Te Kaunihera o Te Hiku o te Ika
Far North District Council

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Schedule 4). Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges — both available on the Council's web page.

1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement? ◯ **Yes** ✓ **No**

2. Type of Consent being applied for

(more than one circle can be ticked):

- ◯ **Land Use**
- ◯ **Fast Track Land Use***
- ◯ **Subdivision**
- ◯ **Consent under National Environmental Standard** (e.g. Assessing and Managing Contaminants in Soil)
- ◯ **Other (please specify)** 8.6.5.1.1
- ◯ **Discharge**
- ◯ **Change of Consent Notice (s.221(3))**
- ◯ **Extension of time (s.125)**

** The fast track is for simple land use consents and is restricted to consents with a controlled activity status.*

3. Would you like to opt out of the Fast Track Process?

◯ **Yes** ✓ **No**

4. Consultation

Have you consulted with Iwi/Hapū? ◯ **Yes** ✓ **No**

If yes, which groups have you consulted with?	
Who else have you consulted with?	

For any questions or information regarding iwi/hapū consultation, please contact Te Hono at Far North District Council tehonosupport@fndc.govt.nz

5. Applicant Details

Name/s: Julie Waugh

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

6. Address for Correspondence

Name and address for service and correspondence (if using an Agent write their details here)

Name/s: Leah Giggey - Versatile

Email: [redacted]

Phone number:

Postal address:
(or alternative method of service under section 352 of the act)

** All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.*

7. Details of Property Owner/s and Occupier/s

Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s: Julie Waugh

Property Address/ Location: 1009 Broadwood Road

Postcode 0491

8. Application Site Details

Location and/or property street address of the proposed activity:

Name/s: Julie Waugh

Site Address/ Location: 1009 Broadwood Road
Broadwood

Postcode 0491

Legal Description: Lot 1 **Val Number:** DP 82838

Certificate of title: NA39B/688

Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff? ◯ Yes ☑ No

Is there a dog on the property? ☑ Yes ◯ No

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. This is important to avoid a wasted trip and having to re-arrange a second visit.

9. Description of the Proposal:

Please enter a brief description of the proposal here. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

Build secondary unit 64.80m2
on a rural production property

If this is an application for a Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s), with reasons for requesting them.

10. Would you like to request Public Notification?

◯ Yes ☑ No

11. Other Consent required/being applied for under different legislation

(more than one circle can be ticked):

- (✓) **Building Consent** Enter BC ref# here (if known) 2024-10570
- ( ) **Regional Council Consent (ref # if known)** Ref # here (if known)
- ( ) **National Environmental Standard consent** Consent here (if known)
- ( ) **Other (please specify)** Specify 'other' here

12. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following:

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL) ( ) **Yes** (✓) **No** ( ) **Don't know**

Is the proposed activity an activity covered by the NES? Please tick if any of the following apply to your proposal, as the NESCS may apply as a result. ( ) **Yes** (✓) **No** ( ) **Don't know**

- ( ) **Subdividing land**
- ( ) **Changing the use of a piece of land**
- ( ) **Disturbing, removing or sampling soil**
- ( ) **Removing or replacing a fuel storage system**

13. Assessment of Environmental Effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as Written Approvals from adjoining property owners, or affected parties.

Your AEE is attached to this application (✓) **Yes**

13. Draft Conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision? ( ) **Yes** (✓) **No**

If yes, do you agree to extend the processing timeframe pursuant to Section 37 of the Resource Management Act by 5 working days? ( ) **Yes** (✓) **No**

14. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write in full) Julie Margaret Waugh

Email: [redacted]

Phone number: [redacted]

Postal address:
(or alternative method of service under section 352 of the act) [redacted]

Fees Information
An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

Declaration concerning Payment of Fees
I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: (please write in full) Julie Margaret Waugh

Signature:
(signature of bill payer [redacted]

Date 25-8-2025

MANDATORY

15. Important Information:

Note to applicant
You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.
You may apply for 2 or more resource consents that are needed for the same activity on the same form.
You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

Fast-track application
Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement.
A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:
Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, www.fndc.govt.nz. These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

15. Important information continued...

Declaration

The information I have supplied with this application is true and complete to the best of my knowledge.

Name: (please write in full) Liam Cuggy

Signature: [redacted] Date 28/08/25

A ...ion is made by electronic means

Checklist (please tick if information is provided)

- ◯ Payment (cheques payable to Far North District Council)
- ◯ A current Certificate of Title (Search Copy not more than 6 months old)
- ◯ Details of your consultation with Iwi and hapū
- ◯ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ◯ Applicant / Agent / Property Owner / Bill Payer details provided
- ◯ Location of property and description of proposal
- ◯ Assessment of Environmental Effects
- ◯ Written Approvals / correspondence from consulted parties
- ◯ Reports from technical experts (if required)
- ◯ Copies of other relevant consents associated with this application
- ◯ Location and Site plans (land use) AND/OR
- ◯ Location and Scheme Plan (subdivision)
- ◯ Elevations / Floor plans
- ◯ Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

EBC-2026-105/0

1009 Broadwood Road, Broadwood

Assessment of Environmental Effects (AEE)

Far North District Council (FNDC)
Resource Consent Application – Breach of Rule 8.6.5.1.1 (Residential Intensity)

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1. Site Description

The subject site within the Rural Production Zone, and comprises an area of approximately 6,000m². The site is currently developed with one residential unit and associated accessory buildings. The surrounding land use is predominantly rural, consisting of larger rural lifestyle and farming properties.

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2. Proposal

This application seeks resource consent to establish a second residential unit on the subject site. The proposed development will result in two residential units occupying a total land area of 6,000m².

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3. Rule Breach

The proposed activity breaches **Rule 8.6.5.1.1** of the Far North District Plan, which sets out minimum site area requirements for residential density in the Rural Production Zone:

"A maximum of one residential unit is permitted per site unless each unit can achieve a minimum area of 11.7 hectares for its exclusive use."

While each residential unit in this proposal can be allocated at least 3,000m² of exclusive outdoor space, the overall site does not meet the required 11.7 hectares per unit. As such, the proposal constitutes a breach of the residential intensity rule.

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4. Reasons for Non-Compliance

- The subject site is only 6,000m² in total area.
- The rule requires 11.7 hectares per residential unit.
- Therefore, the establishment of a second unit exceeds the permitted residential density and triggers the need for resource consent.

5. Assessment of Environmental Effects

5.1 Character and Amenity

- The proposed second residential unit will be designed to integrate with the existing development and rural character.
- Adequate setbacks, landscaping, and separation between the two dwellings will be provided.
- Given the relatively large size of the site (compared to urban standards), there will be no significant adverse effects on visual amenity or rural character.
- The density remains low in comparison to urban environments and will not compromise the open space or rural nature of the area.

5.2 Infrastructure and Servicing

- Both dwellings will be self-serviced with on-site wastewater and water supply systems.
- Stormwater will be managed on-site in accordance with best practice to avoid off-site effects.
- Access and parking are sufficient to cater for both dwellings, and no demand will be placed on public infrastructure.

5.3 Reverse Sensitivity

- The second dwelling will not introduce new reverse sensitivity concerns, as it is part of an existing rural property and will not interfere with surrounding rural activities.
- The development will maintain adequate buffers from neighbouring properties.

5.4 Precedent and Cumulative Effects

- Granting consent is unlikely to set a precedent due to the specific circumstances of the site (i.e., ability to provide adequate outdoor space and infrastructure despite being under 11.7 ha).
- The cumulative impact on rural density is minimal, as this is a standalone application and does not represent a pattern of subdivision or intensification in the area.

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6. Mitigation Measures

- Retain vegetative screening and rural style fencing to preserve visual amenity.
- Limit site coverage and maintain low-scale building design.
- Manage wastewater and stormwater on-site in accordance with FNDC and regional standards.
- Ensure compliance with noise and lighting limits to avoid adverse effects on neighbours.

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7. Conclusion

Although the proposal does not meet the minimum land area requirement under Rule 8.6.5.1.1, the actual environmental effects of the second residential unit are considered to be less than minor. The development maintains the rural character, provides sufficient private outdoor space, and does not compromise infrastructure, amenity, or rural land use compatibility.

Thanks,
Versatile Kerikeri

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA39B/688**

Land Registration District **North Auckland**

Date Issued 05 May 1978

Prior References

NA2086/4 NA2D/1356

Estate Fee Simple

Area 6000 square metres more or less

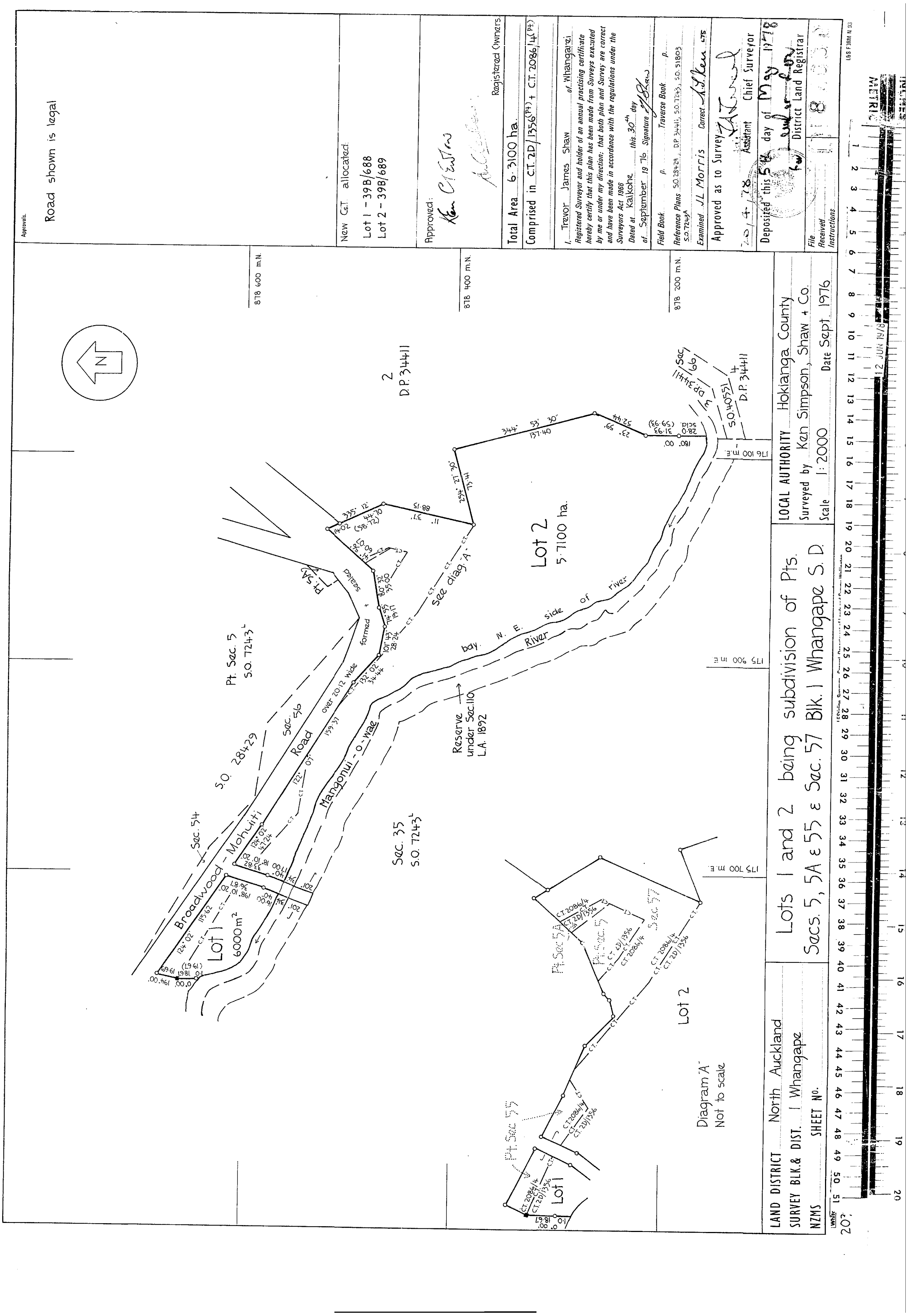
Legal Description Lot 1 Deposited Plan 82838

Registered Owners

Julie Margaret Waugh

Interests

12400584.3 Mortgage to ANZ Bank New Zealand Limited - 6.5.2022 at 1:32 pm


Road shown is legal
New C.T. allocated
Lot 1 - 39B/688
Lot 2 - 39B/689
Approved:
Registered Owners
Total Area 6.3100 ha.
Comprised in C.T. 2D/1356(Pt) + C.T. 2086/4(Pt)
I, Trevor James Shaw of Whangarei
Registered Surveyor and holder of an annual practising certificate hereby certify that this plan has been made from Surveys executed by me or under my direction: that both plan and Survey are correct and have been made in accordance with the regulations under the Surveyors Act 1966
Dated at Kaikohe this 30th day of September 1976. Signature
Field Book p. Traverse Book p.
Reference Plans S.O. 28429, D.P. 34411, S.O. 7243, S.O. 51803, S.O. 7243A
Examined J.L. Morris Correct
Approved as to Survey
Assistant Chief Surveyor
Deposited this 5th day of May 1978
District Land Registrar
File
Received
Instructions
LOCAL AUTHORITY Hokianga County
Surveyed by Ken Simpson, Shaw + Co.
Scale 1:2000 Date Sept. 1976
Lots 1 and 2 being subdivision of Pts.
Secs. 5, 5A & 55 & Sec. 57 Blk. 1 Whangape S.D.
LAND DISTRICT North Auckland
SURVEY BLK.& DIST. 1 Whangape
NZMS SHEET No.
Lot 2
5.7100 ha.
Lot 1
6000 m²
2
D.P. 34411
Pt. Sec. 5
S.O. 7243
Sec. 56
S.O. 28429
Sec. 54
Broadwood - Mohuiti Road
over 20.12 wide
formed + sealed
Mangonui - o - Wae River
bdy. N.E. side of river
Reserve under Sec.110 L.A. 1892
Sec. 35
S.O. 7243
see diag. 'A'
Diagram 'A'
Not to scale
Pt. Sec. 55
Pt. Sec. 5A
Pt. Sec. 5
Sec. 57
878 600 m.N.
878 400 m.N.
878 200 m.N.
176 100 m.E
175 900 m.E
175 700 m.E
METRIC

Te Kaunihera o Te Hiku o te Ika
Far North District Council

18 August 2025

Julie Margaret Waugh
417 Duncan Road
RD 2
Kaitaia 0482

Dear Sir / Madam,

Building consent number: EBC-2026-105/0
Property ID: 3328821
Address: 1009 Broadwood Road, Broadwood 0491
Description: Detached Dwelling and Install Onsite Wastewater Disposal System

Requirement for Resource Consent

PIM Assessment of your application has highlighted the need for Resource Consent that must be granted prior to any building works or earthworks commencing.

NB: As of 27th July 2022, some rules and standards in the Far North District Council Proposed District Plan took legal effect and compliance with these rules applies to your building consent. Please visit our website to see these rules
Far North Proposed District Plan (isoplan.co.nz)

The site is zoned **Rural Production** under the Operative District Plan and Resource Consent is required for breach of the following:

Rule:	8.6.5.1.1 RESIDENTIAL INTENSITY
Reason:	This application proposes a 2nd residential unit in this site with an area of 6,000m2. While each residential unit could achieve at least 3,000m2 for its exclusive use surrounding the unit, each unit cannot achieve a minimum of 11.7ha elsewhere on the property.

Rule:	12.4.6.1.2 FIRE RISK TO RESIDENTIAL UNITS
Reason:	Proposed works appear to be located within 20m of the drip line of any trees in a naturally occurring or deliberately planted area of scrub or shrubland, woodlot or forest.

Rule:	12.7.6.1.1 SETBACK FROM LAKES, RIVERS AND THE COASTAL MARINE AREA
Reason:	Plans do not demonstrate the proposed dwelling is setback >30m from the stream demonstrated along the southern boundary of this site.

Rule:	12.7.6.1.4 LAND USE ACTIVITIES INVOLVING DISCHARGES OF HUMAN SEWAGE EFFLUENT
Reason:	Plans do not demonstrate the proposed onsite wastewater disposal system and the disposal field, including the reserve disposal area, are setback >30m from the stream demonstrated along the southern boundary of this site.

Please note there may be other rule breaches found during the Resource Consent process. It is your responsibility to ensure the Resource Consent approved plans match the Consented approved plans.

The application form can be downloaded from www.fndc.govt.nz and submitted to Council's (Planning Department) with the appropriate documentation and instalment fee.

If you have any queries, please contact the Duty Planner on Duty.Planner@fndc.govt.nz or 0800 920 029.

Yours faithfully

Lysigna Mare
PIM Officer
Delivery and Operations

Emailed to: waipapa@versatile.co.nz

FORM 4
Certificate attached to
PROJECT INFORMATION MEMORANDUM

Section 37, Building Act 2004

Building Consent Number: EBC-2026-105/0

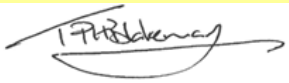
RESTRICTIONS ON COMMENCING BUILDING WORK UNDER RESOURCE MANAGEMENT ACT 1991

The building work referred to in the attached Project Information Memorandum is also required to have the following **Resource Consent**(s) under the Resource Management Act 1991:

- **Resource Consent – REQUIRED**

As the above Resource Consent(s) will affect the building work to which the Project Information Memorandum relates, until this has been granted no building work may proceed.

Failure to comply with the requirements of this notice may result in legal action being taken against you under the Resource Management Act 1991.

Signature:	
	Trent Blakeman
	Manager - Building Services –
Position:	Delivery and Operations
On behalf of:	Far North District Council (Building Consent Authority)
Date:	18 August 2025

EBC-2026-105/0
1009 Broadwood Road, Broadwood

To Whom It May Concern,

Re: RULE 12.4.6.1.2 – Fire Risk to Residential Units

We refer to the above rule and the requirement relating to proposed works being within 20m of the drip line of any trees in a naturally occurring or deliberately planted area of scrub, shrubland, woodlot, or forest.

After careful consideration of the site and the nature of surrounding vegetation, we do not believe that the proposed works should require an application under this provision. The closest vegetation comprises only two trees 1 Kahikatea and 1 Fuchsia Tree along with a lemon tree which are part of a maintained residential garden setting. These trees do not constitute scrub, shrubland, woodlot, or forest, nor do they pose a meaningful fire risk to the residential unit or its occupants. The closest production forestry is over 100m away across the main road.

Given the managed and low-risk character of the vegetation, we respectfully submit that Rule 12.4.6.1.2 is not triggered in this instance and that the works should proceed without the need for a resource consent application.

We trust this clarifies the situation, and we would be happy to provide any further information if required.

Attached supporting photo

Thanks,

Versatile Kerikeri

M 021 210 5448
P 09 407 9861

331 Waipapa Road, Kerikeri, 0295

Versatile® | 40 YEARS of Building Better for NZ

PO Box 31, Waipapa, 0230
www.versatile.co.nz

CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO STARTING . ALL DIMENSIONS IN MM UNLESS STATED
Note: Construction to comply with NZS3604.2011 and the New Zealand Building Code

Project Information:

Lot 1
DP82838
Area: 5940 m²
Val'n No. 00651-07307

Wind Zone: HIGH
A/Open/Exposed/T1
as per NZS3604:2011 Section 5.2

Exposure Zone: B

District Plan Zone:
Rural Production

Earthworks: for foundations only

STORMWATER MANAGEMENT
Impermeable Surfaces:

Existing roof area:	**266.4m²**
Existing driveway & paving:	**148.0m²**
Proposed building roof area:	**82.8m²**
Total Impermeable Area:	**497.2m² (8.4%)**

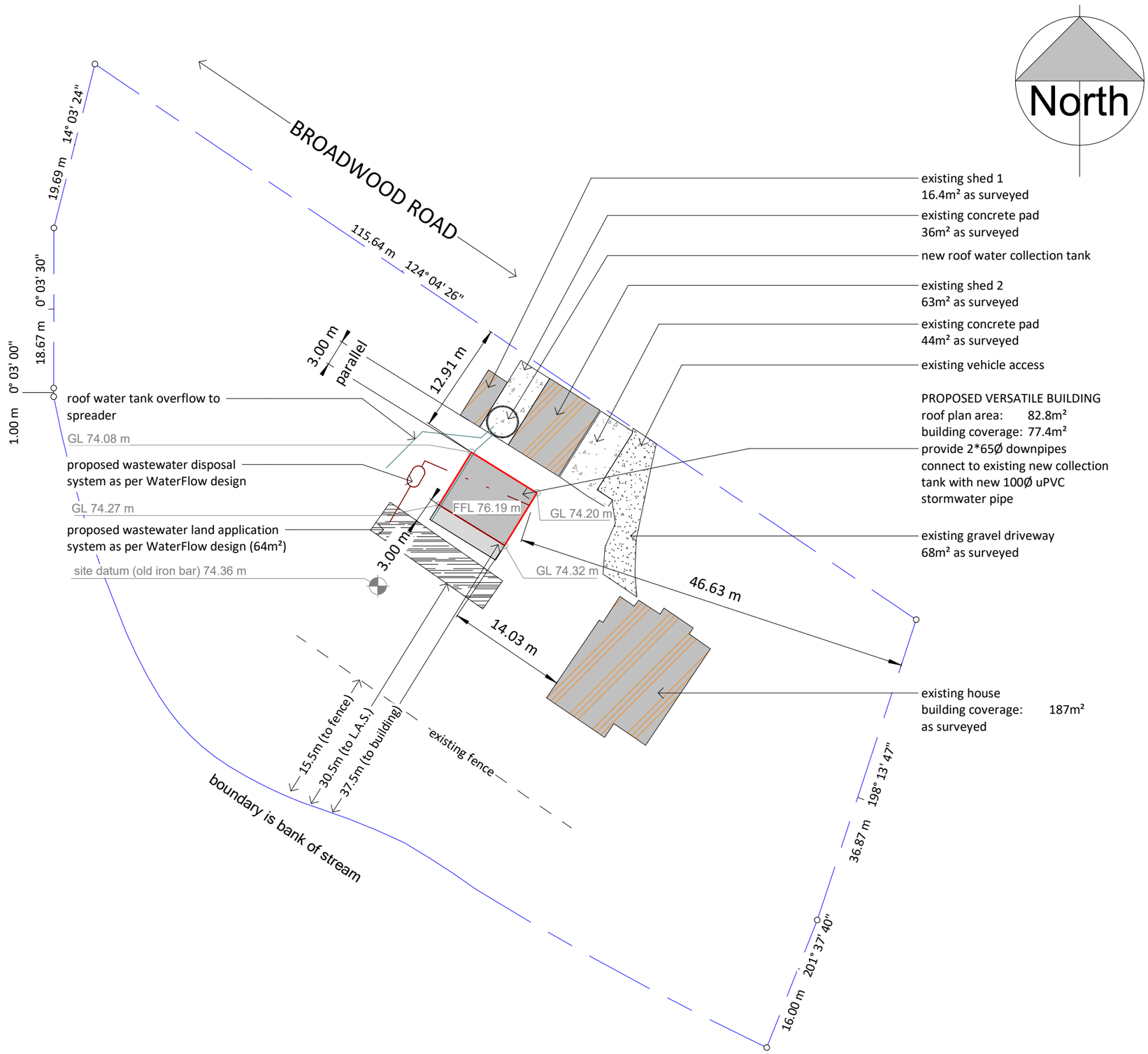
Permitted Activity maximum: 15%

Building Coverage:

Existing Building footprint:	**266.4m²**
Proposed Building footprint:	**82.8m²**
Total Building Coverage:	**349.2m² (5.9%)**

Permitted Activity maximum: 12.5%

STORMWATER DRAIN GRADIENTS:
85Ø - 1:90 minimum
100Ø - 1:120 minimum
150Ø - 1:200 minimum
(all as per Table 2 E1/AS1)



REVISIONS:
A 26.08.25 Add dimensions to stream bank, note existing fence

Versatile™	PROPOSED VERSATILE BUILDING FOR: **WAUGH** 1009 BROADWOOD ROAD, BROADWOOD	DRAWING TITLE: SITE PLAN	SCALE @ A3 1 : 500 DATE: JULY 2025 C.A.D. PROJECT #: V25667 SHEET No. **01** OF 2

STATEMENT OF DESIGN - PS1

Issued by: Matt Riddell
To: Julie Waugh
Copy to be supplied to: Far North District Council
In Respect of: Waterflow Domestic Onsite Wastewater and Sewage System Design
At: 1009 Broadwood Road, Broadwood
Legal Description: Lot 1 DP 82838

Waterflow NZ Ltd has been engaged by Julie Waugh to provide the technical design services and details in respect of the requirements of G13/VM4 and B2 Durability of the Building Code 2004, for an Onsite Wastewater and Sewage System for their building at the above location.

The Design has been carried out in accordance with Auckland Council TP-58 Guidelines and Clause B2, G13 and G14 of the Building Regulations 2004.

The proposed building work covered by this producer statement is described on the drawings titled: Julie Waugh Onsite Wastewater Design Report, and numbered 1-42 together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions: correct installation of the system and drainage fields
(ii) All proprietary products meeting their performance specification requirements;

As an independent design professional covered by a current policy for Professional Indemnity Insurance, no less than $200,000*, I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

Signed by: Matt Riddell - PS Author ‘2384’ Auckland Council, Approved Designer

Date: 22/04/2025

Signature: 

Waterflow NZ Ltd
4/525 Great South Road
Penrose, Auckland 1061

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

WaterFlow
Bringing Clarity to Wastewater

2025

Waterflow NZ Ltd
Certified Designer

Julie Waugh
1009 Broadwood Road
Broadwood
Lot 1 DP 82838

Reference Number: SO000161

Issued 22/04/2025

ONSITE WASTEWATER DESIGN REPORT

WaterFlow
Bringing Clarity to Wastewater

TABLE OF CONTENTS

Attachments

- PS1
- Land Application System Schematics
- Assessment of Environmental Effects
- System & Installation Specifications
- Home Owners Care Guide

Disclaimer

The design presented herein is based on the information available at the time of preparation and reflects the conditions known at that time.

If additional information comes to light or if there are significant changes in site conditions or circumstances, the design may no longer be valid. In such cases, the design must be reassessed and potentially revised by the designer to ensure its continued suitability.

The designer(s) disclaim any responsibility for the design's applicability or effectiveness under new or altered conditions and recommend a review before implementation if any such changes occur.

PART A: CONTACT AND PROPERTY DETAILS

A 1. Consultant / Evaluator

Name:	Alexandra Sabath
Company/Agency:	Waterflow New Zealand Ltd
Address:	1160 State Highway 12, Maungaturoto 0520
Phone:	09 431 0042
Fax:	
Email Address:	sandra@waterflow.co.nz

A 2: Applicant Details

Applicant Name:	Julie Waugh
Company Name:	
Property Owner:	Julie Waugh
Owner Address:	1009 Broadwood Road, Broadwood
Phone:	021 210 5448
Mobile:	021 210 5448
Email Address:	leah.gigger@versatile.co.nz

A 3: Site Information

Sited Visited by:	Ken Hoyle		**Date:**	Monday, 14 April 2025			
Physical Address:	1009 Broadwood Road, Broadwood						
Territorial Authority:	Far North District Council						
Regional Council:	Northland Regional Council						
Regional Rule	C.6.1.3						
Legal Status of Activity:	**Permitted:**	**x**	**Controlled:**		**Discretionary:**		
Total Property Area (m^2):	6000m^2						
Map Grid Reference:							
Legal Description of Land (as on Certificate of Title):							
Lot No:	1						
DP No:	82838						
CT No:	NA39B/688						

A 4: Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on the site?

Yes:		**No:**	**x**

If yes, give reference No's and description:

A 5: Dwelling(s) for which on-site wastewater service is to be provided

Status of dwelling(s) to be serviced:	**New**	**x**	**Existing**		**Multiple**	
How many dwellings on the property?	1					
Capacity of dwellings:	**Dwelling 1**	2 bedroom				
(or number of bedrooms)	**Dwelling 2**					
	Dwelling 3					
	Other:					
Notes:						

PART B: SITE ASSESSMENT - SURFACE EVALUATION

B 1: Site Characteristics

Performance of adjacent systems:	**(Unknown)**			
Estimated annual rainfall (mm):	1250 - 1500 **(as per NIWA statistics)**			
Seasonal variation (mm):	300-400mm			
Vegetation cover:	Grass & trees			
Slope shape:	Flat			
Slope angle:	<3 °			
Surface water drainage characteristics:	Broad overland to stream			
Flooding potential?	**Yes:**		**No:**	**x**
If Yes, specify relevant flood levels relative to disposal area:				
Site characteristics:	**1009 Broadwood Road is a rural property of 6000m2 in Broadwood with a legal description of Lot 1 Deposited Plan 82838. The property is bordered by Broadwood Road to the north, the Mangonuiowae River along the southern boundary of the property and Carmen Road to the east. The property is flat and the existing vegetation is grass and trees. There is an existing shed and residential dwelling on the property. The residential dwelling has an onsite wastewater management system installed in 2006 which will be retained.**			

B 2: Slope Stability

Has a slope stability assessment been carried out on the site?

Yes:		**No:**	**x**

If no, why not?

Low slope:	**x**	**No signs of instability:**	**x**	**Other:**

If yes, give brief details of report:

Details:	
Author:	
Company/Agency:	
Date of report:	

B 3: Site Geology

B 4: Slope Direction

What aspect does the proposed disposal system face?

North	x	West	
North-West		South-West	
North-East		South-East	
East		South	

B 5: Site Clearances if applicable (also on site plan)

	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries:	>1.5	>1.5
Surface Water:	>20	>20
Ground Water:	>1.2	>1.2
Stands of Trees / Shrubs:	n/a	n/a
Wells/Water Bores:	>20	>20
Embankments / Retaining Walls:	>3	>3
Buildings:	>3	>3
Other:		

B 6: Please identify any site constraints applicable for this property, and indicate how the design process is to deal with these.

Constraints	Explain how constraints are being dealt with
1 Site constraints:	n/a

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PART C: SITE ASSESSMENT - SOIL INVESTIGATION

C 1: Soil Profile Determination Method

Test pit:		Depth (mm):		No. of Test pits:	
Bore hole:	x	Depth (mm):	1200	No. of Bore holes	2
Other:					

C 2: Fill Material

Was fill material intercepted during the subsoil investigation?

Yes:		No:	x

If yes, please specify the effect of the fill on wastewater disposal:

C 3: Permeability Testing

Has constant head Permeability Testing (Ksat) been carried out?

Yes:		No:	x

If yes, please indicate the details (test procedure, number of tests):

Test report attached?

Yes:		No:	x

C 4: SURFACE WATER CUT OFF DRAINS

Are surface water interception/diversion drains required?

Yes:	x	No:	

C 5: DEPTH OF SEASONAL WATER TABLE:

Winter (m):	>1.2
Summer (m):	>1.2

Was this:

Measured:	✓ no sign of ground water or mottling in bore holes
Estimated:	

C 6: SHORT CIRCUITS

Are there any potential short circuit paths?

Yes:		No:	x

If yes, how have these been addressed?

C 7: SOIL CATEGORY

Is topsoil present?

Yes:	x	**No:**	

If yes, what is the topsoil depth & soil description?

400mm silty loam topsoil over a silty loam

Indicate the disposal field soil category (as per AC TP-58, Table 5.1)

Category	Description	Drainage	(x)
1	Gravel, coarse sand	Rapid draining	
2	Coarse to medium sand	Free draining	
3	Medium-fine & loamy sand	Good draining	
4	Sandy loam, loam & silt loam	Moderate draining	x
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow draining	
6	Sandy clay, non-swelling clay & silty clay	Slow draining	
7	Swelling clay, grey clay & hardpan	Poorly or non-draining	

Reason for placing in stated category:

Result of bore hole/test pit sample	x
Profile from excavation	
Geotech report	
Other:	

C 8: SOIL STRUCTURE

Based on results of the in-situ soil profile investigation above (C7) please indicate the disposal (land application) field soil structure:

Massive	
Single grained	
Weak	x
Moderate	
Strong	

C 9: As necessary, provide qualifying notes on the relationship of Soil Category (C7) to Soil Structure (C8) and the effect this relationship will have on design loading rate selection:

PART D: DISCHARGE DETAILS

D 1: Water supply source for the property:

Rain water (roof collection)	x
Bore/well	
Public supply	

D 2: Are water reduction fixtures being used?

Yes:		No:	x	(according to our knowledge at time of design report)

If 'yes' Please state:

Standard Fixtures include dual flush 11/5.5 or 6/3 litre toilet cisterns, and includes standard automatic washing machine, but a low water use dishwasher, no garbage grinder.

D 3: Daily volume of wastewater to be discharged:

No. of bedrooms/people:	1:	2 Bedroom
	2:	
	3:	
Design occupance (people):	1:	4 People
(as per AC TP-58, Table 6.1)	2:	
	3:	
		Black / Grey water
Per capita wastewater production (litres/person/day):	1:	160 L/day
(as per ARC TP-58, Table 6.2)	2:	
	3:	
Total daily wastewater production (litres per day):		640 L/day

D 4: Is daily wastewater discharge volume more than 2000 litres?

Yes:		No:	x

D 5: Gross lot area to discharge ratio:

Gross lot area:	6000 m²
Total daily wastewater production (litres/day):	640 L
Lot area to discharge ratio:	9.38

D 6: Net Lot Area

Area of lot available for installation of the disposal (land application) field and reserve area:

Net lot area (m²):	5000 m²	
Reserve area (m²):	100%	64m²

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PART E: LAND DISPOSAL METHOD

E 1: Indicate the proposed loading method:

	Black / Grey Water
Trickle Fed:	x
Dosing Siphon:	
Pump:	

E 2: If a pump is being used please provide following information:

Total Design Head (m):	
Pump Chamber Volume (litres):	
Emergency Storage Volume (litres):	

Is a high water level alarm being installed in pump chambers?

Yes:		**No:**	**x**

E 3: Identify the type(s) of Land Disposal method proposed for this site:

	Black / Grey Water
P.C.D.I. Dripper Irrigation:	
L.P.E.D. System:	
Evapo-Transpiration Beds:	ETS Beds
Other:	
	(as per Schematics attached)

E 4: Identify the Loading Rate proposed for option selected in E3:

as per ARC TP-58, Table 9.2 & Table 10.3	**Black / Grey Water**
Loading Rate (litres/m²/day):	10
Disposal Area Basal (m²):	64
Areal (m²):	N/A

E 6: Details and dimensions of the disposal (land application) field:

Length (m):	16.0	**No. ETS Beds**	1	**Hole Size:**	16.0
Width (m):	4.0	**Spacing (m):**	N/A	**Hole Spacing:**	500.0

Notes:	**Conventional ETS beds laid on level contour. To be protected from stock and vehicle movements, as per schematic drawing attached. See schematic drawing attached.**

PART F: PROPOSED WASTEWATER TREATMENT SYSTEM

A Waterflow DCST4500 System, fed through ETS Beds is suitable for this site. The DCST4500 System has enough capacity to accommodate 2000ltr per day, so will be well within its capacity. The land application system is designed to discharge a maximum volume of 640ltrs per day and if this is exceeded it could cause failure resulting in environmental and public harm.

PART G: OPERATION AND MAINTENANCE OF SYSTEM

The operation of this complete system will be explained verbally to the owner by the Installer or Agent on Completion of Installation; also provided with Waterflow's Home Owner's Manual.

Waterflow NZ Ltd encourages the Home Owner to monitor and care for your Waterflow system yourself, with our backing and support, and by doing so you will learn how your system works and operates and how to keep it in top working order.

It is also recommended that a Maintenance Program contract is in place at all times to ensure this system is maintained at top performance at all times.

All on site wastewater systems require regular maintenance; in this case once annually is suffice and may be specified within the consent process by the Building Department of Far North District Council. This Maintenance will be recorded on hard copy and supplied to both the Owner and Far North District Council Compliance Officer if requested.

NOTE TO OWNER: All written records pertaining to the wastewater system should be retained in a safe place. When a change of ownership occurs, a full and complete history is able to be passed to the new owners.

Animals are to be physically excluded from the installed effluent field to avoid damage, and to reduce the risk of soil compaction in the vicinity of the bed.

Planting within this area is encouraged to assist with evapotranspiration by plants.

PART H: SOIL LOG PROFILE

400mm silty loam topsoil over a silty loam. Soil Category 4, (as per AC TP-58, Table 5.1)

PART I: SITE IMAGES

DECLARATION

I, hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Prepared By:	
Name:	**Alexandra Sabath - Approved Designer**
Signature:	
Date:	22/04/2025

Reviewed By:	
Name:	**Matt Riddell - PS Author '2384' Auckland Council, Approved Designer**
Signature:	
Date:	22/04/2025

NOTE: The Waterflow Systems are to be installed by a registered drainlayer to the designs supplied by Waterflow NZ Ltd. All work to comply with Regional Council Water and Soil Plans.

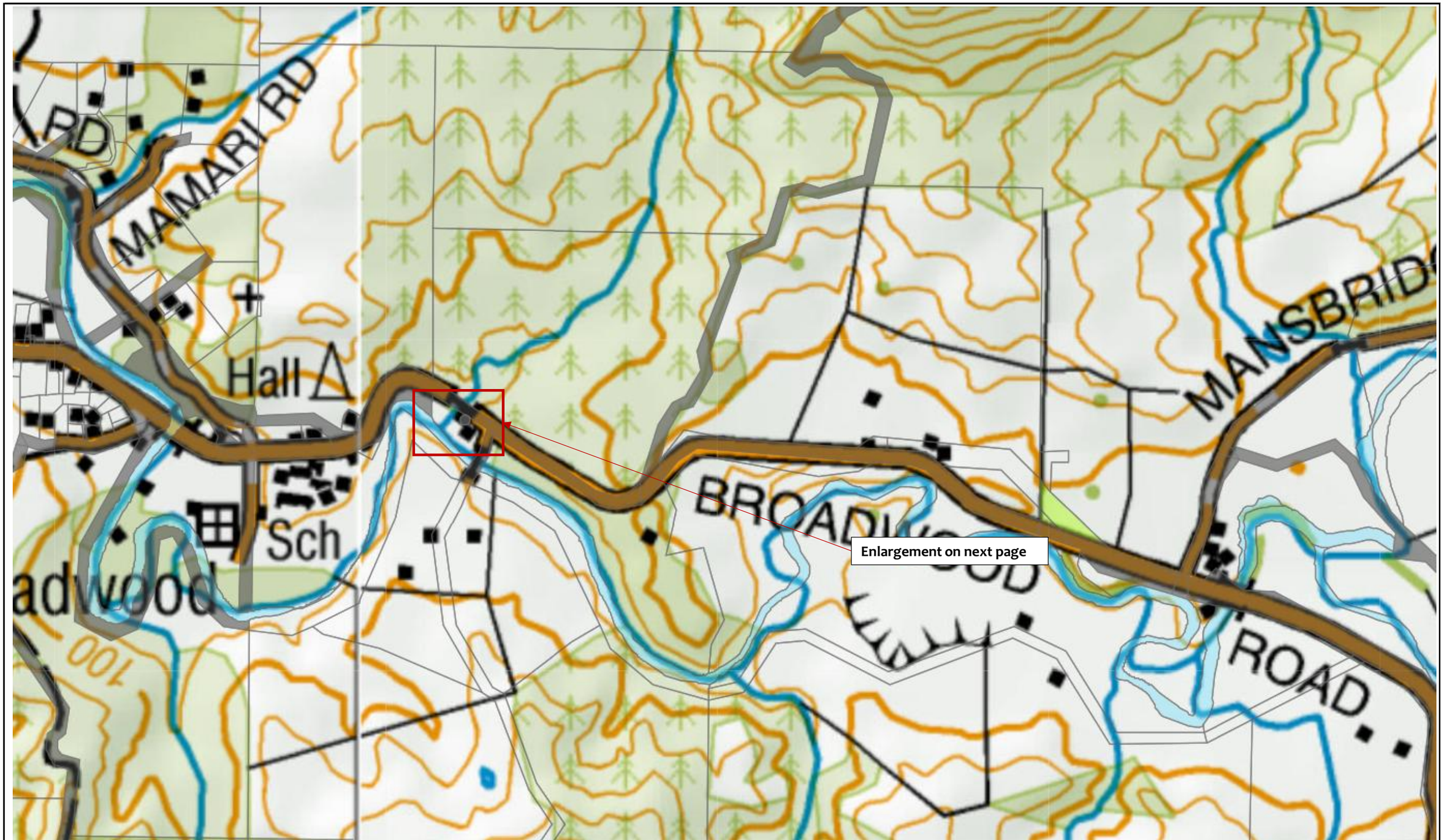
Comments/Summary:

The disposal field will need to be protected from traffic and animal grazing. Planting this area is recommended to increase Evapotranspiration.

Suitable plants for the disposal field can be found on our website www.naturalflow.co.nz

Waterflow Treatment systems to be installed by accredited installer unless other arrangements have been made by Waterflow NZ Ltd

For more information do not hesitate to contact the team at Waterflow NZ Ltd on 0800 628 356



N

WaterFlow
Bringing Clarity to Wastewater

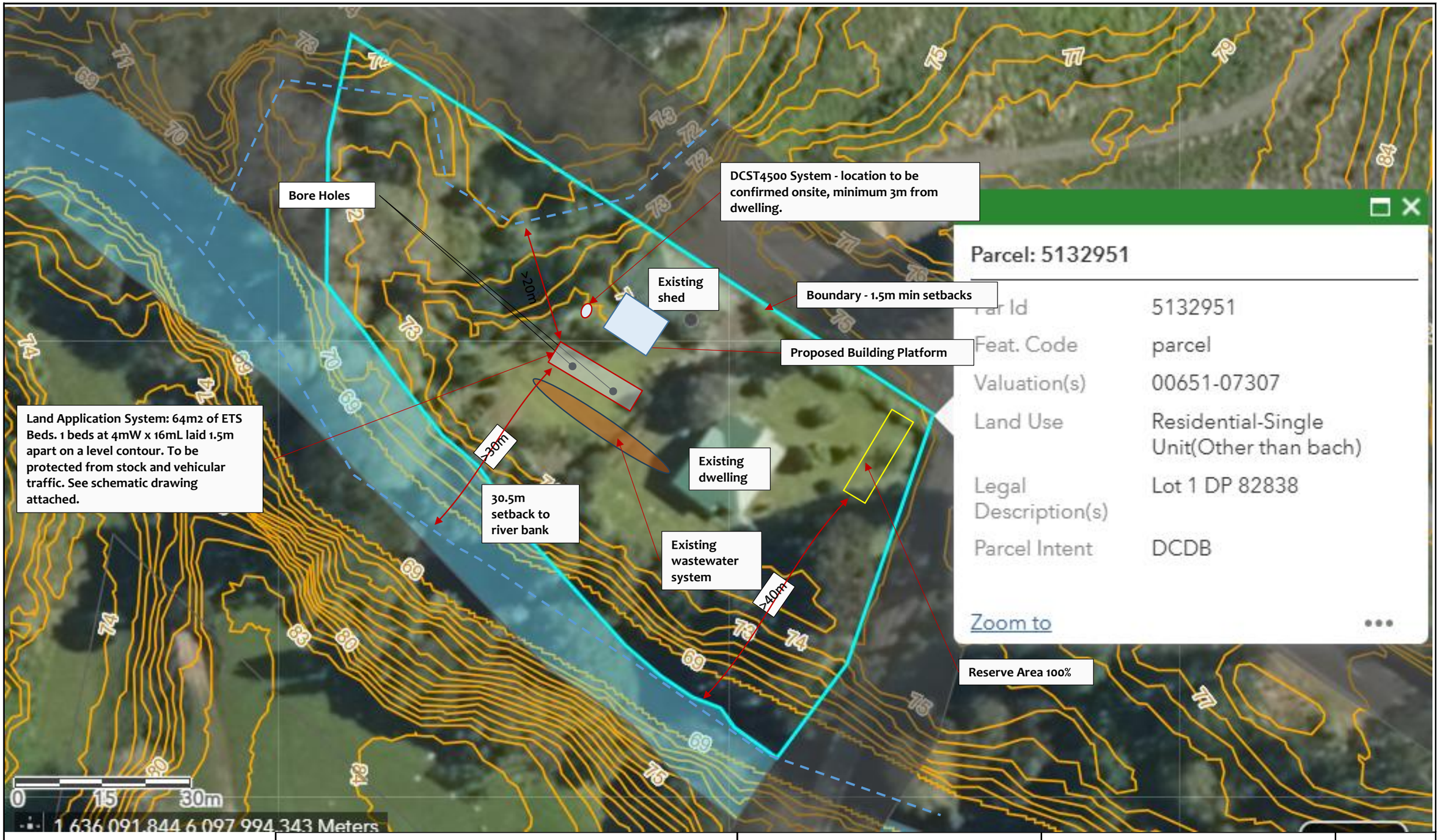
SITE LOCATION PLAN:

Julie Waugh
1009 Broadwood Road
Broadwood
Lot 1DP 82838
0.6HA

SCALE:

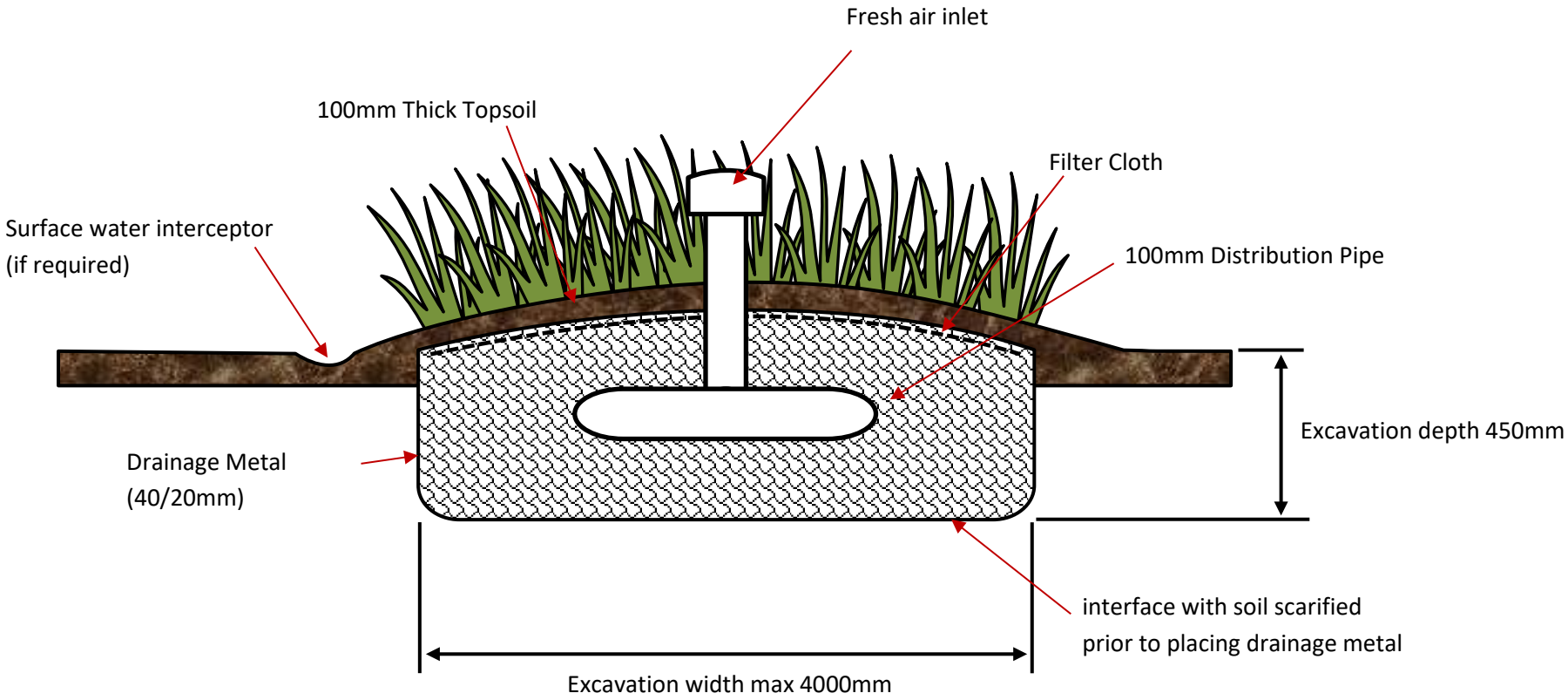
1 : 7243

@ A3



N	WaterFlow Bringing Clarity to Wastewater	**DATE DRAW:** 22/04/2025 **PREPARED BY:** Leah Gigger **REVISED:** Matt Riddell	**SITE LAYOUT PLAN:** **Julie Waugh** **1009 Broadwood Road** **Broadwood** **Lot 1 DP 82838** **0.6HA**	**SCALE:** **1 : 634** **@ A3**

ETS (EVAPOTRANSPIRATION SEEPAGE) CONTOUR BEDS

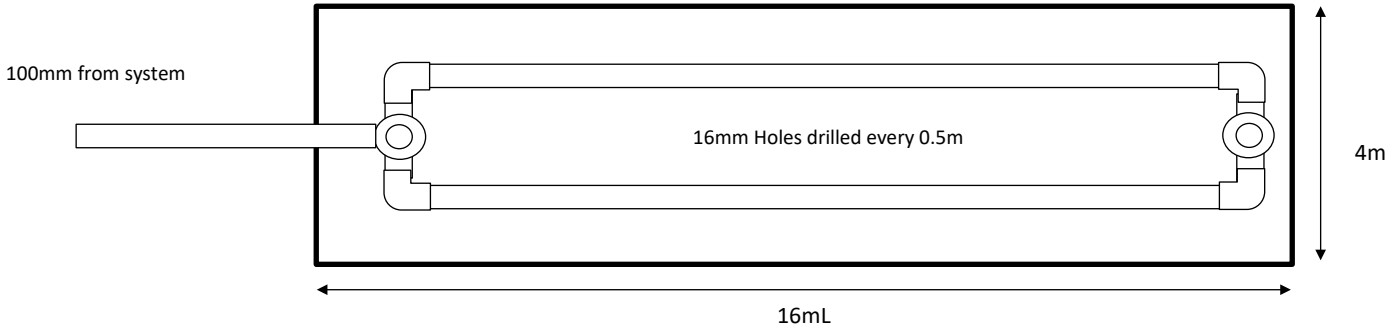


The standard width for ETS beds is from 750 – 1500mm, but 1800mm up to 3000mm maximum can be utilised provided crowing to shed rainfall is increased accordingly. Contour ETS beds of 450mm to 750mm width can be used on sloping sites.

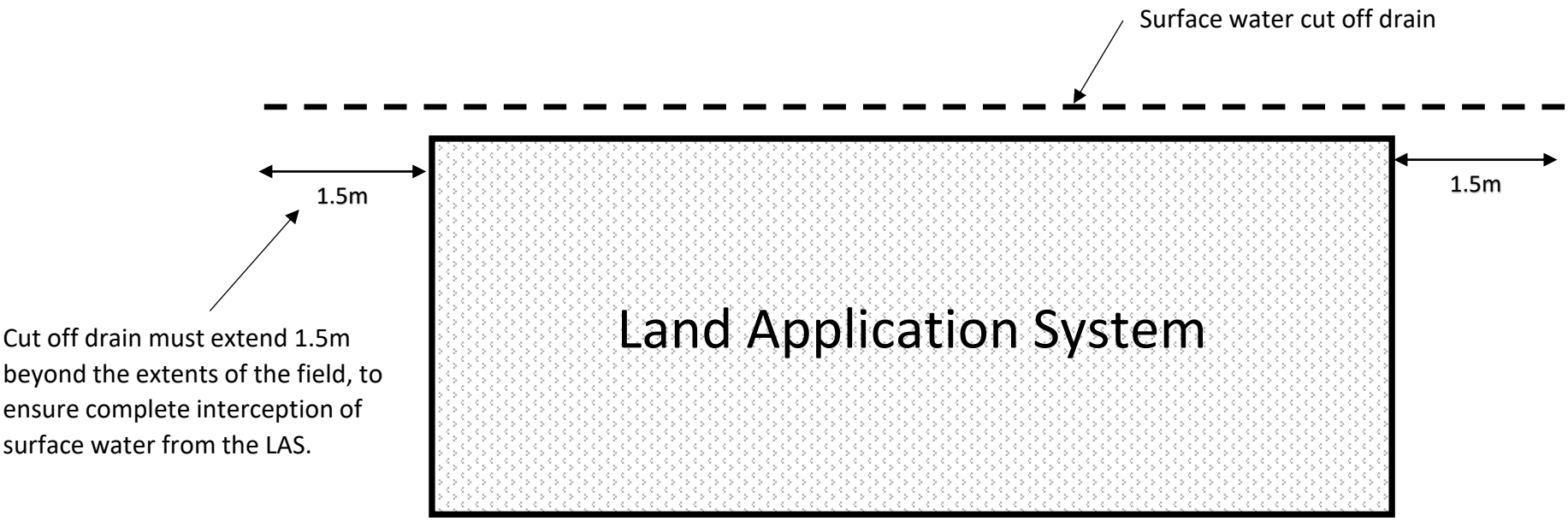
ETS (EVAPOTRANSPIRATION SEEPAGE) CONTOUR BEDS

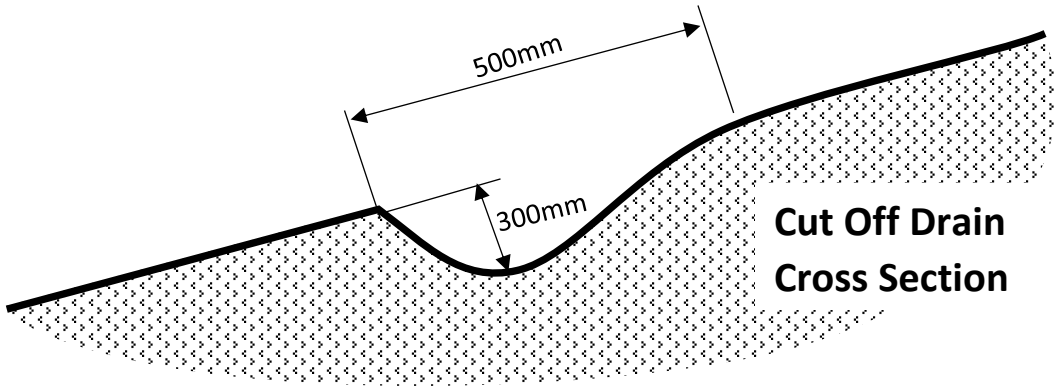
WaterFlow
Bringing Clarity to Wastewater

Top Elevation



Surface Water Cut Off Drain Schematic





Assessment of Environmental Effects

Julie Waugh of 1009 Broadwood Road, Broadwood
Lot 1 DP 82838

1.1 Description of Proposal

The owners of this site propose the construction of a new 2 bedroom dwelling. The new minor dwelling will have a new onsite wastewater management system as detailed by this report. The existing dwelling will retain its own onsite wastewater management system which was installed in 2006.

1.2 Site Description

1009 Broadwood Road is a rural property of 6000m2 in Broadwood with a legal description of Lot 1 Deposited Plan 82838. The property is bordered by Broadwood Road to the north, the Mangonuiowae River along the southern boundary of the property and Carmen Road to the east. The property is flat and the existing vegetation is grass and trees. There is an existing shed and residential dwelling on the property.

1.3 Wastewater Volume

In calculating the wastewater flows we have allowed for a maximum occupancy of 4 persons, based on the proposed 2 bedroom dwelling (as per AC TP-58, Table 6.1). Total wastewater production is based on an allowance of 160 litres per person per day (as per ARC TP-58, Table 6.2), which is conservative given that water supply is roof collected rain water and standard water fixtures will be used throughout the house.

1.4 Wastewater Volume

The DCST4500 system that is proposed will treat the wastewater to a high standard prior to dispersal using a LPED dispersal system into a purpose-designed ETS bed system, where the removal of nutrient will continue, both in the receiving soils and by plant uptake.

The system will be capable of producing reductions in Biochemical Oxygen Demand, Total Suspended Solids, Nitrogen, and Coliforms to a standard that meets the requirements (see details below). The system will cater for the wastewater requirements of the private dwellings (domestic wastewater) and will not service any commercial or trade waste sources. Risk Minor to Nil.

1.5 Proposed Treatment System

The objective of the treatment system is to reduce and remove much of the contaminants from the wastewater prior to discharge into the receiving soil. This will improve the long-term performance of the disposal field as well as reducing the risk to the receiving environment. The system will consist of:

- DCST4500
- Reln Outlet Filter
- Land Application System

The system is constructed using concrete tank. The system produces treated effluent with BOD <150mg/l, Suspended solids <40mg/l.

1.6 Land Application System

The proposed land application system uses a LPED dispersal system into ETS beds, to disperse the treated wastewater into the receiving soils and dense planting is required to enhance evapo-transpiration. This land application system will be installed in conjunction with existing and proposed landscaping as detailed on the site plan.

1.7 Surface & Ground Water

It is proposed to treat the water to a high standard prior to discharge and the proposed irrigation system will introduce the water into the topsoil horizon using ETS Beds. A low application rate of treated effluent into the topsoil will significantly reduce the likelihood of, any breakout or runoff or any risk of surface water contamination. With the ground water levels being >1.2m this conservative DLR also means the risk of ground water contamination is virtually nil. A majority of the undeveloped areas of this site are suitable for a ETS Beds when the necessary setbacks are observed. Risk Minor to Nil.

1.8 Air Quality

The proposed DCST4500 system will produce no noticeable odour when functioning correctly. Any odour will be contained within the tanks. The land application system will load the soil at a rate that should not cause ponding, spraying or aerosol of the effluent that could potentially cause odours. Risk Minor to Nil.

1.9 Visual Impact

The tanks are installed wholly below ground level with only the lids being visible. The lids will protrude approximately 100mm to prevent egress of storm water into the system. The disposal field will be located in a purpose designed mulched and intensively planted disposal area. Warning signs may be installed to indicate the presence of the disposal area, although probably not necessary in a domestic situation, also the area may be fenced to restrict access.

1.10 Environmental Risks

Risks are associated with this proposal are minor. The treatment system will be automated, and the Home Owner will be given a 'Home Owners Care Guide' which explains the necessary visual checks to ensure no issues arise with the system, specifically – solids build-up - high water level – discharge failure – filter blockage.

Peak flow into the system are not expected to be significant and the system includes a large emergency storage volume.

1.11 Maintenance Requirements

The maintenance requirement of this system is minimal, with the system fully automated. The system requires little input from the operator apart from the regular visual checks of the treatment system and land application system. All other maintenance interventions must be carried out by service persons familiar with the operation of the system and approved by the manufacturer. Maintenance may include checking of the dissolved oxygen levels, cleaning of effluent outlet filter, removal of excess sludge volume, checking of control panel function, etc.…

The owners will be verbally informed at the commissioning of this system of all maintenance requirements and strongly advised to have a service contract in place prior to final sign off of the system installation.

WaterFlow

Bringing Clarity to Wastewater

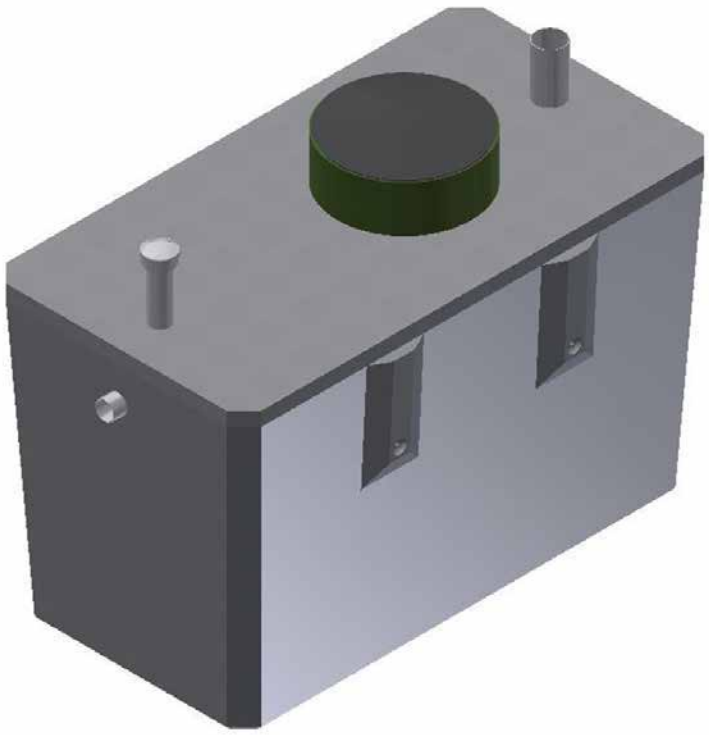
Dual Chamber Septic Tank 4500L

System Specificatons & Installation Instructions

WF-SE-4500L-Spec and Install-241011

Duel Chamber Septic Tank 4500L

System Specificatons & Installation Instructions



Compliance Requirements

All Waterflow Septic Tanks and Treatment Modules meet the requirements of the New Zealand Building Code G13-VM4, Clause B1 - Structure, and Clause B2 Durability. As stated in the AS/NZS 1546.1:2008 Standard, 1.5.2.1, all septic tanks constructed to this Standard meet the requirements of the New Zealand Building Code for Clause B1 - Structure and Clause B2 Durability.

The design and specifications of the septic tank are fully compliant with the AS/NZS1546.1:2008 Standard, including but not limited to:

Structural Integrity: The tank is designed using Polymer suitable for the manufacturing method as per 9.4.1 AS/NZS1546.1:2008, with all exposed lids being UV protected, with appropriate foot anchors and reinforcement, ensuring it meets the structural requirements specified in the standard.
Material Specifications: All materials used, including the Polymer composition, comply with the necessary standards for durability and suitability in septic tank applications.
Capacity and Dimensions: The tank's dimensions and baffle placements align with the standard's guidelines, ensuring proper functionality and waste management.
Access and Maintenance Provisions: The design includes provisions for easy access, necessary for regular inspection, cleaning, and maintenance in accordance with the standard.

Please feel free to ask for a copy of this complete document, if required.

Duel Chamber Septic Tank 4500L

System Specificatons & Installation Instructions

Treatment Process

The Dual Chamber Septic Tank comprises of a 2700mm long by 1500mm wide concrete tank, standing 1685mm high. Following the septic tank is a Dose Chamber that controls the discharge; both gravity dose and pump dose options are available.

The wastewater is directed into the first chamber. Here the solids are separated from the liquid through settling and floatation; long term testing has shown this to remove 60-80% of solids, which are then stored in the tank. The liquid from the clear zone then flows into the second chamber where further settling and floatation takes place. Anaerobic digestion further processes the waste producing odoriferous gases and humus, reducing the BOD. This finally passed through an outlet filter as per AS/NZS 1546 1:2008 Clause D3.3.1; which screens the effluent, reducing TSS.

It is then disposed of via a gravity or pump dose into the receiving environment, in accordance with AS/NZS 1547:2012 and the relevant local authority's requirements. The size and extent of the disposal system is determined by the receiving environment and the expected flow volumes. Factors such as soil types, slope and the proximity of potentially sensitive environments such as creeks, wells, bores and other water ways determine the extent, location and type of disposal system chosen.

The Dual Chamber Septic Tank has a 2000ltr reserve capacity to allow for 24hrs emergency storage should a pump fail. The operating capacity of the Dual Chamber Septic Tank is 2000ltrs per day. Reserve capacity is not required for gravity discharge systems.

The Dual Chamber Septic Tank will accumulate solids require regular desludging. Septic tank capacities are calculated up to a 5 year pump out cycle, as per AS/NZS 1547:2012 5.4.2.2.1 as to desludging requirements. It is recommended to service at no longer than 3 years from previous inspection.

Duel Chamber Septic Tank 4500L

System Specificatons & Installation Instructions

Duel Chamber Septic Tank Specifications

Tanks are made of Concrete which is suitable material for wastewater treatment containment meeting all the requirements of Section 4.3.3 of AS/NZS 1547:2012 which cross references the structural performance requirements of its section 2.4.2.3 back to the relevant provisions of AS/NZS 1546.1, which for plastic septic tanks constructed via by rotational molding using thermoplastics (polyethylene) are set out in Section 9 of that Standard. These tanks have an expected lifespan of 50 years.

Dual Chamber Septic Tank

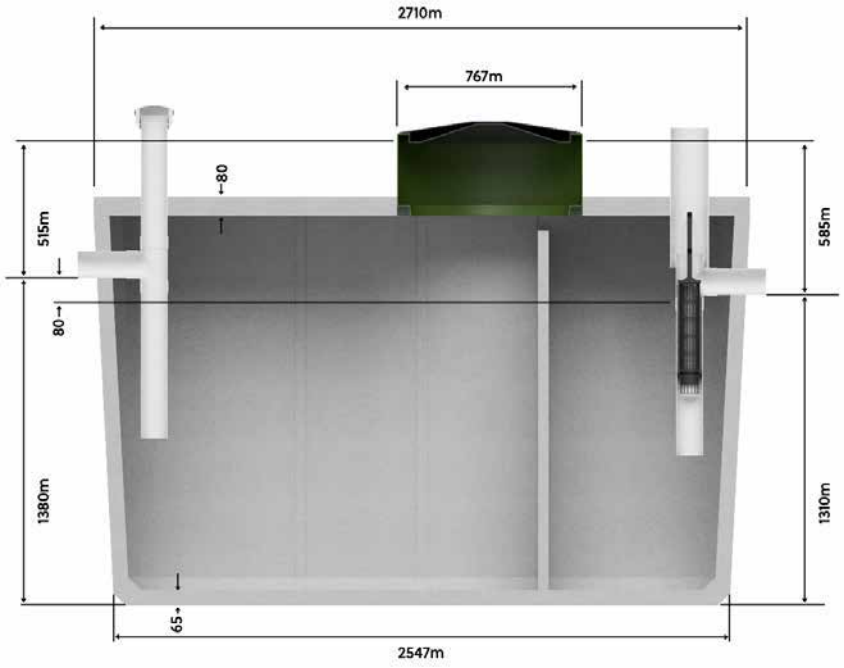
4500ltrs Nominal capacity
2700mm Length
1450mm Width
1895mm O/A height

Gravity Dose Chamber option

500ltrs Nominal capacity
750mm Diameter
1100mm O/A height

Pump Dose Chamber option

1600ltrs Nominal capacity
1300mm Diameter
2100mm O/A height

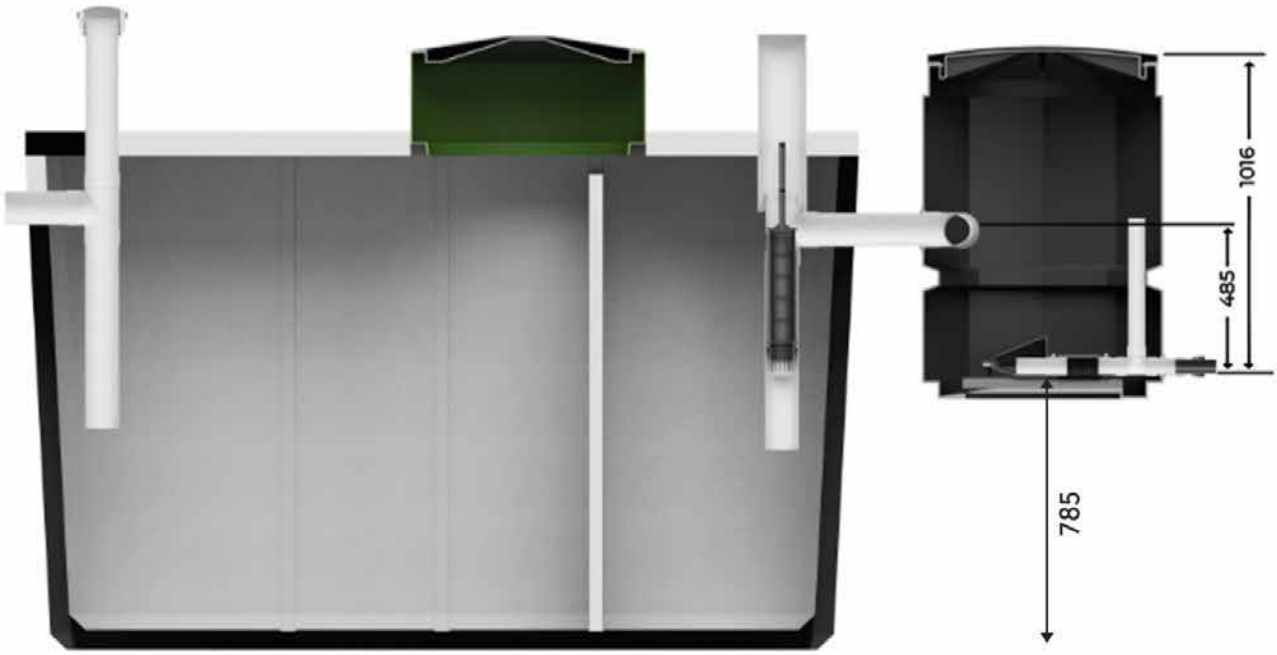


weight: 3200kg

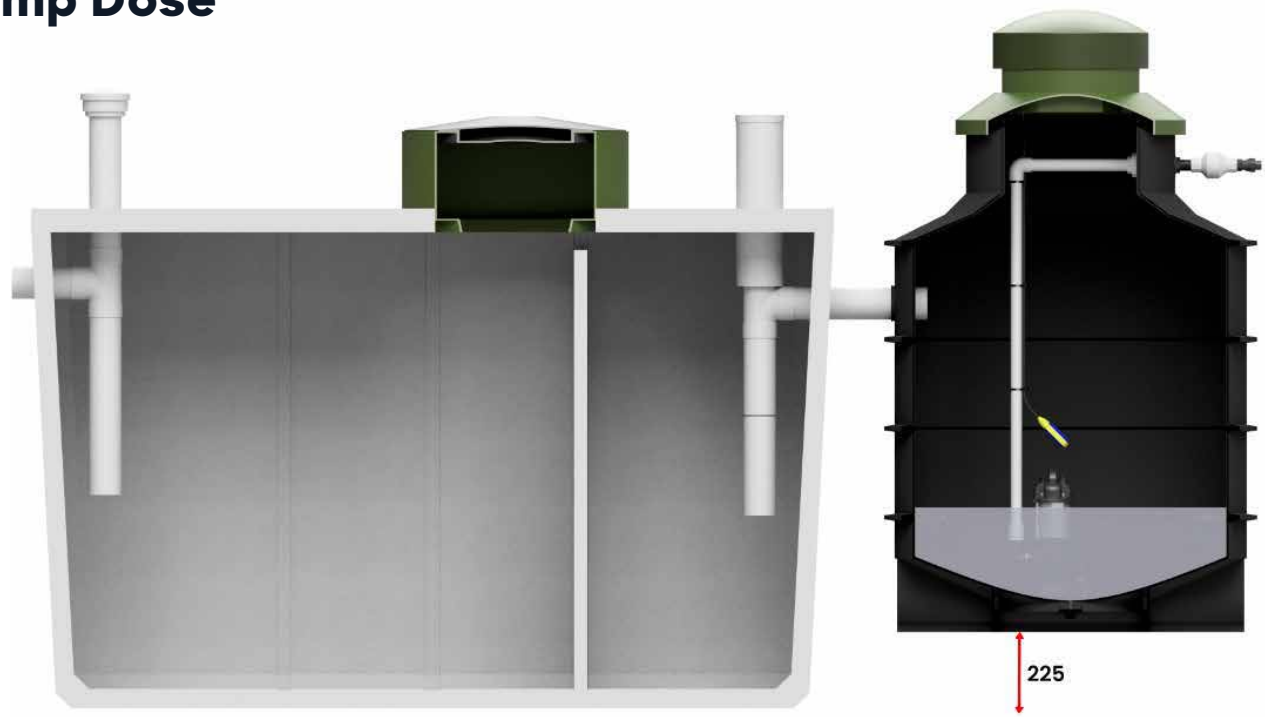
Duel Chamber Septic Tank 4500L

Instructions for Installation

Gravity Dose



Pump Dose



Duel Chamber Septic Tank 4500L

Instructions for Installation

The Dual Chamber Septic Tank is to be installed or signed off by a registered Drain layer to the design specified by Waterflow NZ Ltd. The following installation instructions and procedures followed correctly will ensure System performance is not compromised in any way.

1. Excavate a 3m x 1.5m level platform for the tank at the appropriate depth to ensure adequate fall for inlet pipe from the source. This has to be installed in stable soil conditions.

2. Lay 100mm of bedding metal on platform and place Septic Tank.

3. Trench from septic tank outlet to disposal field (if gravity discharge, ensure there is a constant fall from outlet to disposal field).

4. Where possible excavate a trench away from System and lay drain coil and drainage metal at the base of the system to drain away any surface or ground water. On a flat or high water table site System must be bedded in as per appendix A below.

5. Take a minimum of 3 photos at this point to showing connections and back fill, to ensure correct installation for sign off.

6. Back fill around tanks with the excavated soil (be aware this will settle over time - to avoid settlement, backfill with aggregate).

Caution: System must be protected from excessive super imposed loads both lateral and top loads. E.g. loads from vehicular traffic. There needs to be at least 2m of clearance maintained around system.

Appendix A | High Water Table

For installation in high water table areas, make sure you have a pump to pump away ground water whilst installing. Excavate a pump cavity to one side of the platform and pump ground water away during entire installation process. Fill Septic Tank with water during installation, this will help with resisting the hydraulic uplift.

Duel Chamber Septic Tank 4500L

System Specificatons & Installation Instructions

Installation Location and Certification

These tanks are not designed for vehicle loads and shall be located no closer than 1.50m to a driveway, road frontage or a building. If for any reason the tank is located where vehicle traffic may drive over the tank or approach closer than 1.50m, or where it may be trampled on by farm stock then the tank should be protected by a concrete slab designed to support these loads. Surface water must also be diverted from flowing into the installation.

Installation must be in accord with AS/NZS 1547:2012 Standard and G13 of Building Code. Final producer statement certificate to be issued and held by the regulatory authority.

High Water Table Installations

All tanks have been engineered and constructed from injection molded plastic for maximum strength, in accordance with the NZC 3604. Clauses B1 and B2 for structure and durability, to withstand any hydraulic pressures, both lateral and uplift, created by high water table conditions.

Plumbing Pipes and Fittings

All internal plumbing is done with PVC pipes with appropriate connections according to AS/NZS 1260 and AS/NZS 4130.

Backfilling and Bedding

Place and bed to NZBC G13/AS2, using compacted granular metal, in layers not exceeding 100mm. Backfill with soil excavated from the hole.

Electrical

Where a pump is required to dose the Land Application System, all electrical connections must be installed according to AS/NZS 3000. The electrical connections are housed in an enclosure on the top of the tank. Please see separate Electrical Guide for more details.

Duel Chamber Septic Tank 4500L

System Specificatons & Installation Instructions

Warranty

WATERFLOW NZ LTD warrants that all Treatment Systems manufactured by WaterFlow NZ Ltd will be free from defects in materials and workmanship for the following periods from the date of installation, under the following conditions:

1. Plastic-Moulded tanks: 15 years

2. Concrete Tanks: 15 years

3. Filter Media: 5 years

4. Dosing float: 2 years

5. Electrical Components and Pump: 2 years

WATERFLOW NZ LTD will, at its discretion, repair or replace any defective components with the same or equivalent part at no charge to the consumer, in accordance with the following terms and conditions laid out in the WaterFlow NZ's Warranty Certificate. Full text warranty available on request.

1st June 2014
Dean Hoyle
Managing Director

WaterFlow

Bringing Clarity to Wastewater

Our team of wastewater experts are here to help.
Let's see if DCST- 4500L could be right for your backyard.

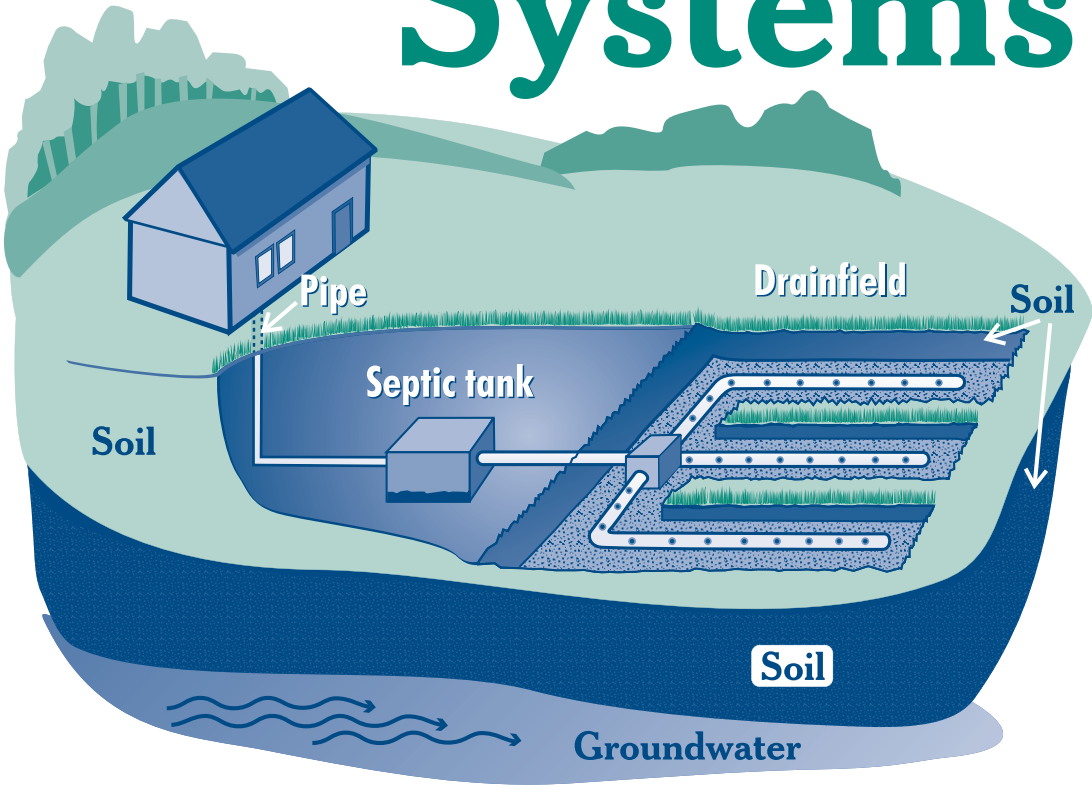
Smarter wastewater and sewage systems, for a cleaner New Zealand.

0800 628 356
www.waterflow.co.nz
sales@waterflow.co.nz

WF-SE-4500L-Spec and Install-241011

EPA
United States
Environmental Protection
Agency

A Homeowner's Guide to Septic Systems



What's Inside

Your Septic System is your responsibility!

Did you know that as a homeowner you're responsible for maintaining your septic system? Did you know that maintaining your septic system protects your investment in your home? Did you know that you should periodically inspect your system and pump out your septic tank?

If properly designed, constructed and maintained, your septic system can provide long-term, effective treatment of household wastewater. If your septic system isn't maintained, you might need to replace it, costing you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. And if you sell your home, your septic system must be in good working order.

Top Four Things You Can Do to Protect Your Septic System

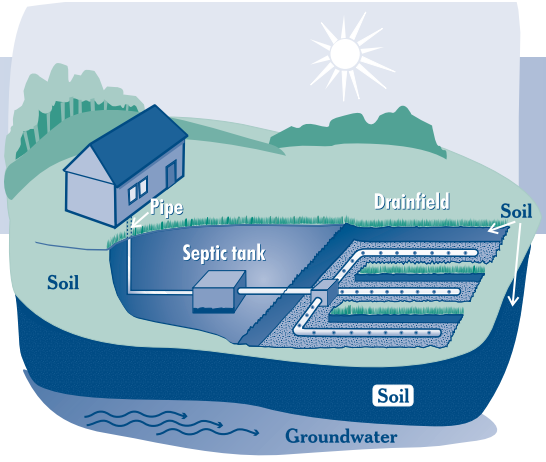
1. **Regularly inspect your system and pump your tank as necessary.**
2. **Use water efficiently.**
3. **Don't dispose of household hazardous wastes in sinks or toilets.**
4. **Care for your drainfield.**

This guide will help you care for your septic system. It will help you understand how your system works and what steps you can take as a homeowner to ensure your system will work properly. To help you learn more, consult the resources listed at the back of this booklet.

How does it work?

Components

A typical septic system has four main components: a pipe from the home, a septic tank, a drainfield, and the soil. Microbes in the soil digest or remove most contaminants from wastewater before it eventually reaches groundwater.



Typical septic system

Septic system aliases:

- **On-lot system**
- **Onsite system**
- **Individual sewage disposal system**
- **Onsite sewage disposal system**
- **Onsite wastewater treatment system**

Pipe from the home

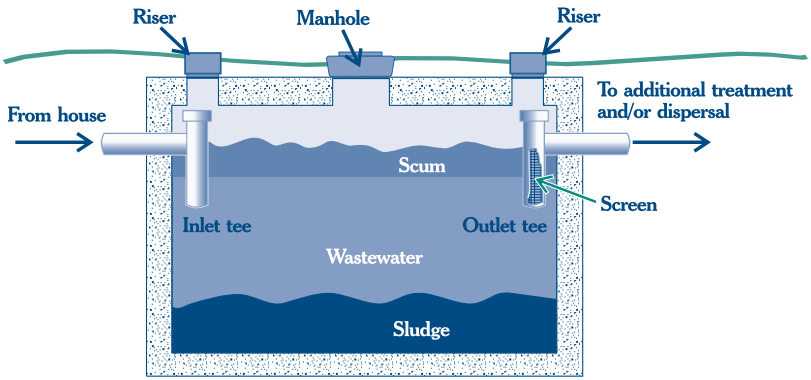
All of your household wastewater exits your home through a pipe to the septic tank.

Septic tank

The septic tank is a buried, watertight container typically made of concrete, fiberglass, or polyethylene. It holds the wastewater long enough to allow solids to settle out (forming sludge) and oil and grease to float to the surface (as scum). It also allows partial decomposition of the solid materials. Compartments and a T-shaped outlet in the septic tank prevent the sludge and scum from leaving the tank and traveling into the drainfield area. Screens are also recommended to keep solids from entering the drainfield.

Newer tanks generally have risers with lids at the ground surface to allow easy location, inspection, and pumping of the tank.

Typical single-compartment septic tank with ground-level inspection risers and screen

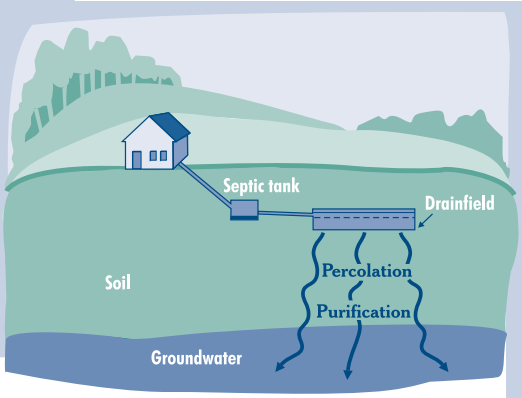


Tip

To prevent buildup, sludge and floating scum need to be removed through periodic pumping of the septic tank. Regular inspections and pumping are the best and cheapest way to keep your septic system in good working order.

Finding Your System

Your septic tank, drainfield, and reserve drainfield should be clearly designated on the "as-built" drawing for your home. (An "as-built" drawing is a line drawing that accurately portrays the buildings on your property and is usually filed in your local land records.) You might also see lids or manhole covers for your septic tank. Older tanks are often hard to find because there are no visible parts. An inspector/pumper can help you locate your septic system if your septic tank has no risers.



Drainfield

The wastewater exits the septic tank and is discharged into the drainfield for further treatment by the soil. The partially treated wastewater is pushed along into the drainfield for further treatment every time new wastewater enters the tank.

If the drainfield is overloaded with too much liquid, it will flood, causing sewage to flow to the ground surface or create backups in plumbing fixtures and prevent treatment of all wastewater.

A reserve drainfield, required by many states, is an area on your property suitable for a new drainfield system if your current drainfield fails. Treat this area with the same care as your septic system.

Soil

Septic tank wastewater flows to the drainfield, where it percolates into the soil, which provides final treatment by removing harmful bacteria, viruses, and nutrients. Suitable soil is necessary for successful wastewater treatment.

Alternative systems

Because many areas don't have soils suitable for typical septic systems, you might have or need an alternative system. You might also have or need an alternative system if there are too many typical septic systems in one area or the systems are too close to groundwater or surface waters. Alternative septic

systems use new technology to improve treatment processes and might need special care and maintenance. Some alternative systems use sand, peat, or plastic media instead of soil to promote wastewater treatment. Other systems might use wetlands, lagoons, aerators, or disinfection devices. Float switches, pumps, and other electrical or mechanical components are often used in alternative systems. Alternative systems should be inspected annually. Check with your local health department or installer for more information on operation and maintenance needs if you have or need an alternative system.

Why should I maintain my septic system?

When septic systems are properly designed, constructed, and maintained, they effectively reduce or eliminate most human health or environmental threats posed by pollutants in household wastewater. However, they require regular maintenance or they can fail. Septic systems need to be monitored to ensure that they work properly throughout their service lives.

Saving money

A key reason to maintain your septic system is to save money! Failing septic systems are expensive to repair or replace, and poor maintenance is often the culprit. Having your septic system inspected regularly is a bargain when you consider the cost of replacing the entire system. Your system will need pumping depending on how many people live in the house and the size of the system. An unusable septic system or one in disrepair will lower your property value and could pose a legal liability.

Protecting health and the environment

Other good reasons for safe treatment of sewage include preventing the spread of infection and disease and protecting water resources. Typical pollutants in household wastewater are nitrogen, phosphorus, and disease-

causing bacteria and viruses. If a septic system is working properly, it will effectively remove most of these pollutants.

With one-fourth of U.S. homes using septic systems, more than 4 billion gallons of wastewater per day is dispersed below the ground's surface. Inadequately treated sewage from septic systems can be a cause of groundwater contamination. It poses a significant threat to drinking water and human health because it can contaminate drinking water wells and cause diseases and infections in people and animals. Improperly treated sewage that contaminates nearby surface waters also increases the chance of swimmers contracting a variety of infectious diseases. These range from eye and ear infections to acute gastrointestinal illness and diseases like hepatitis.

How do I maintain my septic system?

Inspect and pump frequently

You should have a typical septic system inspected at least every 3 years by a professional and your tank pumped as recommended by the inspector (generally every 3 to 5 years). Alternative systems with electrical float switches, pumps, or mechanical components need to be inspected more often, generally once a year. Your service provider should inspect for leaks and look at the scum and sludge layers in your septic tank. If the bottom of the scum layer is within 6 inches of the bottom of the outlet tee or the top of the sludge layer is within 12 inches of the outlet tee, your tank needs to be pumped. Remember to note the sludge and scum levels determined by your service provider in your operation and maintenance records. This information will help you decide how often pumping is necessary.

What Does an Inspection Include?

- Locating the system.
- Uncovering access holes.
- Flushing the toilets.
- Checking for signs of back up.
- Measuring scum and sludge layers.
- Identifying any leaks.
- Inspecting mechanical components.
- Pumping the tank if necessary.

Four major factors influence the frequency of pumping: the number of people in your household, the amount of wastewater generated (based on the number of people in the household and the amount of water used), the volume of solids in the wastewater (for example, using a garbage disposal increases the amount of solids), and septic tank size.

Some makers of septic tank additives claim that their products break down the sludge in septic tanks so the tanks never need to be pumped. Not everyone agrees on the effectiveness of additives. In fact, septic tanks already contain the microbes they need for effective treatment. Periodic pumping is a much better way to ensure that septic systems work properly and provide many years of service. Regardless, every septic tank requires periodic pumping.

In the service report, the pumper should note any repairs completed and whether the tank is in good condition. If the pumper recommends additional repairs he or she can't perform, hire someone to make the repairs as soon as possible.

Use water efficiently

Average indoor water use in the typical single-family home is almost 70 gallons per person per day. Leaky toilets can waste as much as 200 gallons each day. The more water a household conserves, the less water enters the septic system. Efficient water use can improve the operation of the septic system and reduce the risk of failure.

High-efficiency toilets

Toilet use accounts for 25 to 30 percent of household water use. Do you know how many gallons of water your toilet uses to empty the bowl? Most older homes have toilets with 3.5- to 5-gallon reservoirs, while newer high-efficiency toilets use 1.6 gallons of water or less per flush. If you have problems with your septic system being flooded with household water, consider reducing the volume of water in the toilet tank if you don't have a high-efficiency model or replacing your existing toilets with high-efficiency models.

Faucet aerators and high-efficiency showerheads

Faucet aerators help reduce water use and the volume of water entering your septic system. High-efficiency showerheads or shower flow restrictors also reduce water use.

Water fixtures

Check to make sure your toilet's reservoir isn't leaking into the bowl. Add five drops of liquid food coloring to the reservoir before bed. If the dye is in the bowl the next morning, the reservoir is leaking and repairs are needed.

A small drip from a faucet adds many gallons of unnecessary water to your system every day. To see how much a leak adds to your water usage, place a cup under the drip for 10 minutes. Multiply the amount of water in the cup by 144 (the number of minutes in 24 hours, divided by 10). This is the total amount of clean water traveling to your septic system each day from that little leak.

Use Water Efficiently!

- **Install high-efficiency showerheads**
- **Fill the bathtub with only as much water as you need**
- **Turn off faucets while shaving or brushing your teeth**
- **Run the dishwasher and clothes washer only when they're full**
- **Use toilets to flush sanitary waste only (not kitty litter, diapers, or other trash)**
- **Make sure all faucets are completely turned off when not in use**
- **Maintain your plumbing to eliminate leaks**
- **Install aerators in the faucets in your kitchen and bathroom**
- **Replace old dishwashers, toilets, and clothes washers with new, high-efficiency models.**

For more information on water conservation, please visit www.epa.gov/owm/water-efficiency/index.htm

Watch your drains

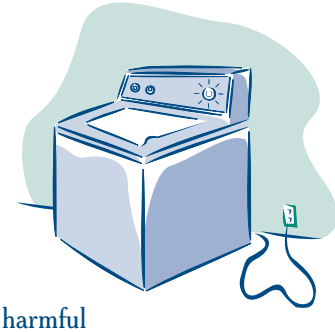
What goes down the drain can have a major impact on how well your septic system works.

Waste disposal

What shouldn't you flush down your toilet? Dental floss, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, and other kitchen and bathroom items that can clog and potentially damage septic system components if they become trapped. Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can stress or destroy the biological treatment taking place in the system or might contaminate surface waters and groundwater. If your septic tank pumper is concerned about quickly accumulating scum layers, reduce the flow of floatable materials like fats, oils, and grease into your tank or be prepared to pay for more frequent inspections and pumping.

Washing machines

By selecting the proper load size, you'll reduce water waste. Washing small loads of laundry on the large-load cycle wastes precious water and energy. If you can't select load size, run only full loads of laundry.



Doing all the household laundry in one day might seem like a time-saver, but it could be harmful to your septic system. Doing load after load does not allow your septic tank time to adequately treat wastes. You could be flooding your drainfield without allowing sufficient recovery time. Try to spread water usage throughout the week. A new Energy Star clothes washer uses 35 percent less energy and 50 percent less water than a standard model.

Care for your drainfield

Your drainfield is an important part of your septic system. Here are a few things you should do to maintain it:

- Plant only grass over and near your septic system. Roots from nearby trees or shrubs might clog and damage the drainfield.
- Don't drive or park vehicles on any part of your septic system. Doing so can compact the soil in your drainfield or damage the pipes, tank, or other septic system components.
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the drainfield. Flooding the drainfield with excessive water slows down or stops treatment processes and can cause plumbing fixtures to back up.

What can make my system fail?

If the amount of wastewater entering the system is more than the system can handle, the wastewater backs up into the house or yard and creates a health hazard.

You can suspect a system failure not only when a foul odor is emitted but also when partially treated wastewater flows up to the ground surface. By the time you can smell or see a problem, however, the damage might already be done.

By limiting your water use, you can reduce the amount of wastewater your system must treat. When you have your system inspected and pumped as needed, you reduce the chance of system failure.

A system installed in unsuitable soils can also fail. Other failure risks include tanks that are inaccessible for maintenance, drainfields that are paved or parked on, and tree roots or defective components that interfere with the treatment process.

Failure symptoms

The most obvious septic system failures are easy to spot. Check for pooling water or muddy soil around your septic system or in your basement. Notice whether your toilet or sink backs up when you flush or do laundry. You might also notice strips of bright green grass over the drainfield. Septic systems also fail when partially treated wastewater comes into contact with groundwater. This type of failure is not easy to detect, but it can result in the pollution of wells, nearby streams, or other bodies of water. Check with a septic system professional and the local health department if you suspect such a failure.

Stop, look, and smell!

Failure causes

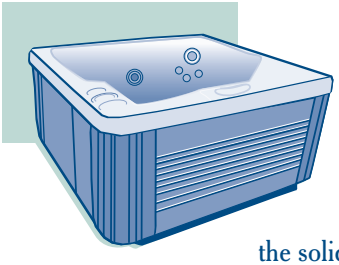
Household toxics

Does someone in your house use the utility sink to clean out paint rollers or flush toxic cleaners? Oil-based paints, solvents, and large volumes of toxic cleaners should not enter your septic system. Even latex paint cleanup waste should be minimized. Squeeze all excess paint and stain from brushes and rollers on several layers of newspaper before rinsing. Leftover paints and wood stains should be taken to your local household hazardous waste collection center. Remember that your septic system contains a living collection of organisms that digest and treat waste.

Household cleaners

For the most part, your septic system's bacteria should recover quickly after small amounts of household cleaning products have entered the system. Of course, some cleaning products are less toxic to your system than others. Labels can help key you into the potential toxicity of various products. The word "Danger" or "Poison" on a label indicates that the product is highly hazardous. "Warning" tells you the product is moderately hazardous. "Caution" means the product is slightly hazardous. ("Nontoxic" and "Septic Safe"

are terms created by advertisers to sell products.) Regardless of the type of product, use it only in the amounts shown on the label instructions and minimize the amount discharged into your septic system.



Hot tubs

Hot tubs are a great way to relax. Unfortunately, your septic system was not designed to handle large quantities of water from your hot tub. Emptying hot tub water into your septic system stirs the solids in the tank and pushes them out into the drainfield, causing it to clog and fail. Draining your hot tub into a septic system or over the drainfield can overload the system. Instead, drain cooled hot tub water onto turf or landscaped areas well away from the septic tank and drainfield, and in accordance with local regulations. Use the same caution when draining your swimming pool.

Water Purification Systems

Some freshwater purification systems, including water softeners, unnecessarily pump water into the septic system. This can contribute hundreds of gallons of water to the septic tank, causing agitation of solids and excess flow to the drainfield. Check with your licensed plumbing professional about alternative routing for such freshwater treatment systems.

Garbage disposals

Eliminating the use of a garbage disposal can reduce the amount of grease and solids entering the septic tank and possibly clogging the drainfield. A garbage disposal grinds up kitchen scraps, suspends them in water, and sends the mixture to the septic tank. Once in the septic tank, some of the materials are broken down by bacterial action, but most of the grindings have to be pumped out of the tank. Using a garbage disposal frequently can significantly increase the accumulation of sludge and scum in your septic tank, resulting in the need for more frequent pumping.

Improper design or installation

Some soils provide excellent wastewater treatment; others don't. For this reason, the design of the drainfield of a septic system is based on the results of soil analysis. Homeowners and system designers sometimes underestimate the significance of good soils or believe soils can handle any volume of wastewater applied to them. Many failures can be attributed to having an undersized drainfield or high seasonal groundwater table. Undersized septic tanks—another design failure—allow solids to clog the drainfield and result in system failure.

If a septic tank isn't watertight, water can leak into and out of the system. Usually, water from the environment leaking into the system causes hydraulic overloading, taxing the system beyond its capabilities and causing inadequate treatment and sometimes sewage to flow up to the ground surface. Water leaking out of the septic tank is a significant health hazard because the leaking wastewater has not yet been treated.

Even when systems are properly designed, failures due to poor installation practices can occur. If the drainfield is not properly leveled, wastewater can overload the system. Heavy equipment can damage the drainfield during installation which can lead to soil compaction and reduce the wastewater infiltration rate. And if surface drainage isn't diverted away from the field, it can flow into and saturate the drainfield.

For more information

Local Health Department

EPA Onsite/Decentralized Management Homepage

www.epa.gov/owm/septic

EPA developed this Web site to provide tools for communities investigating and implementing onsite/decentralized management programs. The Web site contains fact sheets, program summaries, case studies, links to design and other manuals, and a list of state health department contacts that can put you in touch with your local health department.

National Small Flows Clearinghouse

www.nesc.wvu.edu

Funded by grants from EPA, the NSFC helps America's small communities and individuals solve their wastewater problems. Its activities include a Web site, online discussion groups, a toll-free assistance line (800-624-8301), informative publications, and a free quarterly newsletter and magazine.

Rural Community Assistance Program

www.rcap.org

RCAP is a resource for community leaders and others looking for technical assistance services and training related to rural drinking water supply and wastewater treatment needs, rural solid waste programs, housing, economic development, comprehensive community assessment and planning, and environmental regulations.

National Onsite Wastewater Recycling Association, Inc.

www.nowra.org

NOWRA is a national professional organization to advance and promote the onsite wastewater industry. The association promotes the need for regular service and educates the public on the need for properly designed and maintained septic systems.

Septic Yellow Pages

www.septicyellowpages.com

The Septic Yellow Pages provides listings by state for professional septic pumpers, installers, inspectors, and tank manufacturers throughout the United States. This Web site is designed to answer simple septic system questions and put homeowners in contact with local septic system professionals.

National Association of Wastewater Transporters

www.nawt.org

NAWT offers a forum for the wastewater industry to exchange ideas and concerns. The NAWT Web site lists state associations and local inspectors and pumpers.

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Notice

Septic System Dos and Don'ts

(adapted from National Small Flows Clearinghouse)

Dos

- Check with the local regulatory agency or inspector/pumper if you have a garbage disposal unit to make sure that your septic system can handle this additional waste.
- Check with your local health department before using additives. Commercial septic tank additives do not eliminate the need for periodic pumping and can be harmful to the system.
- Use water efficiently to avoid overloading the septic system. Be sure to repair leaky faucets or toilets. Use high-efficiency fixtures.
- Use commercial bathroom cleaners and laundry detergents in moderation. Many people prefer to clean their toilets, sinks, showers, and tubs with a mild detergent or baking soda.
- Check with your local regulatory agency or inspector/pumper before allowing water softener backwash to enter your septic tank.
- Keep records of repairs, pumpings, inspections, permits issued, and other system maintenance activities.
- Learn the location of your septic system. Keep a sketch of it with your maintenance record for service visits.
- Have your septic system inspected and pumped as necessary by a licensed inspector/contractor.
- Plant only grass over and near your septic system. Roots from nearby trees or shrubs might clog and damage the drainfield.

Don'ts

- Your septic system is not a trash can. Don't put dental floss, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, latex paint, pesticides, or other hazardous chemicals into your system.
- Don't use caustic drain openers for a clogged drain. Instead, use boiling water or a drain snake to open clogs.
- Don't drive or park vehicles on any part of your septic system. Doing so can compact the soil in your drainfield or damage the pipes, tank, or other septic system components.

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