40 of the *Local Government (General) Regulation 2005* which states "(1) This Subdivision applies to such models of the following sewage management facilities as are generally available for purchase by retail:

- (a) wet composting closets,
- (b) waterless composting closets,
- (c) septic closets,
- (d) septic tanks,
- (e) holding tanks and collection wells used for the receipt and storage of effluent (other than those intended to be emptied after each use, such as chamber pots),
- (f) waste treatment devices designed to comminute or macerate and discharge sewage to a sewerage system,
- (g) waste treatment devices that receive and treat sewage before discharging effluent to a common effluent drainage scheme,
- (h) waste treatment devices that treat sewage using a specific process to produce biosolids and disinfected effluent to a standard suitable, either separately or in combination, for recycling by surface or sub-surface irrigation or by internal or external household use,
- (i) any other kind of sewage management facility specified in a notice published in the *Gazette* by the Director-General (Secretary) for the purposes of this clause.

(2) However, this Subdivision does not apply:

- (a) to a sewage management facility intended to treat:
 - (i) sewage of a non-domestic nature, or
 - (ii) sewage from premises normally occupied by more than 10 persons, or
 - (iii) an average daily flow of sewage exceeding 2,000 litres, or
- (b) to the part of a sewage management facility that consists of a drain connected to the facility, or
- (c) to any other component of a sewage management facility that is specified in a notice published in the *Gazette* by the Director-General (Secretary) of the Department (Ministry) of Health for the purposes of this clause."

The models applicable to this guideline are septic tanks, collection wells, septic closets, greywater tanks, CED pre-treatment tanks and sewage ejection pump stations and other similar vessels.

Clause 41 of the *Local Government (General) Regulation 2005* specifies and clarifies the role of NSW Health and local councils.

"A council must not approve the installation or construction of a sewage management facility to which this Division applies unless the council is satisfied that the facility is to be installed or constructed to a design or plan that is the subject of a certificate of accreditation from the Director-General (Secretary) of the Department (Ministry) of Health, being a certificate that is in force."

In this case septic tanks, collection wells, septic closets, septic tanks, collection wells, septic closets, greywater tanks, CED pretreatment tanks, and sewage ejection pump stations are all SMF which require a NSW Health certificate of accreditation before a local council may approve of the installation under section 68 of the Act.

SMF (waste treatment devices) vessels of a capacity larger than those specified in clause 40(2) as domestic tanks in this Guideline or those intended for a non-domestic application are not subject to the accreditation process.

It should be noted that NSW Health certification of accreditation does not include the plumbing to or from the septic tank or other SMF, the land application system or the final disposal method. This is a matter for the local council which should consider the provisions of the Plumbing Code of Australia and relevant Australian and New Zealand Standards, site assessments, recommendations from the Office of Local Government, the Plumbing Code of Australia and its own wastewater management strategy.

A prototype model of SMF under test or development does not require prior accreditation, or one that is designed by an owner for installation on their own premises, or one designed by another person where the design is specific and unique to those premises. Also, NSW Health accreditation is not required where

the SMF is not intended to treat sewage of a domestic nature, for premises normally occupied by more than 10 persons or where the average daily flow exceeds 2,000 litres.

Certification of accreditation by the Secretary is to facilitate an approval to install, construct or alter a waste treatment device issued by the local council under the provisions of Section 68, *Local Government Act, 1993*. Certification of accreditation granted by the Secretary is issued to a specific SMF vessel produced by a specific manufacturer/supplier and for a definite length of time, usually a maximum of five years or the period of time specified by the Certification Assessment Body (CAB).

The Plumbing and Drainage Act 2011 (section 4) and the Plumbing Code of Australia applies to the sanitary drainage upstream of the SMF in all local council areas but does not apply to the On-site Wastewater Management Systems (See section F of the NSW Appendix to the Plumbing Code of Australia).

5 Roles of Involvement

5.1 Local Councils

The powers allowing local councils to grant approval to construct and install a waste treatment device at a particular site are provided in Section 68, Part C - Management of Waste, *Local Government Act, 1993*, and the, *Local Government (Approvals) Regulation 2005*. It is the function of the local council to administer and facilitate approval of the installation, construction or alteration of waste treatment devices in their areas. Further, where SMFs are installed the owner or occupier of the premises must periodically obtain an approval to operate a SMF, under Section 68A of the *Act* and Clause 42 of the *Regulation*, from the local council. This is to ensure that the SMF is operating correctly, not creating a public health risk, environmental damage or affecting the amenity of the local area.

5.2 Office of Local Government; Department of Premier and Cabinet.

The Office of Local Government is a division of the NSW Department of Premier and Cabinet and is responsible for local government administration across NSW. Operating within seven strategic objectives the Office has a policy, legislative, investigative and program focus in matters ranging from Local Government finance, infrastructure, governance, performance, collaboration and community engagement. The Office strives to work collaboratively with the Local Government sector and is the key adviser to the NSW Government on Local Government matters. The Office has responsibility for maintaining and reviewing the Local Government Act and Regulations. It also developed the Septic Safe program.

<http://www.olg.nsw.gov.au/sites/default/files/Easy-septic-guide.pdf>

5.3 NSW Ministry of Health

(a) The NSW Ministry of Health administers the certification of accreditation of SMF and vessels in accordance with Clause 41 of the *Local Government (General) Regulation 2005*. All applications (see Annexure 1 for the application form) for accreditation of SMF vessels should be forwarded to the Manager, General Environmental Health, NSW Ministry Health, LMB 961, North Sydney, NSW, 2059. Enquires should be directed to the Senior Policy Analyst, On-site Domestic Wastewater Management on (02) 9424-5973. All Certificates of Accreditation are uploaded to the NSW Health web site:

<http://www.health.nsw.gov.au/environment/domesticwastewater/Pages/default.aspx>

(b) Public Health Units receive and disseminate information and liaise with local councils.

5.4 Conformity Assessment Bodies

Conformity Assessment Bodies (CABs) are accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), a Commonwealth appointed accreditation body. Accreditation of CABs demonstrates their competence, credibility, independence and integrity to certify or inspect organisations for conformity to programs and standards. A CAB must be used to assess conformity of manufacturers SMF vessels to AS/NZS 1546.1: 2008.

6 NSW Health Accreditation Requirements

6.1 NSW Health has adopted relevant clauses of the Australian Standard / New Zealand Standard, AS/NZS 1546.1-2008 "Onsite domestic wastewater treatment units Part 1: Septic Tanks" where indicated in this Guideline, for the statutory purposes of issuing a certificate of accreditation of SMF vessels.

6.2 A NSW Health certificate of accreditation will only be issued to vessel manufacturers who obtain a certification from a JAS-ANZ accredited CAB for compliance with AS/NZS 1546.1-2008.

6.3 Once CAB certification has been obtained by the manufacturer, an application satisfying the requirements of Section 7 of this Guideline needs to be made to NSW Health for a "Certificate of Accreditation".

6.4 A cast in situ septic tank and/or collection well designed by the owner of a premises for installation on that premises are not subject to certification of accreditation by NSW Health. However, installation approval of the local council under section 68 of the *Local Government Act 1993* is still required.

7 Application Criteria

7.1 All completed applications for certification of accreditation shall be in the format attached as Annexure 1 and forwarded to the Manager, General Environmental Health, NSW Ministry of Health, LMB 961, North Sydney, NSW, 2059. Enquires should be directed to the Senior Policy Analyst, On-site Domestic Wastewater Management on (02) 9424-5973.

7.2 The prescribed fee, if any, shall be attached. No fee is currently prescribed.

7.3 The application is to provide the following supporting documentation:

7.3.1 A copy of the certificate issued by a CAB accredited by JAS-ANZ specifically to assess conformance of the vessel with AS/NZS 1564.1:2008;

7.3.2 A copy of a plan of the vessel on A4 size paper, detailing plan and cross sectional views of the vessel and lids. The plan is to be suitable for use with the submission of applications under Section 68, *Local Government Act, 1993*, and *Local Government (General) Regulation 2005* to the local council.

7.3.4 An installation brochure and a user instruction fact sheet shall be produced by the manufacturer as indicated in Section 11 of the Guideline. The brochure and fact sheet may be combined and may cover the full range of vessels produced.

7.4 The application may be submitted electronically to: ENHWU@doh.health.nsw.gov.au marked to the attention of the Manager, General Environmental Health.

8 Performance Requirements and Performance Criteria

8.1 Scope

This section is intended to outline the general requirements and performance criteria for SMF vessels and their associated fittings.

8.2 Function and Context of Use

8.2.1 Septic Tanks, Septic Closets, Greywater Tanks and CED Pretreatment Tanks

The function of septic tanks and other similar tanks such as septic closets (blackwater tanks), greywater tanks and CED pretreatment tanks is essentially to provide a stilling chamber and primary treatment for blackwater and greywater either separately or combined. The chamber then functions to allow solids to settle to form sludge, and be retained for anaerobic treatment while the lighter fraction floats to the surface similar to a grease trap to form a scum layer.

The tank is sized to allow firstly for the detention of 24 hours daily flow for a minimum of five persons and to a maximum of ten persons. The tank capacity is then increased to allow for the accumulation of digested sludge which must be removed at about three to five yearly intervals for separate disposal off site. The liquid component commonly referred to as effluent, then flows when displaced by incoming sewage to a land application system or some other form of utilisation or disposal, or to a collection well from where the effluent is pumped to a land application system, sewer or removed by a road tanker.

Square junctions are placed at the inlet and outlets of the septic tank to minimise disturbance of the tank contents at the inlet and to minimise scum carryover at the outlet. A baffle or partition wall shall be fitted in all septic tanks across the internal flow path of the effluent to retain solids close to the inlet and to maximise the flow pathway between the inlet and outlet. The baffle wall or partition divides the tank into two chambers where the ratio between the capacities of the two chambers is about to 2:1. The top of the baffle wall or partition shall be at least 150mm above the top of the water level in the tank to prevent the transfer of any solid matter between the chambers.

An outlet filter may be installed in the outlet of the septic tank. An outlet filter can control the discharge of suspended solids in the effluent leaving the septic tank and at the same time prevent the carryover of gross solids and scum. Outlet filters can be retro fitted into existing septic tanks. Outlet filters are excluded from the accreditation process.

Appropriate diagrams are contained in Figures 3.1 to 3.5 of AS/NZS 1546.1-2008.

8.2.2 Collection Wells

Collections wells are storage vessels used to hold effluent after treatment in a septic tank and prior to pumping to a land application system, CED system, sewer, or road tanker.

8.2.3 Sewage Ejection Pump Stations

The function of a sewage ejection well is to receive sewage for maceration and/or pumping directly to a sewer. It is not intended to separate the solid fraction from the liquid component for anaerobic digestion. Sewage ejection wells are used only to pump fresh sewage to a sewer main which cannot be reached by gravity. Pumping is regulated by a float switch but the tank must have additional capacity in case of pump failure.

8.2.4 Context of Use

All septic vessels are installed in the outside environment from totally free standing to totally buried. The tanks are therefore exposed to a range of impacts generated by variable internal and external loads and pressures, weather, ground movement, corrosion, light, and abuse.

Access must be provided for inspection and maintenance and must be extended to ground level if the tank is buried. Unauthorised or accidental access must be prevented.

8.3 Performance Requirements

The performance requirements specified in Section 2.3 "Performance Requirements" of AS/NZS 1546.1:2008 apply as appropriate to all SMF vessels.

8.4 Performance Criteria

8.4.1 Capacities

The capacities of septic tanks, collection wells and other conventional systems specified in Appendix C of AS/NZS 1546.1:2008 and Appendix J of AS/NZS 1547:2012 do not apply in New South Wales.

The minimum capacities for septic tanks, collection wells, septic closets, greywater tanks, CED pretreatment tanks, and sewage ejection pump stations applicable in New South Wales, are specified in

Annexure 2 of this Guideline. No allowance is made to receive waste from spa baths and garbage grinders and their use in un-sewered areas is actively discouraged

8.4.2 Other Performance Criteria

The performance criteria specified in Clauses 2.4.2 to 2.4.11 of AS/NZS 1546.1:2008 apply in NSW.

NOTE: All septic tanks of capacity greater than 2050 L shall be fitted with a partition (baffle).

9 General Design Requirements

9.1 Septic Tanks and other primary process vessels

All septic tanks, septic closets (blackwater tanks), secondary treatment system primary treatment vessels, CED pre-treatment tanks and greywater tanks shall comply with the design requirements contained in the Sections of AS/NZS 1546.1:2008 as follows:

Section 3 (Design requirements):	Clauses 3.1 to 3. 8, including Figures 3.1 to 3.5.
Section 4 (Marking requirements):	Clauses 4.1 to 4.3. In addition the septic tank shall display a symbol of product certification relevant to the CAB.

NOTE: It is a requirement that all septic tanks, septic closets (blackwater tanks), CED pretreatment tanks and greywater tanks where the capacity exceeds 2050 litres are fitted with a partition or baffle wall, dividing the tank into two chambers, where the capacity of the first chamber is twice the capacity of the second chamber, in accordance with AS 1546.1-2008.

9.2 Collection Wells and Sewage Ejection Pump Stations (SEPS)

All collection wells and SEPS shall comply with the requirements contained in the Sections of AS/NZS 1546.1:2008 as follows:

Section 3 (Design requirements):	Clauses 3.1, 3.2 (except 3.2.1), 3.3, 3.4 (except 3.4.1) and 3.6, 3.7 and 3.8 and attendant Figures and Appendix F.
Section 4 (Marking requirements):	Clauses 4.1 to 4.3. In addition the collection well shall display a symbol of product certification relevant to the CAB.

9.3 Additional Design Requirements - SEPS

9.3.1 The grinder pump in the sewer ejection pump station shall be fitted with float and/or pressure switches to ensure small volumes of sewage are pumped at regular intervals. The small diameter pressure line to the sewer shall be fitted with a backflow prevention device.

9.3.2 The sewage ejection pump station shall be fitted with an alarm system to indicate an electrical or pump failure. The alarm system shall comprise audible and visible alarms with a muting facility for the audible alarm. The muting facility shall reset to audible after 2 hours. The alarms shall be visible from inside the dwelling.

9.3.3 All metal fittings and components within the sewer ejection pump station shall be of non-corroding material and shall have a service life of at least fifteen (15) years. All mechanical and electrical parts shall have a minimum service life of 5 years and a minimum warranty period of twelve (12) months.

9.4 Testing requirements

The vessel shall be tested to demonstrate compliance with Appendix A of AS/NZS 1546.1:2008. NSW Health requires that certification against the Standard is obtained by the manufacturer of the tank or vessel. Therefore the testing regime for both type testing and routine quality control testing shall be established in consultation with a quality audit organisation or Conformity Assessment Body (CAB) accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ) or a body with which JAS-ANZ has a Memorandum of Understanding.

10 Specific Requirements - Domestic

All vessels constructed of a material specified in the following table shall comply with the specified section of AS/NZS 1546.1:2008 and shall display a symbol of product certification relevant to the CAB.

Septic Tank or Collection Well Type	Section of AS/NZS 1546.1:2008
Precast Concrete Steel Reinforced Tanks and Precast Concrete Steel Fibre Reinforced Tanks	Section 5
Reinforced Cement Ferro-cement Mortar Tanks	Section 7
Glass-fibre Reinforced Plastic Tanks	Section 8
Plastic (Polyolefin) Tanks	Section 9

11 Installation and User Instructions

Each manufacturer shall submit in their application for a certificate of accreditation to NSW Health the following documentation or a URL address where the documentation is contained:

11.1 An installation brochure which explains how the septic tank and collection well should be installed above or below ground level and anchored, and how the fittings such as baffles, partition walls and square junctions should be installed.

11.2 A users instruction fact sheet shall be produced which will be suitable for use by the domestic operator and shall include but not necessarily be limited to:

- an overview of the tank
- warranty and service life
- trouble shooting and signs of failures
- a list of toxic substances / loads to be avoided
- desludging requirements
- safety information
- spreading of hydraulic loads

12 Certificate of Accreditation Conditions

The Certificate of Accreditation may be issued subject to conditions and any accreditation granted under this Guideline shall be valid while the StandardsMark or Certificate of Conformance is retained. Any modifications or variations of such approval design shall be submitted for separate consideration and variation of accreditation by the Secretary of NSW Health.

13 Specific Requirements - Commercial

13.1 Accreditation

All septic tanks larger than 5,000L and collection wells larger than 12,000L used for commercial pump out installations do not require separate accreditation from the NSW Health.

13.2 General Design Requirements

Septic tanks and collection wells, designed for the installation at commercial premises, should comply with the intent and contents of AS/NZS 1546.1:2008

13.3 Structural Requirements

Structural requirements such as load bearing capabilities, structural adequacy, concrete specification, wall thicknesses, lid thickness, reinforcement, and the like should be subject to assessment and certification by a structural engineer.

13.4 Multiple Unit Connection

13.4.1 Septic Tanks

Where it is proposed to join two septic tanks together to form the one septic tank unit for a commercial installation, then two septic tanks with their partition walls removed shall be joined together such the capacity of the first septic tank has about twice the capacity of the second septic tank. Both septic tanks shall be fitted with inlet and outlet fittings and both septic tanks shall be fitted with inspection and access openings and covers. Both septic tanks shall be placed on a common concrete slab to ensure that there is no differential movement.

13.4.2 Collection Wells

Where it is proposed to join two or more collection wells together to form one collection well unit for a commercial installation, then the collection well should be located on a common concrete slab to ensure that there is no differential movement. Provision shall be made to ensure that the tanks are connected at the base to facilitate complete effluent removal from one draw off point or draw off points are provided to all collection wells. Both collection wells shall be fitted with inspection and access openings and covers.

13.5 Single Pump-out systems

A single pump-out system is designed to incorporate both the septic tank and collection well into one large tank. The capacities of the septic tank and collection well depend on the number of persons the system serves and the proposed use of the system. A certificate of accreditation needs to be issued by NSW Health for each single pump-out system design.

A single pump-out system may be installed for the purpose of:

- pumping effluent to a sewer main or CED system;
 - pumping effluent to a prepared land application area on higher ground; or
 - disposal of effluent by tanker removal service.
-

Annexure 1

The Manager
General Environmental Health Unit
NSW Ministry of Health
LMB 961
NORTH SYDNEY NSW 2059
(or email to: nshaw@doh.health.nsw.gov.au)

Dear Sir,

**APPLICATION FOR CERTIFICATE OF ACCREDITATION OF A SEWAGE MANAGEMENT FACILITY
BEING A SEPTIC TANK, COLLECTION WELL, CED PRE-TREATMENT TANK, GREYWATER TANK OR
OTHER PRIMARY TREATMENT VESSEL**

I, as the appropriate applicant, wish to apply for a "Certificate of Accreditation" for a Sewage Management Facility being a septic tank, collection well, CED pre-treatment tank, greywater tank or other primary treatment vessel to be issued by the Secretary of the NSW Ministry of Health, pursuant to clause 41 Local Government (General) Regulation, 2005 consistent with the supplied "Certificate of Conformance" or "StandardsMark Licence".

I supply the following information where appropriate:

Detail	Information
Title (Mr, etc.)	
Name	
Position	
Email	
Telephone	
Business Name	
Trading as Name	
ABN	
Address	
Postal Address	
Type of SMF*	
Name of SMF*	

* SMF = Sewage Management Facility (see over)

Attachments: In support of the application the following are attached (hardcopy or e-copy):

Attachments	Tick
A4 plan & cross section of SMF	
Specification	
Details of any modification since issue of previous Certificate (if applicable)	
Conformance Certification	
URL of Installation, Operation and Owner Manuals (or hardcopy)	
Any changes to the SMF listing on the Ministry's web site	

Yours sincerely,

Signature: _____ Date: _____

* Commonly Known Types of SMF:

- Aerated Wastewater Treatment System
- Domestic Greywater Treatment System
- Septic Tank / Collection Well
- Sewage Ejection Pump Station
- Waterless Composting Toilet
- Wet Composting Toilet
- Biolytic Filter
- Constructed Wetland

NOTE: The local authority (council) must not approve the installation or construction of a sewage management facility unless the local authority (council) is satisfied that the facility is to be installed or constructed to a design or plan that is the subject of a "certificate of accreditation" from the Secretary of the Ministry of Health, being a certificate that is in force:

(a) wet composting closets,

(b) waterless composting closets,

(c) septic closets,

(d) septic tanks,

(e) holding tanks and collection wells used for the receipt and storage of effluent (other than those intended to be emptied after each use, such as chamber pots),

(f) waste treatment devices designed to comminute or macerate and discharge sewage to a sewerage system,

(g) waste treatment devices that receive and treat sewage before discharging effluent to a common effluent drainage scheme,

(h) waste treatment devices that treat sewage using a specific process to produce biosolids and disinfected effluent to a standard suitable, either separately or in combination, for recycling by surface or sub-surface irrigation or by internal or external household use,

See Local Government (General) Regulation 2005, Clauses 40 & 41 for exact wording

[LG\(G\)R clauses 40 & 41](#)

Annexure 2

CAPACITY CALCULATION CRITERIA - DOMESTIC INSTALLATIONS

1 NUMBER OF PERSONS

1.1 Minimum number of persons for calculations: Five.

1.2 Maximum number of persons for calculations: Ten.

2 WASTEWATER MINIMISATION

2.1 Food waste disposal units and spa baths are excluded from discharge into a sewage management facility and their installation on premises served by on-site wastewater management is not recommended.

2.2 Householders should minimise wastewater generation by limiting water usage and by the selection of appliances which conserve water usage. Appliances such as low volume shower heads, front loading clothes washing machines and low water consumption dishwashers should be chosen.

2.3 Greywater diversion devices which may be installed under the provisions of clause 75A *Local Government (General) Regulation 2005* on laundry tubs to divert final rinse greywater are not permitted in unsewered areas.

3 SEWAGE CLASSIFICATIONS

In order to calculate the required capacities of tanks sewage (wastewater) needs to be classified according to its source and an allowance made for sludge accumulation. For the purposes of calculation of capacities the sewage source is classified as follows using abbreviations:

3.1 Sewage Source

WC = Water Closet (Blackwater)
HB = Handbasin
K = Kitchen
B = Bath
SHR = Shower
L = Laundry

3.2 Abbreviations

S = Sludge Allowance
N = Number of persons (minimum = 5)
L = Litres
DF = Daily Flow

Table 1 assigns the basic allowance for sludge accumulation in Litres and a daily flow in Litres per person of wastewater generated.

Table 1: Allowances and Daily Flows for Calculation of Tank Capacities

Waste	Calculation Allowance
S (Sludge Allowance)	1550 L
WC (Water Closet)	50 DF Litres/person/day
HB (Handbasin)	10 DF Litres/person/day
K (Kitchen)	10 DF Litres/person/day
B + SHR (Bath and Shower)	50 DF Litres/person/day
L (Laundry)	30 DF Litres/person/day
All wastes (WC + HB + K + B + SHR + L)	150 DF Litres/person/day

AS/NZS 1546.1-2008 establishes an allowance for scum and sludge accumulation in a conventional all waste septic tank of 80 litres / person / year and a recommendation that septic tanks be desludged at regular intervals of 3-5 years.

NSW Health has set a sludge allowance of 1550 litres irrespective of the number of persons for which the septic tank is designed. Therefore, a septic tank designed for a minimum of 5 persons needs to be desludged approximately every 4 years. Where a septic tanks installation serves more than 5 persons the desludging interval should be correspondingly shortened.

It is preferred that Council implement a management program where the frequency of desludging is based upon regular inspection and monitoring of the septic tank.

6 Capacity Calculation for Septic Tanks, Septic Closets, CED Pretreatment Tanks and Greywater Tanks

The general formula used to calculate tank capacity in litres is:

$$\begin{array}{rclcl} S & + & (DF & \times & N) & = & \text{Capacity} \\ \text{Sludge Allowance} & + & (\text{Daily Flow} & \times & \text{Number of Persons}) & = & \text{Tank Capacity.} \end{array}$$

It should be noted that the minimum number of persons who may be used in any capacity calculation is five. The number of persons per household is based on the number and size of bedrooms where, under the provisions of clause the *Public Health Regulation 2012* a minimum of 5.5 square meters is allocated for long stay accommodation per person.

Table 2 describes, in the first column, the combination of wastewater categories to be contained or treated in the tank. The second column indicates the appropriate tank which may be used and the third column displays the assumed daily flow / person / day for the wastewater categories. The fourth column provides the formula to calculate the tank capacity.

In the circumstances of a septic closet (blackwater tank) or greywater tank a minimum capacity of 2050 litres is specified as being the minimum accepted tank size to ensure efficient treatment. Similarly, where kitchen wastewater is included in the wastewater flow a larger minimum capacity of 2300 litres is necessary to ensure that a partition is included in the tank to enhance its ability to function as a grease trap. It should be noted that kitchen wastewater is excluded from a greywater tank and kitchen wastewater may only discharge to a septic tank or CED pretreatment tank.

Table 2: Daily Flows per Person and Capacity Calculation for Septic Tanks, Septic Closets, CED Pretreatment Tanks and Greywater Tanks

Wastewater	Waste Treatment Device	Daily Flow (DF) (Litres/person/day)	Waste Treatment Device Capacity (Litres minimum)
WC only	Septic Closet (Blackwater Tank)	50	S + (N x 50) 2050 L minimum
WC + HB	Septic Closet (Blackwater Tank)	60	S + (N x 60) 2050 L minimum
HB+B+SHR+L	Greywater Tank	90	S + (N x 90) 2050 L minimum
All wastewater	Septic Tank or CED Pretreatment Tank	150	S + (N x 150) 2300 L minimum

7 Capacity Calculation for Collection Wells

To calculate the capacity of a collection well firstly select the appropriate daily flow (DF) from Table 2 and multiply it by the number of persons (N). Refer also to Table 3.

Where the effluent is to be pumped to a land application system, to a sewer, or forms part of a CED system then a single pump will be installed on the collection well and the specified formula used to calculate the capacity based on two days storage. Where the owner wishes to install dual pumps, in case of pump failure, then it is only necessary to store one days flow. Minimum collection well capacities are again stated. Council should require that a float switch on the pump be activated when the volume of the tank exceeds 300 Litres. The pressure line should be fitted with a backflow prevention device. It may be worthwhile requiring an alarm to be installed on a high level float switch.

When a septic tank pump out system is installed is it necessary to allow seven days storage in the collection well. Some Local Authorities require larger minimum capacities to allow for peak flows from higher loadings from visitors (ie parties).

Table 3: Calculation of Collection Well Capacities

Collection Well Use	Single Pump	Dual Pump	Tanker Pump Out
Capacity Calculation Formula	$DF \times N \times 2$	$DF \times N$	$DF \times N \times 7$
Minimum Capacity	2050 L	2050 L	5250 L

8 Sewage Ejection Pump Stations

As a sewage ejection pump station is used to macerate/comminute and/or pump all sewage to a small diameter reticulated sewer system the calculation for capacity is based on the daily flow of all waste of 150 litres / person / day.

The tank or vessel, containing the grinder pump, shall have a minimum capacity equal to six (6) hours of the average peak flow measured over an eight-hour period per day.

As an example: - The daily flow rate for a 3-bedroom residential dwelling, designed for occupation by a minimum of 5 persons, is calculated at 750 litres/day. The average peakflow over an eight-hour period is approximately 100 litres/hour. The minimum capacity for a sewage ejection pump station installed to serve a 3-bedroom residential dwelling therefore shall be 600 litres.
