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)
- ◯ **Discharge**
- ✓ **Change of Consent Notice (s.221(3))**
- ◯ **Extension of time (s.125)**
- ◯ **Other (please specify)** _____

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: Sonya Jurisich & Brian Rosewarne

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: Lynley Newport

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: BVR Trust & SKJ Trust Partnership

Property Address/ Location: [redacted]

Postcode

8. Application Site Details

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

Name/s:	as per item 7
Site Address/ Location:	[redacted]
Legal Description:	[redacted]
Certificate of title:	[redacted]

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.

Please contact Sonya Jurisich (027 2909454 or brian.rosewarne@xtra.co.nz) prior to visiting the site as she will need to advise the tenant at 12 Hall Road of your visit.
Thank you

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.

Subdivision of land zoned Residential, to create three additional lots over two stage;
Land use consent for future breach of Stormwater Management on two of the lots;
Consent to change consent notice; and
Consent under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

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)

◯ **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) BVR Trust & SKJ Trust Partnership

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) Sonya Kay Jurisich

Signature:
(signature of bill payer [redacted]
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 [redacted] this application is true and complete to the best of my knowledge.

Name: (please write in full)

Signature: [redacted] Date

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.

THOMSON SURVEY LIMITED

SURVEYORS AND RESOURCE PLANNERS

Our Reference: 10740.1 (FNDC)

29 July 2025

Resource Consents Department
Far North District Council
JB Centre
KERIKERI

Dear Sir/Madam

RE: Proposed Subdivision & Land Use at 12 Hall Road, Kerikeri

I am pleased to submit application on behalf of BVR Trust & SKJ Trust Partnership (Sonya Jurisich and Brian Rosewarne), for a proposed two stage subdivision of land at Hall Road, Kerikeri, zoned Residential. The site is a 'sewered' site.

Consent is also required for a future breach of the Stormwater Management rule for two of the lots; for a cancellation of an existing Consent Notice; and as a controlled activity under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. Overall, the application is a discretionary activity.

The application fee of $5,143 has been paid separately via direct credit.

Regards

Lynley Newport
Senior Planner
THOMSON SURVEY LTD

315 Kerikeri Road, Kerikeri
P.O. Box 372, Kerikeri 0245, New Zealand.
Email: Kerikeri@tsurvey.co.nz
denis@tsurvey.co.nz, sam@tsurvey.co.nz

Telephone: **09 4077360**
Facsimile: **09 4077322**
*After Hours:*Director: Denis Thomson 09 4071372
*After Hours:*Office Manager: Sam Lee 021 1370060

BVR TRUST & SKJ TRUST PARTNERSHIP

PROPOSED SUBDIVISION & LAND USE; CONSENT UNDER THE NES-CS AS A CONTROLLED ACTIVITY; AND CONSENT PURSUANT TO S221(3) OF THE RMA

12 Hall Road, Kerikeri

REPORT & ASSESSMENT OF ENVIRONMENTAL EFFECTS

Thomson Survey Ltd
Kerikeri

1.0 INTRODUCTION

1.1 The Proposal

Subdivision

The applicants propose to subdivide property at 12 Hall Road, Kerikeri, within the Kerikeri township, to create a total of four residential lots (three additional), in two stages. Stage one is to create Lots 1-3 and then Stage 2 is proposed to further subdivide Lot 1 Stage 1, to create Lots 4 & 5. Refer to draft scheme plans in *Appendix 1*.

Proposed Lot 3 contains existing built development and is to be 1597m^2 in area (Stage 1). Proposed Lot 2 is vacant land and is to be 602m^2 in area (Stage 1). The Stage 1 subdivision would leave Lot 1 of just over 800m^2, to be further subdivided at Stage 2 creating proposed Lots 4 & 5, both vacant land and both of 400m^2 in area.

The land is zoned Residential in the Operative District Plan, and General Residential in the Proposed District Plan. Proposed Lots 2, 3 and 5 will share an access point off Butler Road, and proposed Lot 4 will have its own access point. Hall Road is a formed and sealed public road. It is intended that the lots be fully serviced in terms of reticulated Council services.

Land Use

The application includes land use consent for a breach of the zone's permitted activity Rule 7.6.5.1.6 Stormwater Management, for Lots 4 & 5 only. The application also includes a minor breach of Rule 15.1.6C.1.2(c) which requires urban private (shared) accessways to be concrete or seal. In this subdivision it is proposed to retain the existing tightly compacted metal surface.

Consent under the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS)

The application also includes application required pursuant to the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS). The land has historically been in horticultural production and the activity is a subdivision and change of use. A combined Preliminary and Detailed Site Investigation and Report has been carried out – refer to Appendix 6. Because a Detailed Site Investigation has been done, consent is required. The findings of that investigation show no exceedance of contaminant levels in soils; no exceedance of soil disturbance thresholds; and conclude that it is highly unlikely there will be a risk to human health as a result of the proposed activity. As such consent under the NES-CS is required, as a controlled activity.

S221(3) cancellation of Consent Notice

The final component of this application is the cancellation of an historic (but still current) consent notice attached to the title – refer to legal interests below. It is proposed to impose a replacement consent notice to apply to Lot 1 Stage 1 (and to carry down to Lots 4 & 5 Stage 2), which will continue to protect the majority of roadside plantings/landscaping.

1.2 Scope of this Report

This assessment and report accompanies the Resource Consent Application made by our clients, and is provided in accordance with Section 88 and Schedule 4 of the Resource Management Act 1991. The application seeks consent to subdivide, as a discretionary activity under the Far North Operative District Plan and RMA, and as a controlled activity under the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS).

The name and address of the owner of the property is contained in the Form 9 Application Form. There are no other activities that are a part of the proposal to which the application relates, and no other resource consents required other than that addressed in this application.

2.0 PROPERTY DETAILS

Location:	12 Hall Road, Kerikeri – Location Map attached in Appendix 2
Legal Description:	Lot 2 DP 187009
CT:	NA117B/51 (dated 30 July 1999) (Copy attached as Appendix 3)
Land Area:	3000m²

3.0 SITE DESCRIPTION

The site is zoned Residential in the Operative District Plan, and General Residential in the Proposed District Plan. The application site is connected to Council's reticulated wastewater and stormwater. Since the Arvida Retirement Village development at the end of Hall Road, Council water main has been been installed along Hall Road, enabling properties on Hall Road to connect if they want to.

Looking across the site from the driveway in a north easterly directly towards Hall Road

The site currently supports an existing single storey residential dwelling, along with a metalled driveway, all to be contained within proposed Lot 3. The existing house is accessed off Hall Road. The site features lawn area with some mature trees and boundary plantings. It is relatively flat.

The site is not identified as being prone to any natural hazard (NRC on-line hazard maps); and does not contain any high or outstanding natural character or landscape values, nor any significant indigenous vegetation.

Refer to Site Suitability and PSI/DSI reports in Appendices 5 & 6 for more site description details.

3.1 Legal Interests

There is one existing consent notice registered on the underlying Certificate of Title created by document D415095.2. Copy of document is attached as part of *Appendix 3*. This Consent Notice is no longer required, as worded, and the application includes a request to amend the consent notice to provide for a separate entrance into Lot 4, Stage 2.

3.2 Consent History

Building Consent History

BC1999-2275 (PIM)	February 2001	New Dwelling
BC1999-3116	February 2001	New Dwelling

Resource Consent History

RC1970717	August 1997	Subdivision creating the application site

4.0 SCHEDULE 4 – INFORMATION REQUIRED IN AN APPLICATION

Clauses 2 & 3: Information required in all applications

(1) An application for a resource consent for an activity must include the following:	
(a) a description of the activity: .	Refer Sections 1 above and 5 (below) of this Planning Report.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Section 6 of this Planning Report.
(b) a description of the site at which the activity is to occur:	Refer to Section 3 of this Planning Report.
(c) the full name and address of each owner or occupier of the site:	This information is contained in the Form 9 attached to the application.

(d) a description of any other activities that are part of the proposal to which the application relates:	Refer to Sections 3 and 5 of this Planning Report for existing activities within the site. The application is for subdivision and land use pursuant to the Operative District Plan and NES-CS, and variation to Consent Notice pursuant to s221(3) of the RMA.
(e) a description of any other resource consents required for the proposal to which the application relates:	No other consents are required other than that being applied for pursuant to the Far North Operative District Plan.
(f) an assessment of the activity against the matters set out in Part 2:	Refer to Section 7 of this Planning Report.
(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b), including matters in Clause (2): *(a) any relevant objectives, policies, or rules in a document; and* *(b) any relevant requirements, conditions, or permissions in any rules in a document; and* *(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).*	Refer to Sections 5 & 7 of this Planning Report.
(3) An application must also include any of the following that apply:	
(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):	Refer sections 3 and 5. The site supports a legally established residential dwelling.
(b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):	There is no existing resource consent. Not applicable.
(c) if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)).	The site is not within an area subject to a customary marine title group. Not applicable.

Clause 4: Additional information required in application for subdivision consent

(4) An application for a subdivision consent must also include information that adequately defines the following:	
(a) the position of all new boundaries: *(b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:* *(c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:* *(d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:* *(e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:* *(f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):* *(g) the locations and areas of land to be set aside as new roads.*	Refer to Scheme Plans in Appendix 1.

Clause 5: Additional information required for application for reclamation – not applicable.

Clause 6: Information required in assessment of environmental effects

(1) An assessment of the activity's effects on the environment must include the following information:	
(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:	Refer to Section 6 of this planning report. The activity will not result in any significant adverse effect on the environment.
(b) an assessment of the actual or potential effect on the environment of the activity:	Refer to Section 6 of this planning report.
(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:	Not applicable as the application does not involve hazardous installations.
(d) if the activity includes the discharge of any contaminant, a description of— *(i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and* *(ii) any possible alternative*	The subdivision does not involve any discharge of contaminant.

methods of discharge, including discharge into any other receiving environment:	
(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:	Refer to Section 6 of this planning report.
(f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:	Refer to Section 8 of this planning report.
g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:	No monitoring is required as the scale and significance of effects does not warrant any.
(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).	No protected customary right is affected.

Clause 7: Matters that must be addressed by assessment of environmental effects (RMA)

(1) An assessment of the activity's effects on the environment must address the following matters:	
(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	Refer to Sections 6 and 8 of this planning report and also to the assessment of objectives and policies in Section 7.
(b) any physical effect on the locality, including any landscape and visual effects:	Refer to Section 6. The proposed activity will have no adverse effects on the physical environment and landscape and visual amenity values.
(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	Refer to Section 6. The proposal will result in no adverse effects in regard to habitat and ecosystems.
(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:	Refer to Section 6, and above comments
(e) any discharge of contaminants into the environment, including any	The subdivision will not result in the discharge of contaminants, nor any unreasonable emission of noise.

unreasonable emission of noise, and options for the treatment and disposal of contaminants:	
(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	The subdivision site is not subject to natural hazards and does not involve hazardous installations.

5.0 ACTIVITY STATUS

5.1 Operative District Plan

The property is zoned Residential and is a sewered site. There are no resource features applying.

Table 13.7.2.1 Minimum Lot Sizes applies:

(v) RESIDENTIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	**Restricted Discretionary Activity Status (Refer also to 13.8)**	**Discretionary Activity Status (Refer also to 13.9)**
The minimum lot sizes are 3,000m² (unsewered) and 600m² (sewered).		The minimum lot sizes are 2,000m² (unsewered) and 300m² (sewered).

The proposal creates four lots. Two of the lots, to be created in Stage 2, are less than the controlled activity minimum lot size, being 400m² in area. Therefore the subdivision is a discretionary subdivision activity in terms of the above Table 13.7.2.1.

Zone Rules

7.6.5.1.6 Stormwater Management – The existing impermeable surface coverage on the application site is all to be within proposed Lot 3, with an area of 1597m2. The coverage is estimated to come to 33.6% of that lot area – permitted. Future impermeable surface coverage on Stage 1 Lot 2 of 602m2 in area, is estimated to be no more than the permitted 50% coverage. Stage 2 Lots 4 and 5, however, are expected to support buildings and driveways up to 240m2 in area, or 60% coverage. This **breaches Rules 7.6.5.1.6** but is consistent with the zone's controlled activity threshold.

Consent is therefore sought for a breach of Rule 7.6.5.1.6 for Lots 4 & 5 (Stage 2) lots, providing for up to 60% coverage.

7.6.5.1.17 Building Coverage – All Stage 1 and 2 lots are considered capable of supporting built environment complying with the zone's permitted activity threshold.

The existing house within Lot 3 is more than 1.2m from the proposed new internal boundary. It is approximately 7.5m from proposed boundary and has a height of less than 4m at the nearest point to the new boundary. Compliance with the Sunlight rule in terms of the new boundary is therefore assured.

District Wide Rules

There are no rules in Chapter 12 of the Plan that are applicable, nor any in Chapter 14.

It is proposed to retain the current surface treatment of the proposed shared private accessway, which is tightly packed metal, restrained by kerbing on both sides. This is considered fit for purposes and not in need of re-surfacing. Technically, however, this does not constitute concrete or seal and therefore consent is sought for a breach of Rule 15.1.6C.1.2(c). I have not identified any other breaches of rules in 15.1.6C (access).

The above identified land use breaches does not change the category of activity, which remains at discretionary.

5.2 Proposed District Plan

The FNDC publicly notified its PDP on 27th July 2022. Whilst the majority of rules in the PDP will not have legal effect until such time as the FNDC publicly notifies its decisions on submissions, there are certain rules that have been identified in the PDP as having immediate legal effect and that may therefore need to be addressed in this application and may affect the category of activity under the Act. These include:

Rules HS-R2, R5, R6 and R9 in regard to hazardous substances on scheduled sites or areas of significance to Maori, significant natural areas or a scheduled heritage resource. As the application site and proposal does not involve hazardous substances, these rules are not relevant to the proposal.

Heritage Area Overlays – N/A as none apply to the application site.

Historic Heritage rules and Schedule 2 – N/A as the site does not have any identified (scheduled) historic heritage values.

Notable Trees – N/A – no notable trees on the site.
Sites and Areas of Significance to Maori – N/A – the site does not contain any site or area of significance to Maori.

Ecosystems and Indigenous Biodiversity – Rules IB-R1 to R5 inclusive.

No indigenous vegetation clearance is proposed.

Subdivision (specific parts) – only subdivision provisions relating to land containing Significant Natural Area or Heritage Resources have immediate legal effect. The site contains no scheduled or mapped Significant Natural Areas or Heritage Resources.

Activities on the surface of water – N/A as no such activities are proposed.

Earthworks – Only some rules and standards have legal effect. These are Rules EW-R12 and R13 and related standards EW-S3 and ES-S5 respectively. EW-R12 and associated EW-S3

relate to the requirement to abide by Accidental Discovery Protocol if carrying out earthworks and artefacts are discovered. EW-R13 and associated ES-S5 are in regard to appropriate Erosion and Sediment Control measures being in place during any earthworks. Both aspects can be conditions of consent.

Signs – N/A – signage does not form part of this application.

Orongo Bay Zone – N/A as the site is not in Oronga Bay Zone.

There are no zone rules within the General Residential Zone with immediate legal effect that affect the proposal's activity status.

5.3 Compliance with Consent Notice D415095.2

D415095.2 is a consent notice originally applied to Lots 1 & 2 DP 158654 (Lot 1 DP 158654 having since been further subdivided to create the application site and one other. The consent notice applies only to road frontage.

The wording of the consent notice clauses is as follows:

"That all existing vegetation on the Hall Road roadside frontage boundary of Lots 1 & 2 DP 158654 be retained in perpetuity with the exception of vegetation required to be removed to permit one approved vehicle entrance to each of the lots provided that the vehicle entrance to Lot 2 shall not be closer than 10m to the eastern boundary of Lot 2."

"That the lot owners may undertake routine maintenance of the vegetation on the roadside boundary but the removal or replanting of any area will require the prior written approval of the Far North District Council."

The latter part of the first clause is not relevant to our application site as it resulted from a subdivision of Lot 1 DP 1580654, not Lot 2.

An historic precedent has been set in the consenting of, and creation of Lots 1 & 2 DP 187009 in that the Council provided for/allowed each of Lots 1 & 2 to have a vehicle entrance. This subdivision seeks one more crossing, to service Lot 4. There is already a 'gap' in the roadwide hedge to accommodate such a crossing.

One could argue that the proposal to have a separate crossing for Lot 4 complies with the literal wording of the two clauses above. However, in the interests of completeness and clarity, it is requested as part of this application, that the current consent notice be cancelled as it affects the application site and title (Lot 1 DP 158654, Record of Title NA117B/51 and any subsequent title created by way of further subdivision). We then propose a 'replacement' consent notice clause that could apply to the lots with road frontage in this current application. Neither Lots 2 or 3 need have any consent notice applied in terms of road frontage vegetation because (a) Lot 3 only has its access at road frontage (no vegetation) and (b) Lot 2 has no road frontage.

It is proposed that at Stage 1, Lot 1 be subject to the following consent notice:

"That amenity landscaping or fencing, or combination thereof, be established and/or maintained along the Hall Road roadside frontage boundary where not occupied by a building or access." Or something similar.

This would then carry over onto Lots 4 & 5, enabling Lot 4 to have a separate crossing, whilst still retaining road frontage landscaping and/or fencing. Lot 5 will have existing access over the land in Lot 3 via ROW.

6.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

6.1 Allotment Sizes and Dimensions

Proposed Lot 3 supports existing built development. Proposed Lots 2, 4 and 5 have no existing built development. All can provide the required 14m x 14m square building envelope complying with the zone's boundary setback requirements. All lots are an appropriate size and dimension to accommodate future built development.

6.2 Natural and Other Hazards

The Subdivision Site Suitability Engineering Report (SSSER) supporting the application – refer Appendix 5 - contains a summarised natural hazards assessment in its Section 10. The only hazards it identifies as being marginally applicable to the site, are erosion and overland flow paths / flooding / inundation. The risk of erosion would likely only occur during earthworks. Mitigation can be provided by means of stormwater dispersion control and erosion and sediment control measures, resulting in less than minor effects. The risk of concentrated flows through overland flow paths can be mitigated by means of flood control attenuation, resulting in effects that are less than minor.

No other natural hazards are applicable and there is no reason pursuant to s106 of the RMA for Council to decline consent.

The site has historically been used for a Hazardous Activity, specifically horticulture. This historic use has been investigated with the conclusion that it is highly unlikely that there will be risk to human health as a result of the proposed activity.

6.3 Water Supply

The site has a Council water supply mains pipeline (public 65mm MDPE water supply pipeline) running along its road frontage. This primarily serves Arvida but is part of the Council's reticulated network. The application seeks future connections to that network. However, if this is not possible, then the lots can be self reliant in regard to potable water supply. There is no requirement for them to provide for on site fire fighting water supply given the presence of Council supply, with two hydrants within the required distance of the site's frontage. Should consent be granted to connect, new water meters will be installed at the roadside boundaries of the lots. Easements A & E on the scheme plans provide for water supply as a potential purpose.

6.4 Stormwater Disposal

Refer to the SSSER attached in *Appendix 5*, section 6. The report assumes permitted activity impermeable coverage for proposed Lots 2 and 3, but coverage up to the 60% threshold on proposed Lots 4 & 5.

The report puts forward stormwater management concepts for future development on proposed vacant lots that take into account the 10% AEP pre-development requirement. The site is situated at the lower part of the catchment, with only a short distance and a dedicated flow path (Hall Road) to reach its outlet point in a 1% AEP event. Therefore attenuation is not necessary to be provided for the 1% AEP event.

Concept stormwater attenuation is set out in the report's section 6.5. It is proposed that a new grass lined channel drain be constructed adjacent to the south-eastern edge of the existing driveway, to be incorporated into the proposed ROW. This will provide stormwater connection for proposed Lots 2 and 5.

6.5 Sanitary Sewage Disposal

Refer to the SSSER attached in *Appendix 5*, section 5. The property is connected to the Council's reticulated sewerage scheme, with the existing house having an existing connection. It is proposed to provide three new boundary kits, to be installed onto the existing public 50mm PE public sewer line that is positioned in the existing ROW adjacent to the site's eastern boundary. Lots 2, 4 & 5 may pump or gravitate to the boundary kit as required (to be detailed at building consent stage).

Council should have no issues in regard to allowing a total of four connections (existing house plus three more) for this site. The total site area is 3000m^2 and I understand the reticulation and treatment infrastructure was designed to cater for a future capacity of land zoned urban, at the proposed allowed minimum lot size of 500m^2. That would mean six connections would have been catered for when designing the wastewater infrastructure. The application is only requesting four.

6.6 Energy Supply & Telecommunications

The existing dwelling has existing connections. Top Energy and Chorus have been consulted, with correspondence attached in *Appendix 4*.

6.7 Easements for any purpose

The Memorandum of Easements shown on the Scheme Plan(s) provide A and E for right of way, telecoms, power, water supply and drainage; whilst B, C and D are to provide for the conveyance of sewage.

6.8 Property Access

Refer to the SSSER attached in *Appendix 5*, section 9. A new vehicle crossing will be formed to provide access to proposed Lot 4, to be created at Stage 2. This will be constructed in accordance with the FNDC/S/6 Engineering Standard for residential vehicle crossings to suit

the un-kerbed edge of Hall Road. The crossing will require a culvert over the existing stormwater drain alongside the road.

The existing crossing off Hall Road will serve the other lots. It is proposed to use the existing formed private accessway which comprises a tightly bound metal aggregate restrained at its edges by kerbs. This is considered suitable to serve the number of lots proposed. Technically, however, it would be classified as 'unsealed' where urban access serving two or more dwellings is supposed to be concrete or seal. Other than surface treatment it complies with District Plan standards and is in accordance with FNDC/S/7. A breach of Rule 15.1.6C.1.2(c) is included in this application.

As discussed earlier under Stormwater, it is proposed that a new grass lined v-drain channel be installed along the eastern edge of the accessway. This will serve to intercept and more efficiently convey runoff from the accessway to Hall Road.

Existing site frontage with crossing at centre picture.

Proposed ROW A and E, looking towards Hall Road

In summary, I believe the proposed subdivision, creating fewer lots than could be created as a controlled activity subdivision, will not have adverse effects on the Council's roading network of a more than minor nature.

6.9 Preservation and enhancement of heritage resources (including cultural), vegetation, fauna and landscape, and land set aside for conservation purposes

Heritage/Cultural Values

There are no archaeological, or Sites of Significance to Maori recorded in the District Plan or the NZAA Archaeological Site Recording Scheme. There are no notable trees or historic sites as scheduled or mapped in the Operative District Plan.

Flora & Fauna

The site is already developed for residential use with no significant areas of indigenous vegetation or habitat present on the site. Refer to commentary below in regard to the partial clearance of the hedge plantings along road frontage.

The site is in an urban area, zoned Residential. No restriction on the keeping of cats or dogs is considered necessary.

Areas set aside for Conservation Purposes

There are no statutory areas set aside for conservation purposes.

6.10 Soil

The subdivision is urban in nature and in an urban zone. It will not adversely affect the life supporting capacity of soil.

6.11 Earthworks

The SSSER in Appendix 5 provides some general recommendations, and erosion and sediment control measures for subdivision site works – refer Section 8 of that report. The only earthworks required will be that related to the new channel along the ROW and service trenching, estimated to result in approximately 100m^3 of earthworks, well within the permitted activity threshold applying to the residential zone.

Erosion and Sediment Control Measures associated with future on lot development are best designed at time of building consent.

6.12 Access to reserves and waterbodies

The property does not adjoin any qualifying water body. The site is now adjacent to any Council reserve. No public access is required.

6.13 Land Use Compatibility

The proposal is for subdivision of residential land to enable more residential development. The site is in a residential area. No land use incompatibility issues should arise.

6.14 Proximity to Airports

Not relevant.

6.15 Natural Character of the Coastal Environment

Not relevant.

6.16 Energy Efficiency and Renewable Energy Development/use

Not considered, albeit each lot can provide access to sunlight for any future dwelling.

6.17 National Grid Corridor

Not relevant.

6.18 Urban Amenity – roadside planting

The application includes a minor change to an existing consent notice applying to the application site. D415095.2 is a consent notice applied to Lots 1 & 2 DP 158654 (the title for Lot 1 having since been cancelled due to its subdivision into Lots 1 & 2 DP 187009 (the latter being the application site).

The wording of the consent notice clauses is currently as follows:

"That all existing vegetation on the Hall Road roadside frontage boundary of Lots 1 & 2 DP 158654 be retained in perpetuity with the exception of vegetation required to be removed to permit one approved vehicle entrance to each of the lots provided that the vehicle entrance to Lot 2 shall not be closer than 10m to the eastern boundary of Lot 2."

"That the lot owners may undertake routine maintenance of the vegetation on the roadside boundary but the removal or replanting of any area will require the prior written approval of the Far North District Council."

The latter part of the first clause is not relevant to our application site as it resulted from a subdivision of Lot 1 DP 1580654, not Lot 2. As outlined in section 5.3 of this planning report, it is proposed to cancel the consent notice as it affects the application site, and re-impose a similar consent notice to apply to Lots 4 & 5 of this current subdivision.

I do not believe the removal of a short length of hedging (where there is already a 'gap') creates any adverse effects in terms of amenity. Amenity can be maintained by requiring roadside landscaping/fencing or combination thereof on any part of the frontage not occupied by buildings or access. It hardly seems necessary to have protection at all, given the level and type of development along the entire length of Hall Road. The roadside boundaries along Hall Road feature plantings, some of which are close planted visually screening plant species, but others more spaced out with specimen trees. Some frontages

are fenced, others are bare. The variety maintains a high level of amenity without any need to impose a compulsory requirement to retain roadside plantings.

6.19 NES – Assessing and Managing Contaminants in Soil to Protect Human Health

The application includes controlled activity consent requirements under the above referenced NES. The site was historically included within a larger horticultural block. A combination PSI/DSI report supports the application – refer to Appendix 6.

Sampling for potential contaminants of interest was undertaken over the vacant parts of the application site. The result of analytical testing indicates that contaminants concentrations are below (within) human health guidelines for a residential land use scenario and that it is highly unlikely that there will be a risk to human health as a result of the proposed activity. The report makes no specific recommendations given the risk to human health is assessed as low, and also given that soil disturbance volumes are unlikely to exceed permitted activity volume thresholds as outlined in the NES-CS.

6.20 Cumulative Effects

The application site is 3,000m^2 in area. The permitted residential intensity for a sewered site of that size is one unit per 600m^2 of land. This equates to five residential units. The subdivision only proposes four. I do not believe the proposal creates adverse cumulative effects of a more than minor nature.

7.0 STATUTORY ASSESSMENT

7.1 Far North Operative District Plan Objectives and Policies

Objectives and policies relevant to this proposal are those listed in Chapters 13 (Subdivision); and 7.6 (Residential Zone) of the District Plan.

<u>Subdivision Objectives & Policies</u>

Objectives

13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities

This is an enabling objective. The Residential Zone is identified and located in areas where medium and high density residential living is and will be the predominant use. The site is / or is able to be, serviced. The proposal presents sustainable management and will provide for small, affordable residences within walking distance of amenities. I believe the proposal to be consistent with Objective 13.3.1.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

The Assessment of Environmental Effects, and supporting reports, conclude that the proposed subdivision is appropriate for the site and that any actual or potential adverse effects can be avoided, remedied or mitigated. No reverse sensitivity effects will result from the subdivision and the site is not subject to any hazards.

Objectives 13.3.3 and 13.3.4 refer to outstanding landscapes or natural features; and scheduled heritage resources; and to land in the coastal environment. By proposing development on land that is none of these things, the proposal is consistent with these objectives as the proposal will not create any adverse effects on the values and character outlined in the two objectives.

13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

The lots are and will be serviced with reticulated water and sewerage, and stormwater can be appropriately managed.

13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices.

This objective is likely intended to encourage Management Plan applications, and does not have a lot of relevance to this proposal.

13.3.7 To ensure the relationship between Maori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for.

And related Policy

13.4.11 That subdivision recognises and provides for the relationship of Maori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.

The site is not known to contain any sites of cultural significance to Maori, or wahi tapu. The site does not include or adjoin any waterbody. The subdivision creates three additional lots in an existing serviced urban area. I do not believe that the proposal adversely impacts on the ability of Maori to maintain their relationship with ancestral lands, water, sites, wahi tapu and other taonga.

13.3.8 To ensure that all new subdivision provides an electricity supply sufficient to meet the needs of the activities that will establish on the new lots created.

Power can be provided to lot boundaries.

13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).

13.3.10 To ensure that the design of all new subdivision promotes efficient provision of infrastructure, including access to alternative transport options, communications and local services.

A future lot owner will have sufficient scope within the site to include energy efficiencies within their individual home designs, via active means such as solar panels, or passive design strategies such as sky lights and orientation.

The subdivision is close to town amenities.

Objective 13.3.11 is not discussed further as there is no National Grid on or near the subject site.

Policies

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:
(a) natural character, particularly of the coastal environment;
(b) ecological values;
(c) landscape values;
(d) amenity values;
(e) cultural values;
(f) heritage values; and
(g) existing land uses.

The values outlined above, along with existing uses, have been discussed earlier in this report.

13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties. And

13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.

Access to the site is off an existing public road (sealed). Subdivision site works will be minimal.

13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.

The site is not subject to any hazard that might impact on the future development of the proposed additional lots.

13.4.4 That in any subdivision where provision is made for connection to utility services, the potential adverse visual impacts of these services are avoided.

It is envisaged that internal to the site, utility services will be underground.

13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

The site is not known to contain any of the natural and physical resources listed in 13.4.6.

Policy 13.4.7 is not discussed as this relates to carparking associated with non residential activities (not relevant) or esplanade areas, none of which are required or considered necessary.

13.4.8 That the provision of water storage be taken into account in the design of any subdivision.

This is discussed earlier. The lots will be connected to Council reticulated water supply.

Policies 13.4.9 and 13.4.10 are not discussed further. The former relates to bonus development donor and recipient areas, which are not contemplated in this proposal; whilst the latter only applies to subdivision in the Conservation Zone.

13.4.12 That more intensive, innovative development and subdivision which recognises specific site characteristics is provided for through the management plan rule where this will result in superior environmental outcomes.

The application is not lodged as a Management Plan application.

13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to ***s6 matters****. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:*
(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;
(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;
(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;
(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2 and in particular Section 2.5 and Council's "Tangata Whenua Values and Perspectives" (2004);
(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;
(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.
(g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

S6 matters (National Importance) are addressed later in this report.

In addition:

(a) The proposal is within an urban area with residential character.
(b) The proposal has little impact on natural character, indigenous vegetation, landforms, rivers, streams or wetlands.
(c) The site is not in the coastal environment.
(d) The site does not adjoin any stream or river. No public access is required.

(e) The proposal is not believed to negatively impact on the relationship of Maori with their culture.
(f) There are no existing areas of significant habitat or areas of significant indigenous vegetation.
(g) There are no identified heritage values.
(h) The site is serviced and not subject to natural hazards.

I consider the proposal to be consistent with Policy 13.4.13.

13.4.14 That the objectives and policies of the applicable environment and zone and relevant parts of Part 3 of the Plan will be taken into account when considering the intensity, design and layout of any subdivision.

The subdivision has had regard to the underlying zone's objectives and policies – see below.

13.4.15 That conditions be imposed upon the design of subdivision of land to require that the layout and orientation of all new lots and building platforms created include, as appropriate, provisions for achieving the following: (a) development of energy efficient buildings and structures; (b) reduced travel distances and private car usage; (c) encouragement of pedestrian and cycle use; (d) access to alternative transport facilities; (e) domestic or community renewable electricity generation and renewable energy use

The new lots can provide for dwellings with good access to sunlight and the ability to utilise energy efficiency measures. The site is close to transport networks.

Policy 13.4.16 is not considered relevant as it only relates to the National Grid.

In summary, I believe the proposal to be consistent with the above Objectives and Policies.

<u>Residential Zone Objectives and Policies</u>

Objectives:

7.6.3.1 To achieve the development of new residential areas at similar densities to those prevailing at present.

7.6.3.2 To enable development of a wide range of activities within residential areas where the effects are compatible with the effects of residential activity.

I believe the proposed subdivision to be capable of providing for development that will be in keeping with, and compatible with, the character and amenity of the area. The sites will be serviced.

And policies

7.6.4.1 That the Residential Zone be applied to those parts of the District that are currently predominantly residential in form and character.

7.6.4.2 That the Residential Zone be applied to areas which are currently residential but where there is scope for new residential development.

7.6.4.3 That the Residential Zone be applied to areas where expansion would be sustainable in terms of its effects on the environment.

All of the above policies are applicable to the Council when determining zoning, and not to the individual property owner when developing their site.

7.6.4.4 That the Residential Zone provide for a range of housing types and forms of accommodation.

Two of the additional vacant lots are smaller than the controlled minimum lot size applying in the zone, but consistent with (and larger than) the discretionary activity threshold. Development within each lot will remain within permitted activity thresholds in regard to boundary setback, height of buildings and building coverage. This will mean modest footprints. This is in keeping with providing for a "range of housing types and forms of accommodation" as required by this policy.

7.6.4.5 That non-residential activities only be allowed to establish within residential areas where they will not detract from the existing residential environment.

7.6.4.6 That activities with net effects that exceed those of a typical single residential unit, be required to avoid, remedy or mitigate those effects with respect to the ecological and amenity values and general peaceful enjoyment of adjacent residential activities.

The above two policies are not relevant as this is a subdivision application and not seeking any non residential use requiring land use consent.

7.6.4.7 That residential activities have sufficient land associated with each household unit to provide for outdoor space, planting, parking and manoeuvring.

7.6.4.8 That the portion of a site or of a development that is covered in buildings and other impermeable surfaces be limited so as to provide open space around buildings to enable planting, and to reduce adverse hydrological, ecological and amenity effects.

7.6.4.9 That sites have adequate access to sunlight and daylight.

7.6.4.10 That provision be made to ensure a reasonable level of privacy for inhabitants of buildings on a site.

These matters have been addressed in the AEE. At least 50% of the new lots' area will be left free of buildings and at least 40% of the new lots' area will remain permeable coverage.

7.2 Far North Proposed District Plan Objectives and Policies

PDP Subdivision Objectives:

SUB-O1 *Subdivision results in the efficient use of land, which:*
a. achieves the objectives of each relevant zone, overlays and district wide provisions;
b. contributes to the local character and sense of place;
c. avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;
d. avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;
e. does not increase risk from natural hazards or risks are mitigates and existing risks reduced; and
f. manages adverse effects on the environment.

SUB-O2 *Subdivision provides for the:*
a. Protection of highly productive land; and
b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.

SUB-O3 *Infrastructure is planned to service the proposed subdivision and development where:*
a. there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and
b.where no existing connection is available infrastructure should be planned and consideration be given to connections with the wider infrastructure network.

SUB-O4
Subdivision is accessible, connected, and integrated with the surrounding environment and provides for:
a. public open spaces;
b. esplanade where land adjoins the coastal marine area; and
c. esplanade where land adjoins other qualifying water bodies.

The subdivision results in the efficient use of land and achieves the objectives of the zone. It contributes to the local character and sense of place and reverse sensitivity issues are not increased. The subdivision does not increase the risk from natural hazards, and manages adverse effects (SUB-O1). The site and surrounding area is not utilised for productive purposes and is not zoned for productive use, so the subdivision has no need to protect such land. The site contains none of the items listed in SUB-O2(b).

The site is connected to Council services, and has / can have power and telecommunications (SUB-O3). The subdivision creates lots that are accessible, connected and integrated with the surrounding environment. There are no qualifying water bodies that require esplanade (SUB-O4).

SUB-P1 *Enable boundary adjustments that: ….*

Not relevant – application is not a boundary adjustment.

SUB-P2 *Enable subdivision for the purpose of public works, infrastructure, reserves or access.*

Not relevant – application does not involve public works, infrastructure, reserves or access lots.

SUB-P3 *Provide for subdivision where it results in allotments that:*
a. are consistent with the purpose, characteristics and qualities of the zone;
b. comply with the minimum allotment sizes for each zone;
c. have an adequate size and appropriate shape to contain a building platform; and
d. have legal and physical access.

The lots are consistent with the purpose, characteristics and qualities of the zone. They are of adequate size to contain a building platform and have legal and physical access.

SUB-P4
Manage subdivision of land as detailed in the district wide, natural environment values, historical and cultural values and hazard and risks sections of the plan

The site contains no waterbodies, areas of biodiversity, historical or cultural values or hazards.

SUB-P5
Manage subdivision design and layout in the General Residential, Mixed Use and Settlement zoneto provide for safe, connected and accessible environments by:
a. minimising vehicle crossings that could affect the safety and efficiency of the current and future transport network;
b. avoid cul-de-sac development unless the site or the topography prevents future public access and connections;
c. providing for development that encourages social interaction, neighbourhood cohesion, a sense of place and is well connected to public spaces;
d.contributing to a well connected transport network that safeguards future roading connections; and
e. maximising accessibility, connectivity by creating walkways, cycleways and an interconnected transport network.

The subdivision proposes to utilise an existing crossing for the majority of the lots, and construct a new crossing for one lot. Crossing locations allow for good sight distances and will not adversely affect the safety and efficiency of the road network. The proposal is in keeping with development on adjacent sites. Hall Road is an existing cul-de-sac road (no exit currently). This may change in the future. Hall Road is close to town and amenities and served by footpath, linking to the Kerikeri Road footpath network.

SUB-P6 *Require infrastructure to be provided in an integrated and comprehensive manner by:*
a. demonstrating that the subdivision will be appropriately serviced and integrated with existing and planned infrastructure if available; and
b. ensuring that the infrastructure is provided is in accordance the purpose, characteristics and qualities of the zone.

The sites are / will be serviced.

SUB- P7
Require the vesting of esplanade reserves when subdividing land adjoining the coast or other qualifying water bodies.

The site does not adjoin any waterbody.

SUB-P8 *Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision: ....*

Site is not zoned Rural Production.

SUB-P9
Avoid subdivision [sic] rural lifestyle subdivision in the Rural Production zone and Rural residential subdivision inthe Rural Lifestyle zone unless the development achieves the environmental outcomes required in the management plan subdivision rule.

The site is not zoned either Rural Production or Rural Lifestyle and the subdivision is not a Management Plan.

SUB-P10
To protect amenity and character by avoiding the subdivision of minor residential units from principalresidential units where resultant allotments do not comply with minimum allotment size and resi dential density.

Not applicable. There are no minor residential units.

SUB-P11
Manage subdivision to address the effects of the activity requiring resource consent including (but not limited to) consideration of the following matters where relevant to the application:
a.consistency with the scale, density, design and character of the environment and purpose of the zone;
b. the location, scale and design of buildings and structures;
c.the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;
d. managing natural hazards;
e. Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and
f. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

As the proposal does not require consent under the PDP, this policy is of limited relevance. In any event, I believe the proposal has adequately taken into account all of the matters listed above.

In summary I believe the proposed subdivision to be consistent with the PDP's objectives and policies in regard to subdivision.

General Residential Zone Objectives:

GRZ-O1
The General Residential zone provides a variety of densities, housing types and lot sizes that respond to:
a. housing needs and demand;
b. the adequacy and capacity of available or programmed development infrastructure;
c. the amenity and character of the receiving residential environment; and
d. historic heritage.

GRZ-O2
The General Residential zone consolidates urban residential development around available or programmed development infrastructure to improve the function and resilience of the receiving residential environment while reducing urban sprawl.

GRZ-O3
Non-residential activities contribute to the well-being of the community while complementing the scale, character and amenity of the General Residential zone

GRZ-O4
Land use and subdivision in the General Residential zone is supported where there is adequacy and capacity of available or programmed development infrastructure.

GRZ-O5
Land use and subdivision in the General Residential zone provides communities with functional and high amenity living environments.

GRZ-O6
Residential communities are resilient to changes in climate and are responsive to changes in sustainable development techniques.

The proposal hopes to provide for affordable and comfortable homes within easy walking distance of amenities. The sites are to be serviced. The proposal will not adversely impact on

the amenity the area. The site has no heritage values (GRZ-01). The proposal is a good example of practical and sensible in-fill urban development (GRZ-O2 & GRZ-O4). GRZ-O3 is not relevant. The site is not in any area subject to hazard and is within a managed stormwater area (GRZ-O5).

GRZ-P1
Enable land use and subdivision in the General Residential zone where:
a.there is adequacy and capacity of available or programmed development infrastructure to support it; and
b. it is consistent with the scale, character and amenity anticipated in the residential environment.

The future lots can be fully serviced and the outcome will be consistent with the scale of residential development provided for in the zone.

GRZ-P2
Require all subdivision in the General Residential zone to provide the following reticulated services to the boundary of each lot:
a. telecommunications:
i. fibre where it is available; or
ii. copper where fibre is not available;
b. local electricity distribution network; and
c. wastewater, potable water and stormwater where they are available.

The site is / can be serviced.

GRZ-P3
Enable multi-unit developments within the General Residential zone, including terraced housing and apartments, where there is adequacy and capacity of available or programmed development infrastructure.

GRZ-P4
Enable non-residential activities that: .....

GRZ-P5
Provide for retirement villages where they: .....

None of the above three policies are relevant to the proposal.

GRZ-P6
Encourage and support the use of on-site water storage to enable sustainable and efficient use of water resources.

It is hoped to connect all lots to town water supply. It would be feasible for the additional lots to collect roof run off to tank to supplement town supply.

GRZ-P7
Encourage energy efficient design and the use of small-scale renewable electricity generation in the construction of residential development.

This is a matter for future lot owners.

GRZ-P8
Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:
a. consistency with the scale, design, amenity and character of the residential environment;
b.the location, scale and design of buildings or structures, potential for shadowing and visual

dominance;
c. for residential activities:
i. provision for outdoor living space;
ii. privacy for adjoining sites;
iii. access to sunlight;
d. for non-residential activities:
i. scale and compatibility with residential activities
ii. hours of operation
e. at zone interfaces, any setbacks, fencing, screening or landscaping required to address potential conflicts;
f. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity, including:
i. opportunities for low impact design principles
ii. ability of the site to address stormwater and soakage;
g. managing natural hazards; and
h. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6

No consent is required under the PDP zone rules, so the above policy has little relevance. In any event this policy simply covers matters already addressed.

7.3 Part 2 Matters

5 Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The proposal provides for peoples' social and economic well being, and for their health and safety, while sustaining the potential of natural and physical resources, safeguarding the life-supporting capacity of air, water, soil and the ecosystems; and avoiding, remedying or mitigating adverse effects on the environment.

6 Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:
(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:
(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:
(f) the protection of historic heritage from inappropriate subdivision, use, and development:
(g) the protection of protected customary rights:
(h) the management of significant risks from natural hazards.

The application site does not contain or display any of the features, resources or values outlined in Section 6.

7 Other matters
In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—
(a) kaitiakitanga:
(aa) the ethic of stewardship:
(b) the efficient use and development of natural and physical resources:
(ba) the efficiency of the end use of energy:
(c) the maintenance and enhancement of amenity values:
(d) intrinsic values of ecosystems:
(e) [Repealed]
(f) maintenance and enhancement of the quality of the environment:
(g) any finite characteristics of natural and physical resources:
(h) the protection of the habitat of trout and salmon:
(i) the effects of climate change:
(j) the benefits to be derived from the use and development of renewable energy.

Regard has been had to any relevant parts of Section 7 of the RMA, "Other Matters". These include 7(b), (c), (d) and (f). It is considered that the proposal represents efficient use and development of a site. Proposed layout will ensure the maintenance of amenity values and the quality of the environment. The proposal has had regard to the values of ecosystems.

8 Treaty of Waitangi
In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

The principles of the Treaty of Waitangi have been considered and it is believed that this proposed subdivision does not offend any of those principles.

In summary, it is considered that all matters under s5-8 inclusive have been adequately taken into account.

7.4 National and Regional Planning Documents

There are no National Policy Statements relevant to the proposal, except perhaps the NPS on Urban Development 2020 – Updated May 2022 (NPS UD), whilst the Far North District Council is neither a Tier 1 nor Tier 2 local authority, it is worth noting the NPS UD's objectives and policies. These focus on improving housing affordability and enabling more people to live close to amenities in urban centres, in a variety of homes, along with the necessary infrastructure planning to be carried out. In fill development such as that proposed is entirely consistent with the objectives and policies of the NPS UD.

The application is subject to assessment pursuant to the NES-CS. This has been discussed earlier in this report. I have not identified any other relevant NES.

The Regional Policy Statement for Northland contains objectives and policies related to infrastructure and regional form and economic development. These are enabling in promoting sustainable management in a way that is attractive for business and investment; but also focus on ensuring that reverse sensitivity effects are avoided, remedied or mitigated.

I believe the proposal is consistent with the objectives or policies in the Regional Policy Statement for Northland.

8.0 CONSULTATION & S95A-E ASSESSMENT

8.1 S95A Public Notification Assessment

A consent authority must follow the steps set out in s95A to determine whether to publicly notify an application for a resource consent. Step 1 specifies when public notification is mandatory in certain circumstances. None of these circumstances exist and public notification is not mandatory. Step 2 of s95A specifies the circumstances that preclude public notification. None of these exist, and public notification is therefore not precluded. Step 3 of s95A must then be considered. This specifies that public notification is required in certain circumstances, none of which exist.

The application is not subject to a rule or national environmental standard that requires public notification. This report and AEE concludes that the activity will not have, nor is it likely to have, adverse effects on the environment that are more than minor. In summary public notification is not required pursuant to Step 3 of s95A.

In summary, public notification of this application is not required.

8.2 S95B Limited Notification Assessment

A consent authority must follow the steps set out in s95B to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified pursuant to s95A. Step 1 identifies certain affected groups and affected persons that must be notified. No such groups or persons exist in this instance. Step 2 of s95B specifies the

circumstances that preclude limited notification. No such circumstances exist and therefore limited notification is not precluded. Step 3 of s95B must be considered. This specifies that certain other affected persons must be notified, specifically:

(7) In the case of a boundary activity, determine in accordance with section 95E whether an owner of an allotment with an infringed boundary is an affected person.

(8) In the case of any other activity, determine whether a person is an affected person in accordance with section 95E.

The application is not for a boundary activity. No affected persons have been identified.

8.3 S95D Level of Adverse Effects

The AEE in this report assesses effects on the environment and concludes that these will be less than minor. As such public notification is not required.

8.4 S95E Affected Persons & Consultation

A person is an 'affected person' if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor). A person is not an affected person if they have provided written approval for the proposed activity.

The subdivision is a discretionary activity because the two Stage 2 lots are less than the controlled activity minimum lot size of 600m^2. However, Lot 2, containing the existing dwelling is substantially larger than the 600m^2 minimum area. The result is an average lot size larger than the controlled activity's 600m^2; and an overall residential intensity complying with the zone's permitted activity rules. Therefore in terms of density level, the proposal provides for no more than the permitted baseline or controlled activity subdivision density.

Future dwellings can comply with setback; height to boundary; height and building coverage permitted standards. Whilst consent is sought to breach the permitted impermeable coverage for the two smaller lots, this is only to the controlled activity level, and the supporting civil engineering report concludes that stormwater can be managed with no adverse off-site effects. The proposal will result in an increase in traffic movements once future lots are developed, but no more than a controlled activity subdivision of the same area of land. The application site is large enough to accommodate five lots as a controlled activity subdivision, and the proposal only seeks four lots. In summary I have not identified any adjacent properties as being adversely affected.

The site does not contain any heritage or cultural sites or values, and does not contain any water body, and only minimal earthworks are being proposed. The site does not contain any areas of indigenous vegetation or habitat. The site is not accessed off state highway. As such, no pre lodgement consultation has been considered necessary with tangata whenua, Heritage NZ, Department of Conservation or Waka Kotahi.

9.0 STAGE ONE AND TWO CONDITIONS

It is anticipated that the Council will impose reasonably standard conditions in regard to this consent, however it should be noted that staging results in care needing to be taken in separating physical works conditions into the appropriate stage, and in not duplicating any consent notice conditions the Council believes are required to be imposed.

The formation of a new vehicle crossing to Lot 4 is a Stage 2 condition only. Any work required on the existing crossing and ROW A & E, however, would be a Stage 1 condition. Both stages should include conditions requiring connections to services to the lots being created in each lot, e.g. Stage 2 would address Lot 4's connections.

Any consent notice conditions imposed on Lot 1 in Stage 1 need not be repeated in Stage 2 conditions given that those imposed in Stage 1 will carry down automatically in any event. It is proposed that the existing consent notice be cancelled in its entirety as applies to the application site/title (resolution required), and that a consent notice be imposed at Stage 1, to Lot 1 (to become Lots 4 & 5) in regard to retaining roadside landscaping where there isn't a crossing.

No conditions are necessary specifically in regard to the Decision consenting the subdivision under the NES-CS consent.

No conditions are considered necessary specific to the Stormwater Management breach for Lots 4 & 5 because any ongoing conditions the Council seeks to impose on those lots in regard to their stormwater management at time of building consent, can be imposed by way of a consent notice – imposed at Stage 2 (noting at Stage 1 there is no breach of any Stormwater Management rule). The technical breach of access rule relating to the surface of shared right of way, requires to specific conditions, because we are proposing no re-surfacing is required.

10.0 CONCLUSION

The site is considered suitable for the proposed subdivision. Effects on the wider environment are, I believe, capable of remedy and mitigation through conditions of consent, such that they will be less than minor. The proposal is considered consistent with the relevant objectives and policies of the Operative and Proposed District Plans, and relevant objectives and policies of the National and Regional Policy Statements, and consistent with Part 2 of the Resource Management. There is no District Plan rule or national environmental standard that requires the proposal to be publicly notified. There are no affected persons. It is requested that the Council give favourable consideration to this application and grant consent.

Lynley Newport Date 29th July 2025
SENIOR PLANNER
THOMSON SURVEY LTD

11.0 LIST OF APPENDICES

Appendix 1 Scheme Plan(s)

Appendix 2 Location Plan

Appendix 3 Record of Title and Current Interests

Appendix 4 Consultation with Top Energy and Chorus

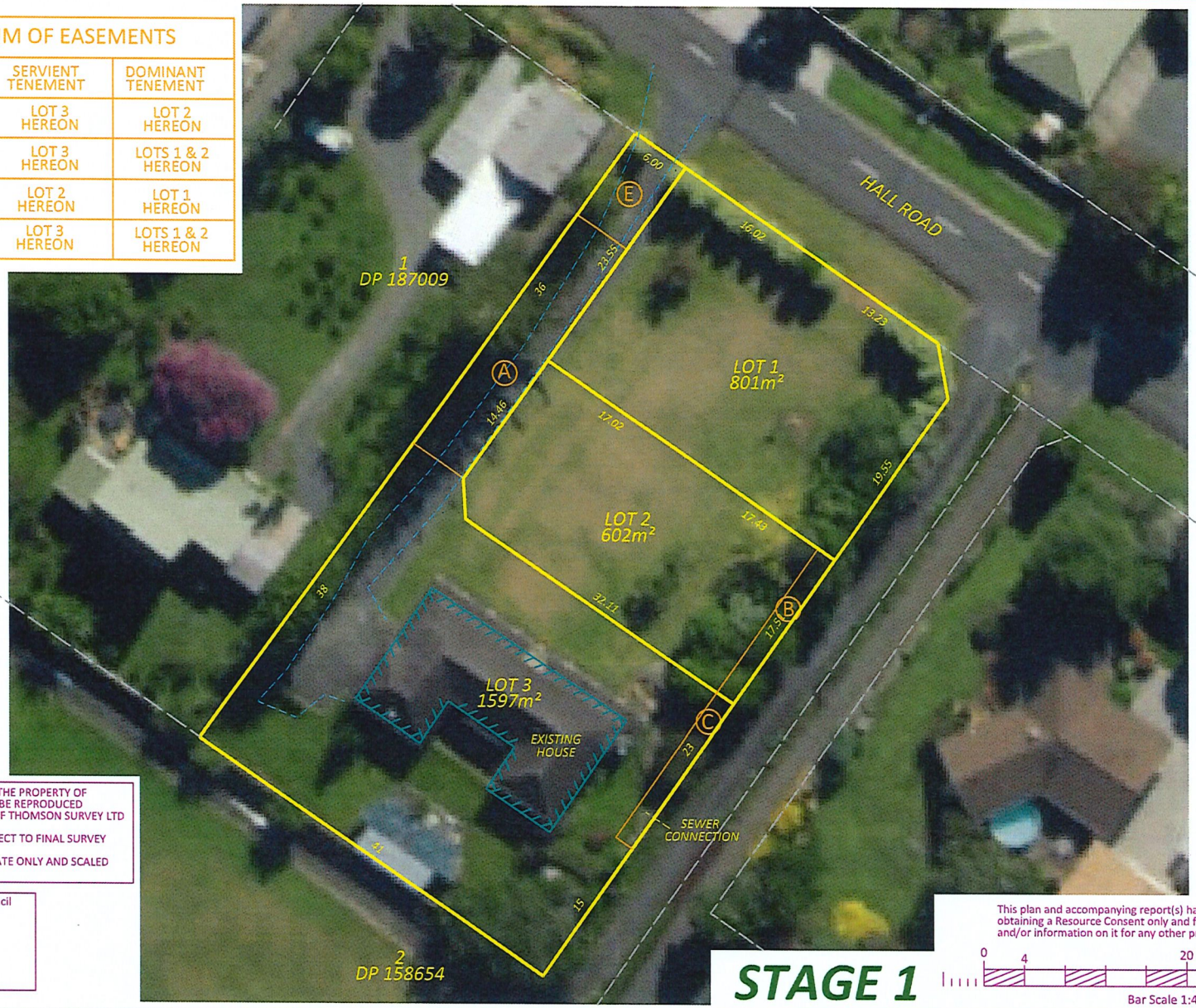
Appendix 5 Subdivision Site Suitability Engineering Report

Appendix 6 Combined Preliminary and Detailed Site Investigation Report

Appendix 1

Scheme Plan(s)

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNICATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	(A)	LOT 3 HEREON	LOT 2 HEREON
	(E)	LOT 3 HEREON	LOTS 1 & 2 HEREON
CONVEY SEWAGE	(B)	LOT 2 HEREON	LOT 1 HEREON
CONVEY SEWAGE	(C)	LOT 3 HEREON	LOTS 1 & 2 HEREON



THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF THOMSON SURVEY LTD AND MAY NOT BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THOMSON SURVEY LTD

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA117B/51
Total Area: 3000m²
Zoning: Residential
Resource features: NIL

STAGE 1

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 2 DP 187009

12 HALL ROAD, KERIKERI

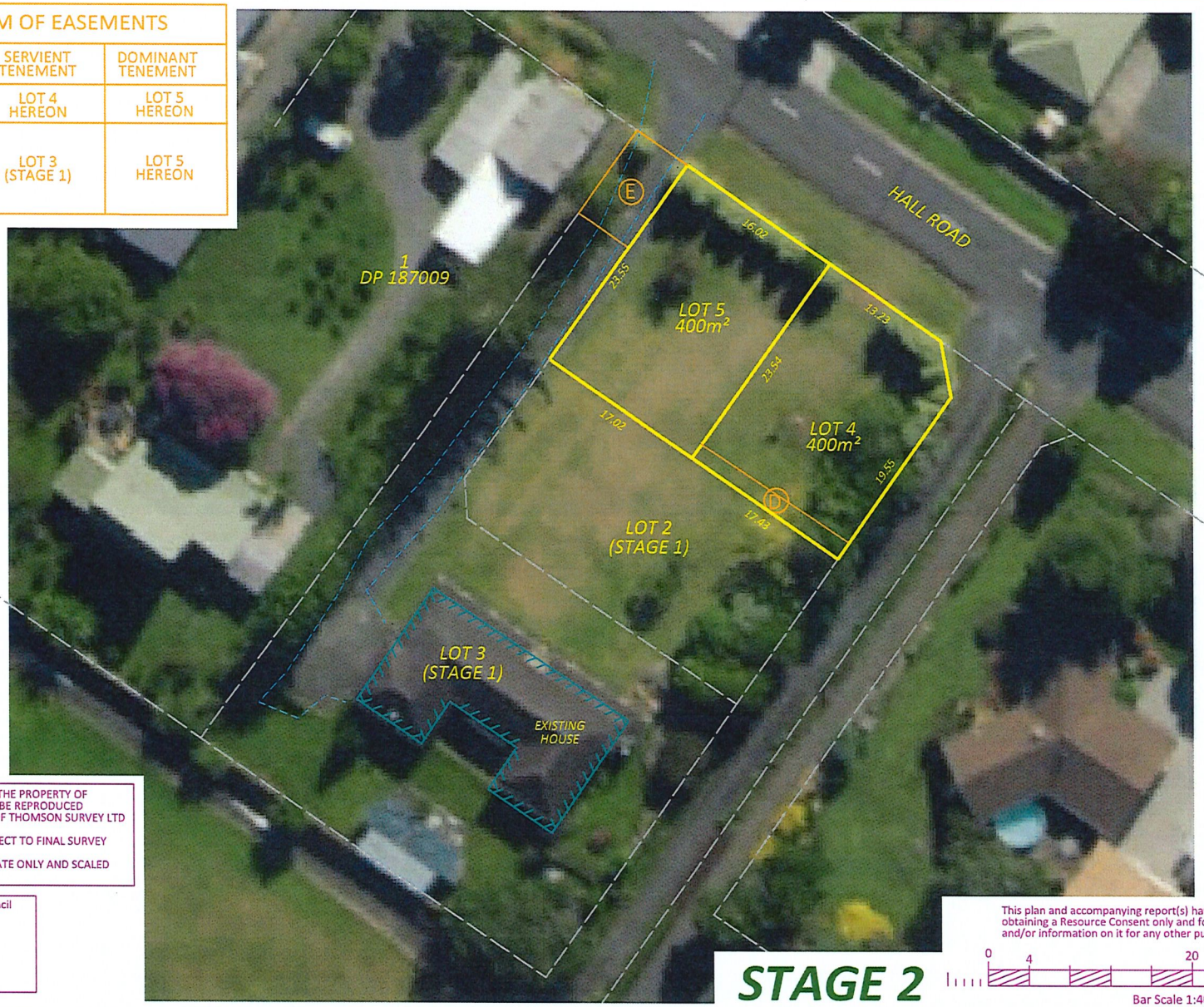
PREPARED FOR: JURISICH

	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev		

ORIGINAL
SCALE 1:400
SHEET SIZE A3
9221 SCHEME 1.LCD

Surveyors Ref. No: 9221

MEMORANDUM OF EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
CONVEY SEWAGE	(D)	LOT 4 HEREON	LOT 5 HEREON
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	(E)	LOT 3 (STAGE 1)	LOT 5 HEREON



AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: LOT 1 (STAGE 1)
Total Area: 801m²
Zoning: Residential
Resource features: NIL

STAGE 2

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 1 (STAGE 1)

12 HALL ROAD, KERIKERI

PREPARED FOR: JURISICH

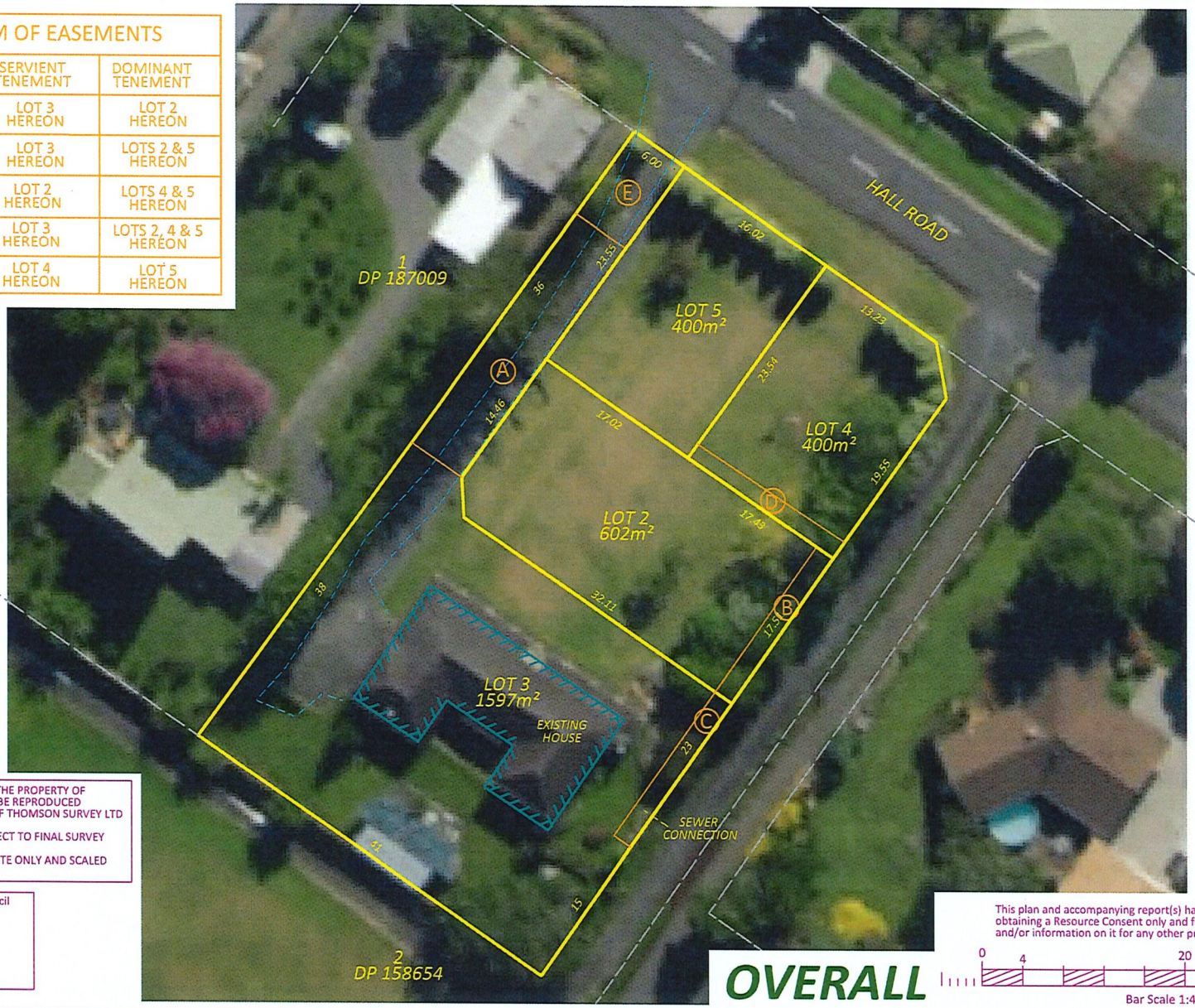
	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev	KY	25.02.25

ORIGINAL
SCALE 1:400
SHEET SIZE A3
10740 Scheme 20250225

Surveyors Ref. No: 10740

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNICATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	(A)	LOT 3 HEREON	LOT 2 HEREON
	(E)	LOT 3 HEREON	LOTS 2 & 5 HEREON
CONVEY SEWAGE	(B)	LOT 2 HEREON	LOTS 4 & 5 HEREON
	(C)	LOT 3 HEREON	LOTS 2, 4 & 5 HEREON
	(D)	LOT 4 HEREON	LOT 5 HEREON



Local Authority: Far North District Council
Comprised in: NA117B/51
Total Area: 3000m²
Zoning: Residential
Resource features: NIL

OVERALL

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 2 DP 187009

12 HALL ROAD, KERIKERI

PREPARED FOR: JURISICH

	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev	KY	25.02.25

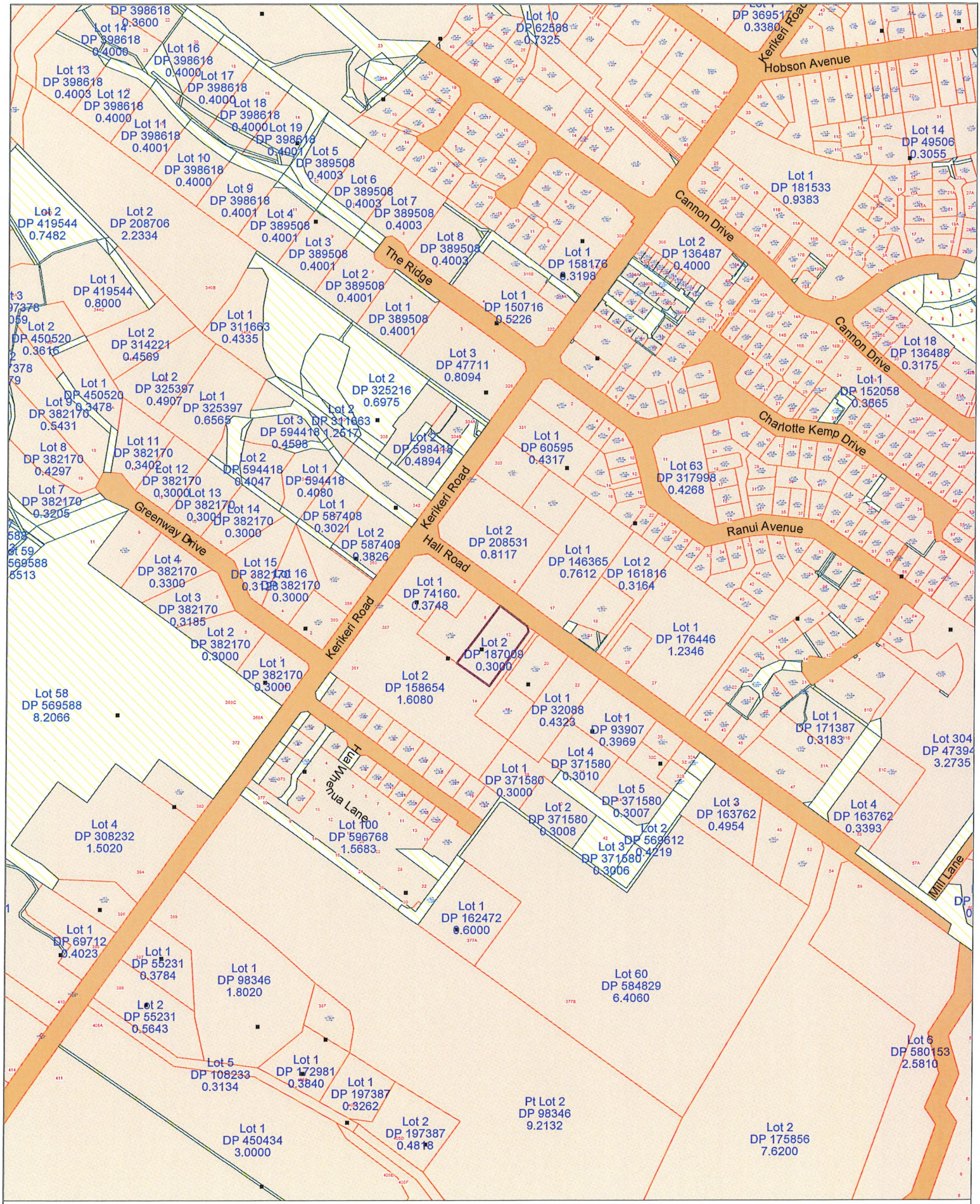
10740 Scheme 20250225

ORIGINAL
SCALE 1:400
SHEET SIZE A3

Surveyors Ref. No: 10740

Appendix 2

Location Plan



Appendix 3

Record of Title and Current Interests

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA117B/51**
Land Registration District	**North Auckland**
Date Issued	30 July 1999

Prior References
NA95A/905

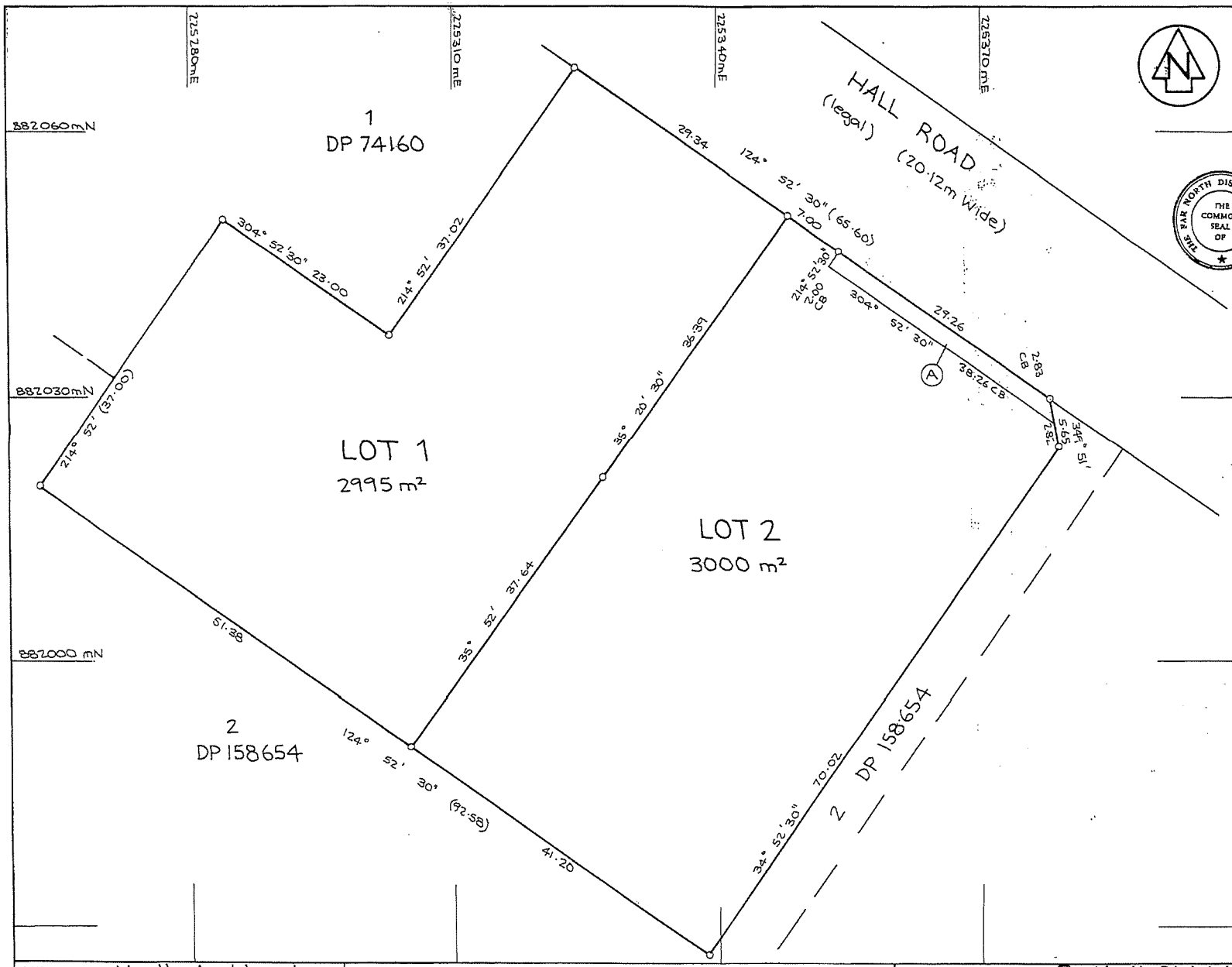
Estate	Fee Simple
Area	3000 square metres more or less
Legal Description	Lot 2 Deposited Plan 187009

Registered Owners
Brian Vincent Rosewarne and MWIS 2015 Limited as to a 1/2 share
Sonya Kay Jurisich and MWIS 2015 Limited as to a 1/2 share

Interests

Fencing Agreement in Transfer 272761
Fencing Agreement in Transfer 421731
D415095.2 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 30.7.1999 at 10.17 am

Nelson



Approvals

Registered Owners

Approved pursuant to Section 223 of the Resource Management Act 1991 on the 15th day of October 1997
The Common Seal of the Far North District Council is affixed hereto in the presence of:

THE FAR NORTH DISTRICT COUNCIL THE COMMON SEAL OF

DC 1970717 Under delegated authority

Area marked (A) is to be subject to a restrictive covenant.

New cst allocated
Lot 1 - 1178/50
Lot 2 - 1178/51

Total Area 5995 m²

Comprised in CT 95A/905 (All)

I, Denis McGregor Thomson of Kerikeri
Registered Surveyor and holder of an annual practising certificate (or who may act as a registered surveyor pursuant to section 25 of the Survey Act 1986) hereby certify that this plan has been made from surveys executed by me or under my directions, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof.
Dated at Kerikeri this 7th day of October 1997 Signature

Field Book ..... p. ..... Traverse Book ..... p. .....
Reference Plans .....
Examined ... Correct

Approved as to Survey
17/3/98
Deputy Chief Surveyor

Deposited this 30th day of July 1999
for Registrar-General of Land
District Land Registrar

File Received 13 JAN 1998
Instructions

DP 187009

LAND DISTRICT North Auckland
SURVEY BLK. & DIST. XI Keri Keri
NZMS 261 SHT ..... RECORD MAP No Keri Keri 13

LOTS 1 AND 2 BEING A SUBDIVISION OF LOT 1, DP 158654.

TERRITORIAL AUTHORITY Far North District
Surveyed by Thomson & King (Keri Keri)
Scale 1:300 Date September 1997

A.J. BEVIN, SURVEYOR GENERAL, LAND INFORMATION, NEW ZEALAND.

Ref 5281
Nelson

L.I.N.Z. FORM DIS "APPROVED MB2/03"

AARQUE

23 AUG 1999

D415095.2

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221: CONSENT NOTICE

CONO

REGARDING
The subdivision of Lot 1
Deposited Plan 158654

Pursuant to Section 221 and for the purposes of Section 224 of the Resource Management Act 1991, this Consent Notice is issued by **THE FAR NORTH DISTRICT COUNCIL** to the effect that the conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and subsequent owners after the deposit of the survey plan, and are to be registered on the appropriate new titles.

Schedule

(i) That all existing vegetation on the Hall Road roadside boundary of Lots 1 & 2 Deposited Plan 158654 be retained in perpetuity with the exception of vegetation required to be removed to permit one approved vehicle entrance to each of the Lots provided that the vehicle entrance to Lot 2 shall not be closer than 10 metres to the eastern boundary of Lot 2.

Both lots

(ii) That the Lot owners may undertake routine maintenance of the vegetation on the roadside boundary but the removal or replanting of any area will require the prior written approval of The Far North District Council.

Signed _____

For the Far North District Council pursuant to Section 252 of the Local Government Act 1974

Date 3 June 1999

LINZ COPY

10.17 30.JUL 99 D 415095 . 2

PARTICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
FOR REGISTRAR-GENERAL OF LAND

Both lots.

(2) CONS - 36

Appendix 4

Consultation with Top Energy and Chorus

TOP ENERGY
Te Puna Hihiko
www.topenergy.co.nz

Top Energy Limited
Level 2, John Butler Centre
60 Kerikeri Road
P O Box 43
Kerikeri 0245
New Zealand
PH +64 (0)9 401 5440
FAX +64 (0)9 407 0611

4 March 2025

Karen Yerkovich
Thomson Survey
PO Box 372
KERIKERI 0245

Email: karen@tsurvey.co.nz

To Whom It May Concern:

RE: PROPOSED SUBDIVISION
Sonya Jurisich, 12 Hall Road, Kerikeri. Lot 2 DP 187009.

Thank you for your recent correspondence with attached subdivision scheme plans.

Top Energy's requirement for this subdivision is that power be made available for the additional lots. Costs to make power available for the additional lots would be provided after application and an on-site survey have been completed.
Link to application: Top Energy | Top Energy

In order to get a letter from Top Energy upon completion of your subdivision, a copy of the resource consent decision must be provided.

If you have any further queries, please do not hesitate to contact the writer.

Yours sincerely

Aaron Birt
Planning and Design
T: 09 407 0685
E: aaron.birt@topenergy.co.nz

Chorus New Zealand Limited

24 July 2025

Chorus reference: 11308696

Attention: Lynley Newport

Quote: New Property Development

3 connections at 12 Hall Road , Kerikeri, Far North District, 0230

Your project reference: N/A

Thank you for your enquiry about having Chorus network provided for the above development.

Chorus is pleased to advise that, as at the date of this letter, we are able to provide reticulation for this property development based upon the information that has been provided:

Fibre network	$0.00
Pre-built fibre	$0.00

The total contribution we would require from you is **$0.00 (including GST)**. This fee is a contribution towards the overall cost that Chorus incurs to link your development to our network. This quote is valid for 90 days from 24 July 2025. This quote is conditional on you accepting a New Property Development Contract with us for the above development.

If you choose to have Chorus provide reticulation for your property development, please log back into your account and finalise your details. If there are any changes to the information you have supplied, please amend them online and a new quote will be generated. This quote is based on information given by you and any errors or omissions are your responsibility. We reserve the right to withdraw this quote and requote should we become aware of additional information that would impact the scope of this letter.

Once you would like to proceed with this quote and have confirmed all your details, we will provide you with the full New Property Development Contract, and upon confirmation you have accepted the terms and paid the required contribution, we will start on the design and then build.

For more information on what's involved in getting your development connected, visit our website www.chorus.co.nz/develop-with-chorus

Kind Regards

Chorus New Property Development Team

Appendix 5

Subdivision Site Suitability Engineering Report

geologix
consulting engineers

SUBDIVISION SITE SUITABILITY ENGINEERING REPORT

12 HALL ROAD, KERIKERI

BVR TRUST & SKJ TRUST PARTNERSHIP

C0641N-S-01
JUNE 2025
REVISION 1

geologix
consulting engineers

DOCUMENT MANAGEMENT

Document Title	Subdivision Site Suitability Engineering Report
Site Reference	12 Hall Road, Kerikeri
Client	BVR Trust & SKJ Trust Partnership
Geologix Reference	C0641N-S-01
Issue Date	June 2025
Revision	01
Prepared	Fred Sennoga Civil Design Engineer, BScEng Civil, MEngNZ
Reviewed	Sebastian Hicks Principal Civil Engineer, CPEng Reg. 1168062, CMEngNZ, IntPE(NZ) /APEC Engineer
Approved	Edward Collings Managing Director, CEnvP Reg. 0861, CPEng Reg. 1033153, CMEngNZ
File Reference	*C0641N-S-01-R01 draft*

REVISION HISTORY

Date	Issue	Prepared	Reviewed	Approved
June 2025	First Issue	FS	SH	EC

geologix
consulting engineers

TABLE OF CONTENTS

FIGURES

TABLES

1 INTRODUCTION

This Site Suitability Engineering Report has been prepared by Geologix Consulting Engineers Ltd (Geologix) for BVR Trust & SKJ Trust Partnership as our Client in accordance with our standard short form agreement and general terms and conditions of engagement.

Our scope of works has been undertaken to assist with the Resource Consent application in relation to the proposed subdivision of rural properties section Lot 2 DP 187009 situated along 12 Hall Road, Kerikeri, the 'site', into three new residential lots with a remaining balance lot.

Specifically, this assessment addresses engineering elements of natural hazards, wastewater, stormwater, water supply, firefighting, access and associated earthworks requirements to provide safe and stable building platforms with less than minor effects on the environment as a result of the proposed activities outlined in Section 1.1.

1.1 Proposal

A proposed scheme plan was presented to Geologix at the time of writing, prepared by Thomson Survey Ltd[1] and has been reproduced within Appendix A as Drawing No 100. It is understood from the scheme plan that there will be four separate lots comprising:

- Proposed Lot 2,4 & 5, which are proposed residential lots.
- Proposed Lot 3, which is the balance residential lot comprising the balance areas of section *Lot* 2 *DP* 187009. The above is summarised in Table 1. Any amendments to the referenced scheme plan may require an update to the recommendations of this report which are based on conservative, typical residential development concepts.

The site is located in a residential zone as per the FNDC Operative District Plan.

Table 1: Summary of Proposed Subdivision

Proposed Lot No.	Size	Purpose
2	0.0400 ha	New residential
4	0.0602ha	New residential
5	0.0400ha	New residential
3	0.1597 ha	Balance Lot

Site access for lots 2, 3 & 5 will be provided from Hall Road from a combined existing vehicle crossing and right of way. Lot 4 will require a new vehicle crossing from Hall Road, on the northern boundary of the lot. A specific Traffic Impact Assessment (TIA) is not within the scope of this report.

[1] *Thomson Survey, PROPOSED SUBDIVISION OF LOT 2 DP 187009*

2 DESKTOP APPRAISAL

The site is legally described as LOT 2 DP 187009 and designated by the FNDC Operative District Plan a "Residential" zone. The site is located along the southern side of Hall Rd, Kerikeri. It has a regular alignment to define the western, southern and eastern boundary of the site. Topographically, the site area is flat and gently slopes radially towards the eastern corners of the site boundary. The overall slope of the terrain is gentle towards the northeast and southeast corners of the site from about 87.5m to 86.5m.

The site setting is presented schematically as Figure 1 below.

Figure 1: Site Setting

Figure 2. Existing Site Layout and Services (FNDC GIS)

The entire site area is currently covered by grass and shrubbery. There is an existing dwelling structure present within the site boundaries in the balance Lot 3 towards the southwestern boundary. There is also an above ground concrete water tank and pumphouse structure located near the southeastern corner of the site.

2.1 Existing Reticulated Networks

Far North District Council (FNDC) GIS mapping indicates that existing public three waters infrastructure and reticulated networks are present near 12 Hall Road.

According to council records there is an existing water supply line running along the verge of Hill Road.

A 50mm pressure sewer line services the site, connecting to the 100mm pressure line in Hall Road and the intersection with the private accessway that runs along the southeastern site boundary. This 50mm line runs down the full length of the right of way, and there is an existing lot connection and boundary kit adjacent to the existing dwelling.

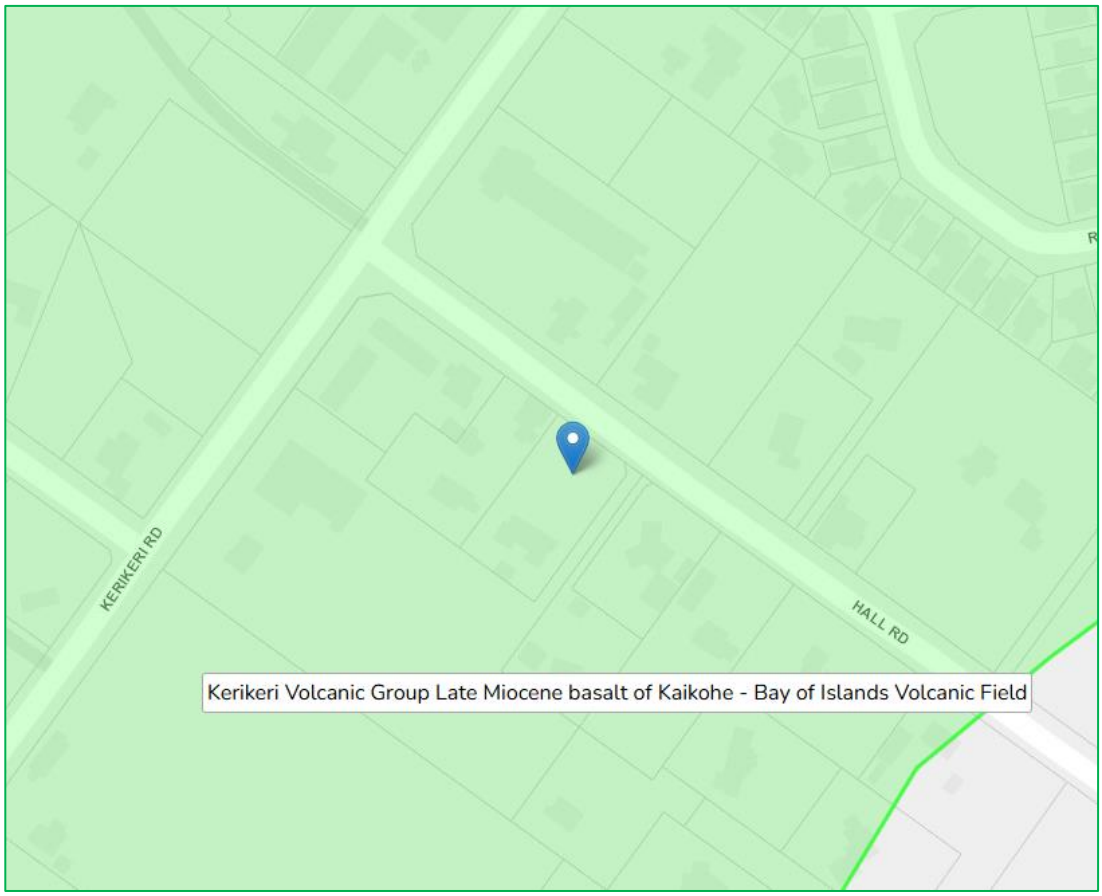
Existing Stormwater drains are visible between Hall Road and the proposed northern boundary of the existing site. These drains capture and guide stormwater in a southeasterly direction through culverts towards a local low point of Hall Road, east of the site.

This report has been prepared with the goal of the subdivision and future development connecting into the existing wastewater, stormwater, and potable water supply.

2.2 Geological Setting

Available geological mapping[2] indicates the site to be directly underlain by Kerikeri Volcanic Group Late Miocene basalt of Kaikohe - Bay of Islands Volcanic Field. These Neogene igneous rocks (basalt)can be expected to contain Basalt lava material, volcanic plugs and minor tuff material. Refer to Figure 3 below:

Figure 3: Geological Map on site boundaries.



2.3 Existing Geotechnical Information

Existing ground investigations were not made available to Geologix at the time of writing. Furthermore, a review of available GIS databases, including the New Zealand Geotechnical Database,[3] did not indicate borehole records within 500 m of the site.

[2] *Geological & Nuclear Science, 1:250,000 scale Geological Map, Sheet 2, Whangarei, 2009.*
[3] https://www.nzgd.org.nz/

3 SURFACE WATER FEATURES AND OVERLAND FLOWPATHS

During our site walkover and desktop appraisal of GIS topographic data, Geologix have developed an understanding of the surface water features and overland flow paths influencing the site. This is summarised in the following sections.

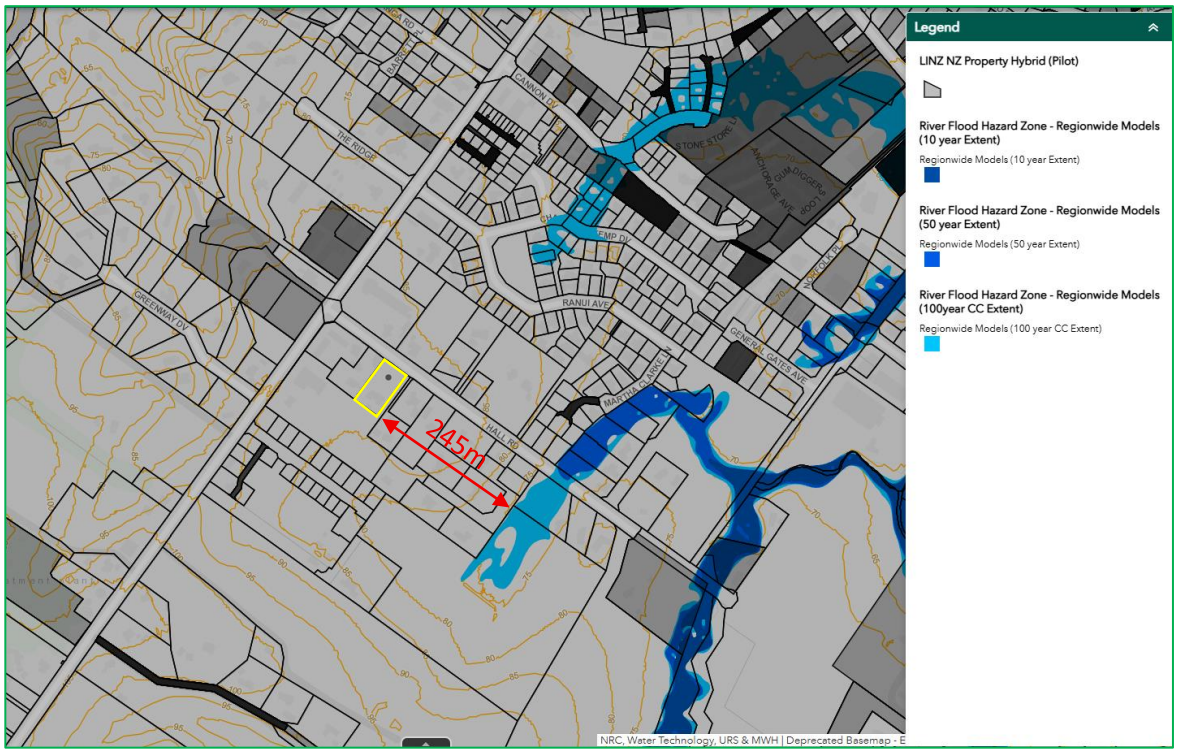
3.1 Surface Water Features

The site is at the lower elevations of an existing catchment.

Stormwater will flow as sheet flow in an easterly and southeasterly direction across the site towards the eastern and south-eastern corners of the site. Stormwater should then flow east along Hall Road and towards the nearby Wairoa Stream catchment.

There is a mapped flood hazard (100year CC River Flood Regionwide Model) located around 245m southeast of the site, at around elevation 75m, at the existing low point on Hall Road and connection to an existing overland flow path. The nearest site corner boundary is at around elevation 86.5m. Refer Figure 4 below.

Figure 4: NRC River Hazard Extents Relative to Site



3.2 Sensitive Receptors

Based on GIS data, national topographic maps and survey data provided at the time of writing we do not understand there to be sensitive receptors such as wetlands at the site.

However, we have not been engaged to provide an ecological assessment of the site or surface water features.

3.3 Overland Flow Paths

There are no defined overland flow paths evident within the site boundaries of the relatively flat to gentle sloping land. It is anticipated that surface water could move as sheet flow following the natural topography towards the eastern and southeastern corners of the site.

Our walkover survey was undertaken in May during a relatively wet period and noted no significant flow via overland flow paths.

4 SITE OBSERVATIONS

A site-specific walkover survey was undertaken by Geologix on 30 May 2025.

4.1 Site Walkover Survey

A visual walkover survey of the property confirmed the following:

- The topographical understanding of the site developed from our desktop study, as outlined in Section 2, is in general accordance with that observed on site.
- Suitable building envelopes[4] can be formed on gently sloping land <10°.
- Hall Road defines the general northern site boundary in terms of the Lot 3's access, Lot 5 and 4. The proposed Lot 2, is enveloped by the Lot 3 accessway and Lot 5 and Lot 4 and the existing eastern private accessway.
- Nearby land in all directions includes similar urban properties with lawns and shrubbery. Recent intensification development was not evident on immediately adjacent lots.
- An existing single-story dwelling structure is located towards the southern aspect of the balance lot, Lot 3.
- An existing vehicle crossing and driveway is situated along the western boundary of the site. The metal surface driveway is 3m wide and is in a fair to good condition. It comprises tightly bound metal aggregate with a flush concrete kerb edge restraint on each side. It leads onto an exposed concrete hardstand section located west of the existing dwelling structure.
- Existing stormwater infrastructure is represented by a water table drain located in the verge of Hall Road near the Site's northern boundary. This public SW drain conveys

[4] *Measuring 14 m x 14 m according to FNDC District Plan Rule 13.7.2.2.*

stormwater along the road and under existing vehicle crossing culverts. There was no visible evidence of existing onsite attenuation at the site.

- An existing water supply meter was found in Hall Road near the northwestern corner of the site. It is presumed to be the water meter that services the existing house on the site.
- An existing private pressure sewer connection was found at the rear of the existing site along the eastern boundary. An ecoflow eOne power supply panel, tank with pumping unit and boundary kit are visible.

5 WASTEWATER ASSESSMENT

The scope of this wastewater assessment comprised a ground investigation to ascertain a lot-specific wastewater disposal classification for concept design of suitable systems for a probable future residential development. Relevant design guideline documents adopted include:

- Watercare, Water and Wastewater Code of Practice for Land Development and Subdivision, Version 1.5, dated May 2015.
- FNDC Engineering Standards, Version 0.6, Date Issued: May 2023.

5.1 Existing Wastewater Systems, Reticulated Network

An existing private wastewater pressure sewer system has been identified within the site boundaries. This system is located along the eastern boundary of the site.

FNDC GIS infrastructure data maps indicate that the existing site is serviced by the following infrastructure:

- 50mm public pressure wastewater line (Asset ID: 20180921130317) that flows along the existing ROW northeast connecting to the 75mm public pressure wastewater network located within the northern verge of Hall Road (Asset ID: WWLN74279).
    - This line also connects 3 other properties between 12 Hall Road connection and the main branch.
- 40mm private pressure PE wastewater lot connection (Asset ID: 20181008160909) including:
    - Pressure sewer boundary kit (Asset ID: 20181001154323)
    - Low-pressure sewer (LPS) pump station (Asset ID: 20181002115216) services the site via a 40mm PE private wastewater pipe that connects into an adjacent 50mm PE public pressure sewer line

- This connection will remain in place to service the proposed balance lot, Lot 3.

5.2 Wastewater Proposal

The proposed wastewater infrastructure associated to the establishment of the subdivision includes the provision of three new boundary kits to be installed onto the existing public 50mm PE public sewer line that is positioned in the existing ROW adjacent the site's eastern boundary. Refer Drawing Sheet 100 in Appendix A.

These boundary kits will provide future wastewater connections Lot 2, 4 & 5 which may pump or gravitate to the boundary kit as required (to be detailed at building consent stage). The installation of the boundary kits will require a connection request to FNDC.

5.3 Wastewater Generation Volume

According to the FNDC Engineering Standards, Section 5.2.2.2, residential design flows have been taken as follows.

Table 2: Residential Wastewater Design Flows

Design Item	Criteria
Average dry weather flow	200 litres/ day/ person
Dry weather diurnal Peaking Factor	2.5
Wet weather diurnal Peaking Factor	5
Peak wet weather flow (PWWF)	1000 litres/ day/ person
No. of people per dwelling	4

For the concept wastewater design, this provides a total daily wastewater generation of 4,000 litres/ day per proposed lot.

5.4 Summary of Concept Wastewater Design

Based on the above design assumptions a concept wastewater design is presented in Table 3 and presented schematically upon Drawing No. 100 (Appendix A), also shown in Figure 5. It is recommended that each lot is subject to Building Consent specific review and design amendment according to final development plans.

Figure 5: Proposed Services

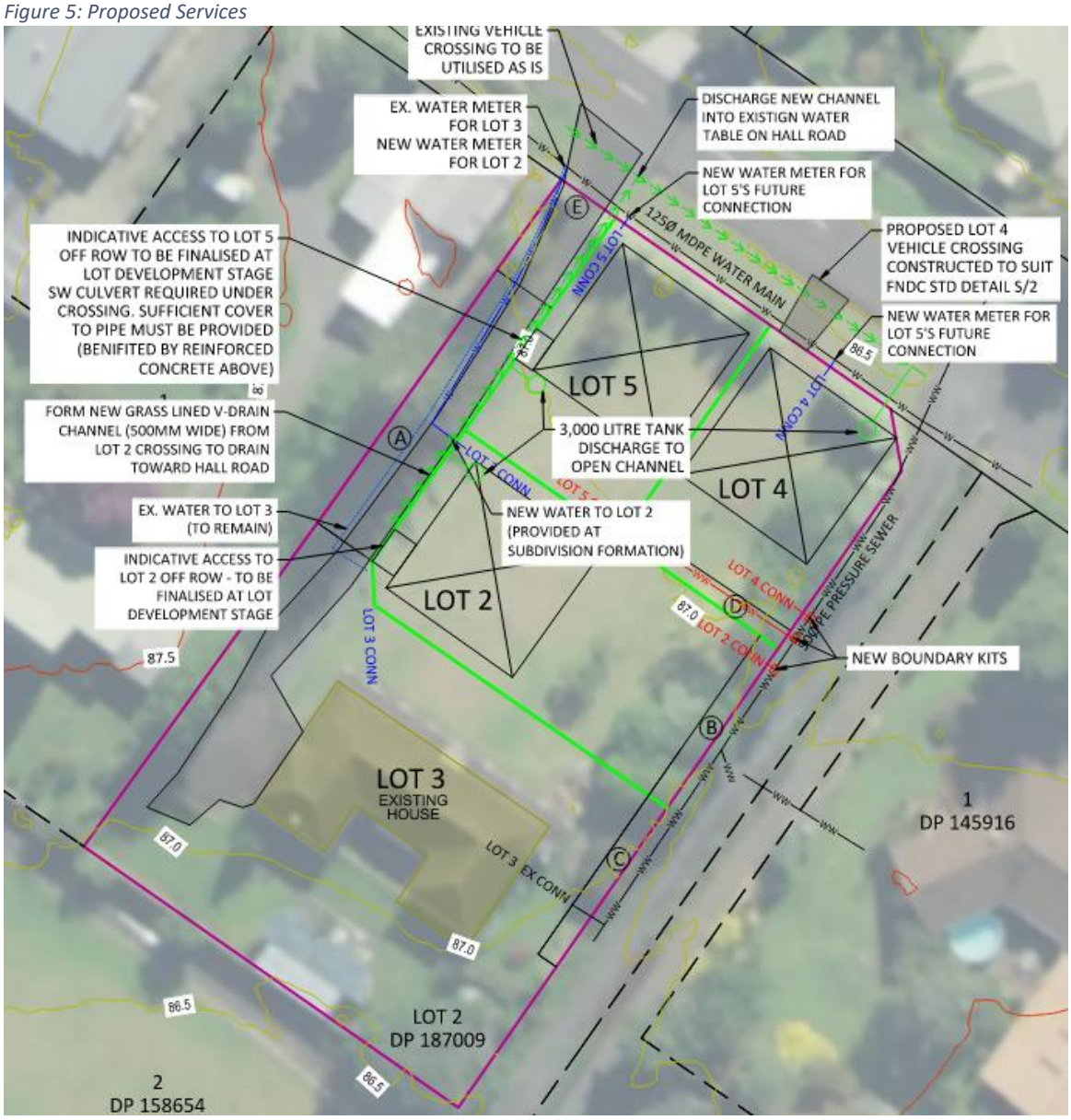


Table 3: Concept Wastewater Design Summary

Design Element	Specification
Concept development	Residential units, peak occupancy of 4 (per household unit)
Design generation volume	4,000 litres/ day per proposed lot
Water saving measures	Standard. Combined use of 11 litre flush cisterns, automatic washing machine & dishwasher, no garbage grinder[1]
Water meter required?	yes
Min. Treatment Quality	Drainage to public sewer for conveyance to wastewater treatment plant
Lateral connection	40mm PE pipe

1. Unless further water saving measures are included.

6 STORMWATER ASSESSMENT

Considering the nature of urban subdivision and residential development, increased storm water runoff occurs as pervious surfaces such as pasture are converted to impervious features such as roads or future on-lot buildings and driveways.

6.1 Regulatory Requirements

Stormwater management for the proposed activity is controlled by the FNDC Operative District Plan[5]. The requirement for subdivision and probable future development under this legislation is summarised below.

6.1.1 District Wide Provisions

Subdivision activity and provisions for probable future development within urban residential environments is controlled by District Plan Rule 13.10.4. In relation to both urban and rural residential subdivision the following apply which this concept design provisions for:

(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.

(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).

(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.

(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.

(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.

(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.

(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.

[5] *https://www.fndc.govt.nz/Your-Council/District-Plan/Operative-plan*

(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.

(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.

(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.

(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.

(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.

(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.

(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.

(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.

(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.

(q) The need for and extent of any financial contributions to achieve the above matters.

6.1.2 The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided. Environmental Zone Provisions

Controlled activity status for proposed impervious surface areas within the urban residential zone is determined by Rule 7.6.5.2.1 which is presented below.

The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 60% or 600m^2, whichever is the lesser.

6.2 Impervious Surfaces and Activity Status

The proposed activity has been assessed in accordance with rules outlined by Sections 6.1.1 to 6.1.2. A summary of this is provided as Table 4 below which has been developed from the proposed scheme plan.

For the design concept for future development of proposed Lot 4 & 5, for each Lot the following has been considered:

- Total impervious area of 240 m^2, including;
    - a typical urban residential roof of 180 m^2
    - associated driveways/ car parking area of 60 m^2

This represents **60%** total impervious area of the gross Lot 4 & 5 site and is therefore considered as **Controlled Activity**.

We have considered the following existing impervious surfaces in proposed Lot 2

- Total impervious area of 301 m^2, including:
    - a typical urban residential roof of 201 m^2
    - associated driveways/ car parking area of 100 m^2

This represents **50% coverage** of the proposed lot 2 site area of 602 m^2 and is therefore considered as **Permitted Activity.**

We have considered the following existing impervious surfaces in proposed Lot 3 (existing lot):

- Total impervious area of 536 m^2, including:
    - existing park area within proposed Lot 3 (impervious area of 67 m^2),
    - existing driveway (impervious area of 170 m^2),
    - existing dwelling (total roof area of 297 m^2)

This represents **33.6% coverage** of the proposed lot 3 site area of 1597 m^2 and is therefore considered as **Permitted Activity**.

The activity status reflected in Table 5 is with respect to Operative FNDC Plan Section 7.6.5.1.6 only.

Table 4: Summary of Impervious Surfaces

Surface	Proposed Lot 5,4		Proposed Lot 2		Proposed Lot 3	
Existing Condition	**(400 m²)**		**(602 m²)**		**(3,000 m²)**	
Roof	0 m²	0 %	0 m²	0 %	297 m²	9.9 %
Driveway+Carpark	0 m²	0 %	0 m²	0 %	239 m²	8.0 %
Right of Way	0 m²	0 %	0 m²	0 %	0 m²	0 %
Total impervious	0 m²	0 %	0 m²	0 %	536 m²	17.9 %
Proposed Condition	**(400 m²)**		**(602 m²)**		**(1597 m²)**	
Roof	180 m² (Concept)	45.0 %	201 m²	33.4 %	297 m²	18.6 %
Driveway	60 m² (Concept)	15.0 %	100 m²	16.6 %	33 m²	2.1 %
Right of Way	0 m²	0 %	0 m²	0 %	206 m²	12.9 %
Total impervious	240 m²	60 %	301 m²	50.0 %	536 m²	33.6 % (<PA = 50%)
Activity Status	**Controlled**		**Permitted**		**Permitted**	

6.3 Stormwater Management Concept

The stormwater management concept considered in this report has been prepared to meet the requirements of the local and regional consent authorities considering the design storm event. This concept is as follows:

- **Probable Future Development (Lot 5 & 4).** The proposed application includes subdivision formation only and not lot-specific residential development at this stage. However, a conservative model of probable future on-lot development has been developed for this assessment considering variation of scale in typical rural residential development.

  The probable future on-lot development concept includes up to 180 m² potential roof area and up to 60 m² potential driveway or parking areas per lot. The latter has been modelled as an offset within lot-specific attenuation devices. Additional areas of ROW driveway over and above the afore mentioned 60m² will be added to the offset attenuation volume.

- **Probable Future Development (Lot 2).**

  The probable future on-lot development concept includes up to 201 m² potential roof area and up to 100 m² potential driveway or parking areas per lot. The latter has been modelled as an offset within lot-specific attenuation devices. Additional areas of ROW driveway over and above the afore mentioned 100m² will be added to the offset attenuation volume.

Generally, the stormwater discharge from each lot will be as follows:

- Lot 4: Attenuate roof rainwater in tank; controlled discharge from level spreader directly to Hall Road boundary.
- Lot 5: Attenuate roof rainwater in tank; controlled discharge from level spreader directly to ROW channel drain.
- Lot 2: Attenuate roof rainwater in tank; controlled discharge from level spreader directly to ROW channel drain.
- Lot 3: existing discharge to remain and or directed through new channel through ROW.
- **Subdivision Development.** Access to each of proposed lots 3, 2 & 5 will be established by the existing vehicle crossing to the western boundary from Hall Road. These impervious surfaces will produce an insignificant increase in runoff, with less than minor adverse effect on environment, therefore requiring no attenuation.

6.4 Design Storm Event

Relevant design rainfall intensity and depths have been ascertained for the site location from the NIWA HIRDS meteorological model[6]. The NIWA HIRDS rainfall data is presented in full within Appendix D. Provision for climate change has been adopted by means of applying a factor of 20 % to rainfall intensities, in accordance with FNDC Engineering Standards 2023.

Table 4-1 stipulates that flow attenuation controls reduce the post-development peak discharge to 80% of the pre-development condition for the 50% and 20% AEP storm event. To be compliant with the above rules, the attenuation modelling within this report has been undertaken for all the above storm events. The results are summarised in Table 6 with calculations provided in full in Appendix .

Furthermore, the concept design has also considered the 10 % AEP pre-development requirement to comply with NRP Rule C6.4.2(2) and with the Operative District Plan 13.10.4. Attenuation modelling under this scenario avoids exacerbating downstream flooding and provides for sufficient flood control as presented in the FNDC Engineering Standards.

Noting the flood hazard downstream identified on the NRC hazard maps, this assessment has been modelled not to provide stormwater attenuation for the 1% AEP storm event.

The site is situated in the lower part of the catchment, with only a short distance and a dedicated flow path (Hall Road) to reach its outlet point in a 1% AEP event. The Hall Road site and sub catchment is located relatively low in the catchment, therefore it has been determined to be more advantageous to allow this flow to discharge earlier than the overall catchment peak. Therefore, attenuation has not been provided for the 1% AEP event.

[6] *NIWA High Intensity Rainfall Data System, https://hirds.niwa.co.nz.*

Outlet dispersion devices have been designed to manage the 10% AEP event to reduce scour and erosion at discharge locations.

6.5 Concept Stormwater Attenuation

Based on the design storm events indicated above and the corresponding modelling results (in Appendix) an attenuation concept to suit the maximum storage requirement has been provided. In this case the concept limits the post-development peak discharge to the pre-development condition for the 10% AEP storm event. This is achievable by installing specifically sized low-flow orifices into the attenuation devices.

The rational method has been adopted by Geologix with run-off coefficients as published by FNDC Engineering Standards[7] to provide a suitable concept attenuation design to limit post-development peak flows to pre-development conditions (or 80% of pre-dev for 50 and 20% AEP). The proposed devices with the concept design are listed below:

- Roof Runoff Tanks

Conceptual storage and outlet requirements within the tanks are included in Appendix and a typical schematic retention/ detention tank arrangement detail is presented as Drawing No. 401 within Appendix A.

Table 5: Summary of Concept Stormwater Attenuation

Item	Pre-development Impervious Area	Post-development Impervious Area	Proposed Concept Attenuation Method
Future Concept Development (Lot 4 &5)			
Potential buildings	0 m^2	180 m^2	Detention within roof water tanks
Potential driveways/park	0 m^2	60 m^2	Off-set detention in roof water tanks
Total	**0 m^2**	**240 m^2**	
Future Concept Development (Lot 2)			
Potential buildings	0 m^2	201 m^2	Detention within roof water tanks
Potential driveways/park	0 m^2	100 m^2	Off-set detention in roof water tanks
Total	**0 m^2**	**301 m^2**	

Calculations to support the concept design are presented as Appendix to this report. A summary of the probable future development attenuation concept design is presented as Table 6. As above, it is recommended that this concept design is refined at the Building Consent stage once final development plans are available.

[7] *FNDC Engineering Standards 2023, Version 0.6, Issued May 2023.*

Table 6: Probable Future Development Attenuation Concept - Tanks

Design Parameter	Flow Attenuation: 50 % AEP (80% of pre-dev)	Flow Attenuation: 20 % AEP (80% of pre-dev)	Flood Control: 10 % AEP
LOT 4 & 5 CONCEPT			
Regulatory Compliance	FNDC Engineering Standards Table 4-1	FNDC Engineering Standards Table 4-1	NRC Proposed Regional Plan
Pre-development peak flow	6.10 l/s	7.89 l/s	9.20 l/s
80 % pre-development peak flow	4.88 l/s	6.31 l/s	*N/A*
Post-development peak flow	7.95 l/s	10.28 l/s	11.99 l/s
Total Storage Volume Required	1115 litres	1441 litres	1687 litres
Concept Summary:	- Attenuation storage calculation accounts for offset flow from 60 m^2 driveway (not explicitly indicated in summary above. Refer Appendix D for calcs in full) - Attenuation for 10 % AEP storm represents maximum storage requirement and is adopted for the concept design tank storage. - 1 x 3,000 litre tank is sufficient for attenuation, with 45mm Ø orifice positioned 0.15m above tank invert. - 10 % AEP attenuation (in isolation) requires a 45 mm orifice 0.15m above tank invert (bottom 150mm reserved for sediment retention). However regulatory requirements are to consider an additional orifice/s to control the 50 %, 20 % AEP events specifically. We note this may vary the concept orifice indicated above. Generally this results in slightly larger volume requirements, therefore we have allowed for 3000l tank in the concept, rather than a 2000l tank. This should be considered with detailed design for building consent approval.		
LOT 2 CONCEPT			
Regulatory Compliance	FNDC Engineering Standards Table 4-1	FNDC Engineering Standards Table 4-1	NRC Proposed Regional Plan
Pre-development peak flow	9.19 l/s	11.87 l/s	13.85 l/s
80 % pre-development peak flow	7.35 l/s	9.50 l/s	*N/A*
Post-development peak flow	11.97 l/s	15.47 l/s	18.04 l/s
Total Storage Volume Required	1,860 litres	2,403 litres	2,811 litres
Concept Summary:	- Attenuation storage calculation accounts for offset flow from 100 m^2 driveway (not explicitly indicated in summary above. Refer Appendix D for calcs in full) - Attenuation for 10 % AEP storm represents maximum storage requirement and is adopted for the concept design tank storage. - 1 x 3,000 litre tank is sufficient for attenuation, with 36mm Ø orifice positioned 0.15m above tank invert.		

	- 10 % AEP attenuation (in isolation) requires a 36 mm orifice 0.15m above tank invert (bottom 150mm reserved for sediment retention). However regulatory requirements are to consider an additional orifice/s to control the 50 %, 20 % AEP events specifically. We note this may vary the concept orifice indicated above. Generally this results in slightly larger volume requirements, We have allowed for a 3000l tank in the concept, however this may increase when considering the 50 %, 20 % AEP events. This should be considered with detailed design for building consent approval.

6.6 Subdivision Development Management

It is proposed that a new grass lined channel drain be constructed adjacent to the south-eastern edge of the existing driveway, to be incorporated into the proposed ROW. This channel will provide formal stormwater connection for proposed Lot 2 and 5.

It is noted that Lot 4's vehicle crossing will traverse an open stormwater drain flow path adjacent Hall Road that runs near the boundary of Lot 5 and 4. It is recommended that a stormwater culvert is provided beneath this crossing. Refer Section 9 for more detail on vehicle crossings.

6.7 Stormwater Quality

The proposed application is for a rural residential subdivision and future development. The key contaminant risks in this setting include:

- Sediments and minor contaminants washed from impervious surfaces.
- Leaf matter, grass, and other organic debris.

Stormwater treatment requirements are minor to maintain good quality stormwater discharge. Stormwater quality will be provided by:

- Leaf guards on roof guttering/ first flush devices on roof guttering and downpipes.
- Rainwater tank for potable use onsite only to be filled by roof runoff.
- Room for sedimentation (minimum 150 mm recommended as per Auckland Council GD01) within the base of the stormwater attenuation roof runoff tanks as dead storage volume.
- Stormwater discharges directed towards roading swale drains where possible.
- Grassed swale drains from rainwater inception (road surfaces) to discharge points, where required.

The risk of other contaminants being discharged out of the site boundaries (hydrocarbons, metals etc.,) as a result of the proposed activities once stormwater has been processed through the above measures that will affect the downstream water quality is considered low.

7 POTABLE WATER & FIRE FIGHTING

The site is located within a well-established public water supply area and is currently located adjacent to a public 125 mm MDPE water supply main pipeline outside the northeastern boundary. The existing water connection to the existing house will be reused for serving the proposed lot 3. New water meters for Lot 2, 4 and 5 will be installed within the berm area of Hall Road, as presented in Drawing Sheet 100 in Appendix A. Lot 2 will require a length of private pipeline to be installed to its boundary from Hall Road (within the ROW) at the time of subdivision formation.

There are two fire hydrants within Hall Road north of the site approximately 62 m and 102 m from the site entrance.

The fire-fighting requirements for the proposed development are determined to be FW2 in accordance with the SNZ PAS 4509:2008, New Zealand Fire Service Firefighting Water Supplies Code of Practice. The standard requires a minimum of two fire hydrants – one within 135 m, and the second within 270m to the entrance of the furthest property.

According to above assumption, the proposed developments comply with the SNZ PAS 4509:2008, New Zealand Fire Service Firefighting Water Supply Code of Practice.

Specific analysis and calculations for firefighting is outside the scope of this report and may require specialist input. Supply for firefighting should be made in accordance with SNZ PAS4509:2008.

8 EARTHWORKS

The following earthworks provisions are anticipated for subdivision formation only:

- **New channel along ROW.** Grass lined vee channel alongside existing private accessway (ROW) from Hall Road to Lot 2 boundary corner. Formed at subdivision formation.
- **Service trenching**. Water and wastewater pipeline trenching and connections to existing public services.

The above earthworks will be limited to approximately 100m³.

Proposed earthwork volumes are within the 200m³ permitted activity volume limit outlined by FNDC District Plan Rule 12.3.6.1.3(a) and the maximum cut and fill height of <3m to comply with 12.3.6.1.3(b).

Furthermore, this level of earthworks during subdivision formation is less than the permitted activity soil disturbance threshold.

8.1 General Recommendations

Bulk fill with site-won earth can be moderately sensitive to disturbance when exposed to rain or runoff which may cause saturation or vehicle movements and trafficking during earthworks. Accordingly, care should be taken during construction, including probable future developments to minimise degradation of any earth fill due to construction traffic and to minimise machinery on site.

Any areas of proposed bulk fill which are required to meet specific subgrade requirements within should be subject to a specific earthwork specification prepared by a professional Engineer such as Geologix.

Due to the scope of work and topography of the site, significant excavations are not anticipated. However, to reduce the risk of instability of excavations during construction, it is recommended that **temporary** unsupported excavations have a maximum vertical height of 0.5 m. Excavations >0.5 m should be battered at 1V:1H or 45°. Permanent batter slopes may require a shallower angle to maintain long term stability and if proposed these should be assessed at the Building Consent stage within a specific geotechnical investigation report.

Temporary batters should be covered with polythene sheets secured to the surface with pins or batons to prevent saturation. All works within close proximity to excavations should be undertaken in accordance with Occupational Safety and Health regulations.

All earthworks should be carried out in periods of fine weather within the typical October to April earthwork season. Consent conditions commonly prescribe working restrictions.

8.2 Erosion and Sediment Control

Specific erosion and sediment control measures are required to control sediment runoff from areas of proposed earthworks within the scope of this application. It is recommended that

specific on-lot development is assessed at the time of Building Consent by the future developer. To form the subdivision the following erosion and sediment control measures are recommended:

• Silt fence around the downslope face of the proposed vehicle crossing and right of way channel construction.

•Clean water diversion channel and bund upslope of the proposed vehicle crossing to divert potential overland flows away and around construction works zones.

9 INTERNAL ROADING AND VEHICLE CROSSINGS

It should be noted that we are not traffic engineers, and no specific Traffic Impact Assessment is included within the scope of these works.

9.1 Vehicle Crossings

A new vehicle crossing will be formed to provide access to proposed lot 4 from Hall Road and will be constructed in accordance with FNDC/S/6 engineering standard for residential vehicle crossings to suit the un-kerbed edge of Hall road. This crossing will require a culvert over the existing stormwater drain alongside Hall Road and shall be sized at detailed design stage.

An existing vehicle crossing off Hall Road will provide access to proposed lots 2, 3 & 5 via the existing private accessway which will be designated as a right of way. The vehicle crossing has an existing stormwater culvert that will remain as-is. The existing consented vehicle crossing will remain and function in its current condition. No modifications are recommended.

Lot 2 & 5 will require vehicle crossings from the ROW. These are recommended to match the FNDC /S/2 standard. It is recommended that they are only finalised and constructed at lot development stage (not subdivision formation).

9.2 Right of Ways (RoW)

A proposed RoW will provide internal access to the proposed lot 2, 3 & 5. The ROW will utilise the existing formed private accessway which comprises a tightly bound metal aggregate restrained at its edges by kerbs. Although this is technically considered an unsealed surface, it is recommended that the existing accessway is suitable to serve the additional two proposed lots. Apart from its technically unsealed nature, the accessway is otherwise considered to meet the standards specified in Appendix 3B-1 of the Operative District Plan and is in accordance with FNDC/S/7 of the FNDC Engineering Standards, as summarised in Table 7.

Table 7 Summary of Proposed RoW specification

Location	Lot	Standard	Future H.E	Min. Legal Width	Min. Carriageway Width
Right of Way (Easement C)	2, 3 & 5	Category A	3	7.5m	3.0 m formed width, with new grass lined v-drain to discharge to Hall Road

It is proposed that a new grass lined v-drain channel be installed along the eastern edge of the accessway, adjacent the Lot 2 and 5 boundaries. This channel will serve to intercept and more efficiently convey runoff from the accessway and the Lot 2 & 5 sites to Hall Road.

The proposed RoW channel mentioned above is required with the establishment of the subdivision. The new crossings into each Lot 2 & 5 will should only be finalised and constructed at time of lot development. The crossing to Lot 5 will require a suitably sized culvert to convey water.

10 NATURAL HAZARD ASSESSMENT

To satisfy the Resource Management Act, 1991 the proposed subdivision must plan for and manage the risk from natural hazards to reduce the potential adverse effects to less than minor. Regulatory assessment of natural hazards at the site location are managed under the jurisdiction of the FNDC District Plan[8], Northland Regional Council (NRC) Proposed Regional Plan for Northland[9] and Regional Water and Soil Plan for Northland. Following our ground investigation and considering the measures presented in this report, a summary of the proposed activities against defined natural hazards is presented as Table 8.

Table 8: Summary of Natural Hazards

Natural Hazard	Applicability	Mitigation & Effect on Environment
Erosion	Yes	Risk of erosion particularly during earthworks activities is created. Mitigation provided by means of stormwater dispersion control and erosion and sediment control measures; resultant effects are less than minor.
Overland flow paths, flooding, inundation	Yes	Risk of concentrated flows through overland flow paths is created. Mitigation provided by means of flood control attenuation; resultant effects are less than minor.
Landslip	NA	No mitigation required, less than minor.
Rockfall	NA	No mitigation required, less than minor.
Alluvion	NA	No mitigation required, less than minor.
Avulsion	NA	No mitigation required, less than minor.
Unconsolidated fill	NA	No mitigation required, less than minor.

[8] *Operative District Plan Rule 13.7.3.2.*

[9] *Proposed Regional Plan for Northland, Appeals Version, July 2021, Chapter D.6.*

Soil contamination	NA	No mitigation required, less than minor.
Subsidence	NA	No mitigation required, less than minor.
Fire hazard	NA	No mitigation required, less than minor.
Sea level rise	NA	No mitigation required, less than minor.

NA – Not Applicable.

11 LIMITATIONS

This report has been prepared for BVR Trust & SKJ Trust Partnership as our Client. It may be relied upon by our Client and their appointed Consultants, Contractors and for the purpose of Consent as outlined by the specific objectives in this report. This report and associated recommendations, conclusions or intellectual property is not to be relied upon by any other party for any purpose unless agreed in writing by Geologix Consulting Engineers Ltd and our Client. In any case the reliance by any other party for any other purpose shall be at such parties' sole risk and no reliability is provided by Geologix Consulting Engineers Ltd.

The opinions and recommendations of this report are based on plans, specifications and reports provided to us at the time of writing, as referenced. Any changes, additions or amendments to the project scope and referenced documents may require an amendment to this report and Geologix Consulting Engineers should be consulted. Geologix Consulting Engineers Ltd reserve the right to review this report and accompanying plans.

The recommendations and opinions in this report are based on arisings extracted from exploratory boreholes at discrete locations and any available existing borehole records. The nature and continuity of subsurface conditions, interpretation of ground condition and models away from these specific ground investigation locations are inferred. It must be appreciated that the actual conditions may vary from the assumed ground model. Differences from the encountered ground conditions during subdivision construction may require an amendment to the recommendations of this report.

APPENDIX A

Drawings

NOTES:
- AERIAL PHOTOGRAPH, EXTRACTED FROM GRIP
- HORIZONTAL DATUM IN MT EDEN CIRCUIT 2000
- VERTICAL DATUM IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016
- EXISTING SITE BOUNDARIES EXTRACTED FROM GRIP.CO.NZ
- PROPOSED BOUNDARIES PROVIDED BY THOMSON SURVEY PLAN 10740 DATED FEBRUARY 2025

LEGEND:

- SUBJECT LOT
- PROPOSED LOTS
- EXISTING ROAD RESERVE BOUNDARY
- EXISTING ABUTTAL LOT BOUNDARY
- PROPOSED PRESSURE WASTEWATER PIPE
- EXISTING PRESSURE WASTEWATER PIPE (PLOTTED FROM GIS)
- PROPOSED WATER LATERAL LOT CONNECTIONS
- EXISTING WATER MAINS (PLOTTED FROM GIS)
- CONCEPT BUILDING ENVELOPE (14m x 14m)
- EXISTING DWELLING TO REMAIN

EXISTING VEHICLE CROSSING TO BE UTILISED AS IS

EX. WATER METER FOR LOT 3
NEW WATER METER FOR LOT 2

DISCHARGE NEW CHANNEL INTO EXISTIGN WATER TABLE ON HALL ROAD

NEW WATER METER FOR LOT 5'S FUTURE CONNECTION

PROPOSED LOT 4 VEHICLE CROSSING CONSTRUCTED TO SUIT FNDC STD DETAIL S/6

NEW WATER METER FOR LOT 5'S FUTURE CONNECTION

INDICATIVE ACCESS TO LOT 5 OFF ROW TO BE FINALISED AT LOT DEVELOPMENT STAGE SW CULVERT REQUIRED UNDER CROSSING. SUFFICIENT COVER TO PIPE MUST BE PROVIDED (BENIFITED BY REINFORCED CONCRETE ABOVE)

FORM NEW GRASS LINED V-DRAIN CHANNEL (500MM WIDE) FROM LOT 2 CROSSING TO DRAIN TOWARD HALL ROAD

3,000 LITRE TANK DISCHARGE TO OPEN CHANNEL

EX. WATER TO LOT 3 (TO REMAIN)

NEW WATER TO LOT 2 (PROVIDED AT SUBDIVISION FORMATION)

INDICATIVE ACCESS TO LOT 2 OFF ROW - TO BE FINALISED AT LOT DEVELOPMENT STAGE

NEW BOUNDARY KITS

LOT 5
LOT 4
LOT 2
LOT 3
EXISTING HOUSE

LOT 5 CONN
LOT 4 CONN
LOT 2 CONN
LOT 3 CONN
LOT 3 EX CONN
LOT 2 CONN

125Ø MDPE WATER MAIN
90ØPE PRESSURE SEWER

HALL ROAD

87.5
87.0
86.5

LOT 2
DP 187009

2
DP 158654

1
DP 145916

GENERAL NOTES

1. DRAWING REPRODUCED FROM THOMSON SURVEY PROPOSED SCHEME PLAN REF. 10740, DATED 25 JANUARY 2025.
2. CONTOURS AT 0.5 m INTERVALS TO DEMONSTRATE CONTOURS AT THE SITE.
3. DIGITAL ELEVATION MODEL DATA CAPTURED FROM LINZ DATA SERVICE (NZVD 2016)
4. FOR INDICATION ONLY, NOT FOR CONSTRUCTION.
5. FEATURES PRESENTED ARE INDICATIVE AND HAVE NOT BEEN VERIFIED.
6. DO NOT SCALE FROM THIS DRAWING.

SCALE 1:250 @A3

A	FIRST ISSUE	11/06/25
Revision	Issue	Date

geologix consulting engineers
AUCKLAND | NORTHLAND

Project Name and Address
12
HALL ROAD
KERIKERI
LOT 2 DP 187009

Project	Drawn By
C0641N	B.NEL

Client
BVR TRUST & S JURISICH TRUST PARTNERSHIP

Sheet Title
SITE SUITABILITY LAYOUT

Sheet
100

FILE PATH: Z:\Geologix Files\Projects\C0600-C0699\C0641N - 12 Hall Road, Kerikeri\07 - Technical & Drawings\Drawings\C0641N-S-100.dwg[C0641N-S-100.dwg

PLOTTED: 09/04/2022

geologix
consulting engineers

APPENDIX B

Engineering Borehole Records (None undertaken)

APPENDIX C

Not Applicable/ None

geologix
consulting engineers

APPENDIX D

Stormwater Calculations

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lot 2)	**50 % AEP STORM EVENT, 80 % OF PRE DEVELOPMENT**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF CLIMATE CHANGE (20% FACTOR AS PER 2023 FNDC ENGINEERING STANDARDS).
PRE-DEVELOPMENT RUNOFF IS FACTORED BY 80% TO SUIT FNDC STANDARDS
RUNOFF COEFFICIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	
EX. PERVIOUS	602	0.82	LAWN (RESIDENTIAL)
TOTAL	**602**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	201	0.96	ROOF
OFFSET	100	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	301	0.82	LAWN (RESIDENTIAL)
TOTAL	**602**	TYPE C	

RAINFALL INTENSITY, 50% AEP, 10MIN DURATION

50 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	67.0	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
50 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	80.40	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

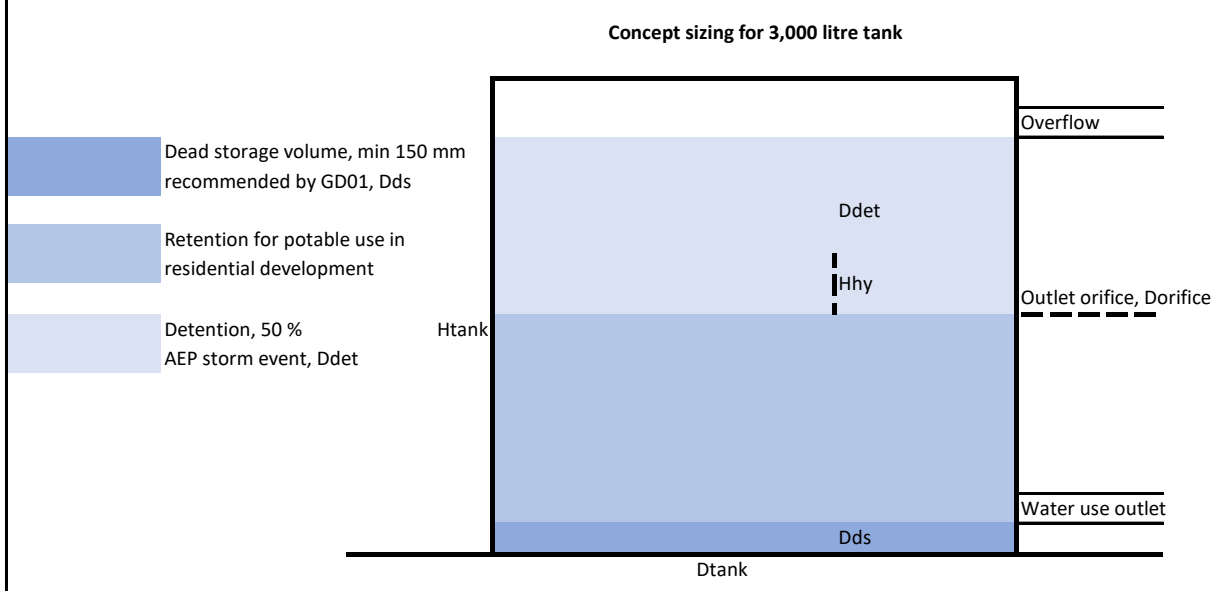
PRE AND POST-DEVELOPMENT RUNOFF, 50%AEP WITH CC, VARIOUS DURATIONS

DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpre, l/s	80% of PRE DEV RUNOFF, Qpre(80%), l/s	COMMENTS
10	67.00	1.2	80.40	11.97	9.19	7.35	*Critical duration (time of concentration) for the catchments is 10min*
20	47.90	1.2	57.48	8.55	6.57	5.25	
30	39.40	1.2	47.28	7.04	5.40	4.32	
60	28.10	1.2	33.72	5.02	3.85	3.08	
120	19.90	1.2	23.88	3.55	2.73	2.18	*Pre-dev calculated on Intensity without CC factor*
360	11.00	1.2	13.20	1.96	1.51	1.21	
720	7.27	1.2	8.72	1.30	1.00	0.80	
1440	4.62	1.2	5.54	0.83	0.63	0.51	
2880	2.80	1.2	3.36	0.50	0.38	0.31	
4320	2.04	1.2	2.45	0.36	0.28	0.22	

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECT. TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	7.66	4.31	1.53	1.53	2.78	1667	*select largest required storage , regardless of duration, to avoid overflow*
20	5.47	3.08	1.09	1.53	1.55	1860	
30	4.50	2.53	0.90	1.53	1.00	1806	
60	3.21	1.81	0.64	1.53	0.28	995	
120	2.27	1.28	0.45	1.53	No Att. Req.	0	
360	1.26	0.71	0.25	1.53	No Att. Req.	0	
720	0.83	0.47	0.17	1.53	No Att. Req.	0	
1440	0.53	0.30	0.11	1.53	No Att. Req.	0	
2880	0.32	0.18	0.06	1.53	No Att. Req.	0	
4320	0.23	0.13	0.05	1.53	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT



SPECIFICATION

TOTAL STORAGE REQUIRED	1.860	m3	Select largest storage as per analysis
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank
TANK DIAMETER, Dtank	1.6	m	No. of Tanks 1
TANK AREA, Atank	2.01	m2	Area of ONE tank
TANK MAX STORAGE VOLUME, Vtank	3539	litres	
REQUIRED STORAGE HEIGHT, Ddet	0.93	m	Below overflow
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum
TOTAL WATER DEPTH REQUIRED	1.08	m	
SELECTED TANK OUTFLOW, Qout, l/s	0.00153	m3/s	Selected tank outflow
AVERAGE HYDRAULIC HEAD, Hhy	0.46	m	
AREA OF ORIFICE, Aorifice	8.20E-04	m2	
ORIFICE DIAMETER, Dorifice	32	mm	
VELOCITY AT ORIFICE	4.26	m/s	At max. head level

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lot 2)	**20 % AEP STORM EVENT, 80 % OF PRE DEVELOPMENT**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF PREDICTED 2.1 DEGREE CLIMATE CHANGE. RESIDENTIAL DEVELOPMENT AREAS ARE BASED ON EXISTING SURVEY DATA.

RUNOFF COEFFIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	LAWN (RESIDENTIAL)
EX. PERVIOUS	602	0.82	
TOTAL	**602**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	201	0.96	ROOF
0	0	0	
OFFSET	100	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	301	0.82	LAWN (RESIDENTIAL)
TOTAL	**602**	TYPE C	

RAINFALL INTENSITY, 20% AEP, 10MIN DURATION

20 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	86.6	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
20 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	103.9	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

PRE AND POST-DEVELOPMENT RUNOFF, 20%AEP WITH CC, VARIOUS DURATIONS

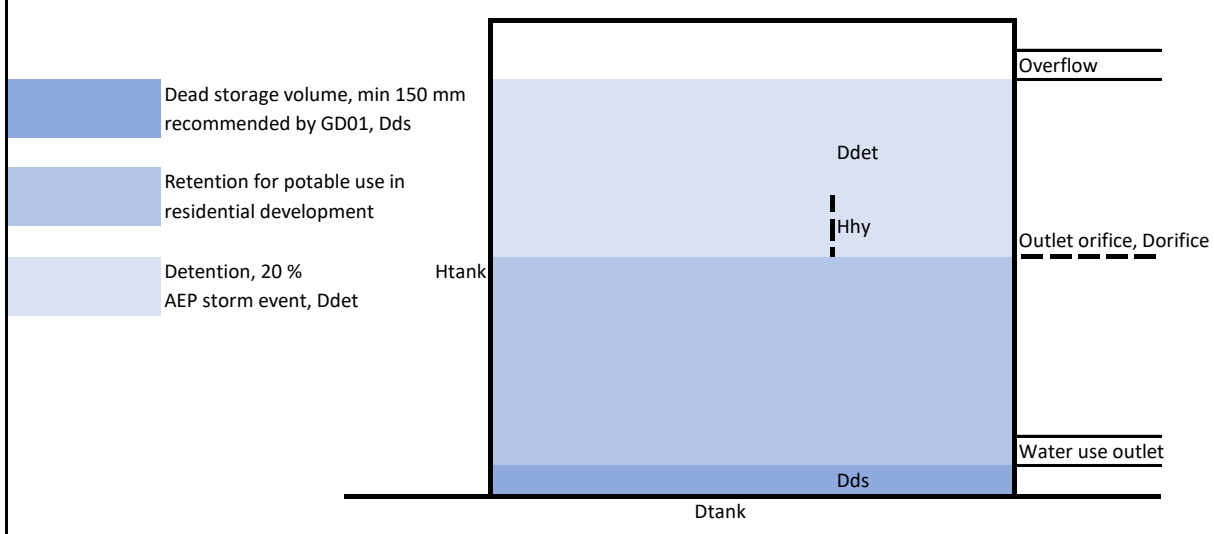
DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpa, l/s	80% of PRE DEV RUNOFF, Qpre(80%), l/s	COMMENTS
10	86.60	1.2	103.92	15.47	11.87	9.50	*Critical duration (time of concentration) for the catchments is 10min*
20	61.90	1.2	74.28	11.05	8.49	6.79	
30	51.00	1.2	61.20	9.11	6.99	5.59	
60	36.50	1.2	43.80	6.52	5.00	4.00	
120	25.80	1.2	30.96	4.61	3.54	2.83	*Pre-dev calculated on Intensity without CC factor*
360	14.30	1.2	17.16	2.55	1.96	1.57	
720	9.51	1.2	11.41	1.70	1.30	1.04	
1440	6.06	1.2	7.27	1.08	0.83	0.66	
2880	3.68	1.2	4.42	0.66	0.50	0.40	
4320	2.68	1.2	3.22	0.48	0.37	0.29	

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECTED TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	9.90	5.57	1.98	1.98	3.59	2155	*select largest required storage , regardless of duration, to avoid overflow*
20	7.07	3.98	1.41	1.98	2.00	2403	
30	5.83	3.28	1.17	1.98	1.30	2343	
60	4.17	2.35	0.83	1.98	0.37	1328	
120	2.95	1.66	0.59	1.98	No Att. Req.	0	
360	1.63	0.92	0.33	1.98	No Att. Req.	0	
720	1.09	0.61	0.22	1.98	No Att. Req.	0	
1440	0.69	0.39	0.14	1.98	No Att. Req.	0	
2880	0.42	0.24	0.08	1.98	No Att. Req.	0	
4320	0.31	0.17	0.06	1.98	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT

Concept sizing for 3,000 litre tank



SPECIFICATION

TOTAL STORAGE REQUIRED	2.403	m3	Select largest storage as per analysis
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank
TANK DIAMETER, Dtank	1.6	m	No. of Tanks 1
TANK AREA, Atank	2.01	m2	Area of ONE tank
TANK MAX STORAGE VOLUME, Vtank	3539	litres	
REQUIRED STORAGE HEIGHT, Ddet	1.20	m	Below overflow
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum
TOTAL WATER DEPTH REQUIRED	1.35	m	
SELECTED TANK OUTFLOW, Qout, l/s	0.00198	m3/s	Selected tank outflow
AVERAGE HYDRAULIC HEAD, Hhy	0.60	m	
AREA OF ORIFICE, Aorifice	9.32E-04	m2	
ORIFICE DIAMETER, Dorifice	34	mm	
VELOCITY AT ORIFICE	4.84	m/s	At max. head level

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lot 2)	**10 % AEP STORM EVENT, TO PRE-DEVELOPMENT FLOW**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF PREDICTED 2.1 DEGREE CLIMATE CHANGE. RESIDENTIAL DEVELOPMENT AREAS ARE BASED ON EXISTING SURVEY DATA.

RUNOFF COEFFIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	
EX. PERVIOUS	602	0.82	LAWN (RESIDENTIAL)
0	0	0	
TOTAL	**602**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	201	0.96	ROOF
0	0	0	
OFFSET	100	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	301	0.82	LAWN (RESIDENTIAL)
TOTAL	**602**	TYPE C	

RAINFALL INTENSITY, 10% AEP, 10MIN DURATION

10 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	101.0	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
10 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	121.2	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

PRE AND POST-DEVELOPMENT RUNOFF, 10%AEP WITH CC, VARIOUS DURATIONS

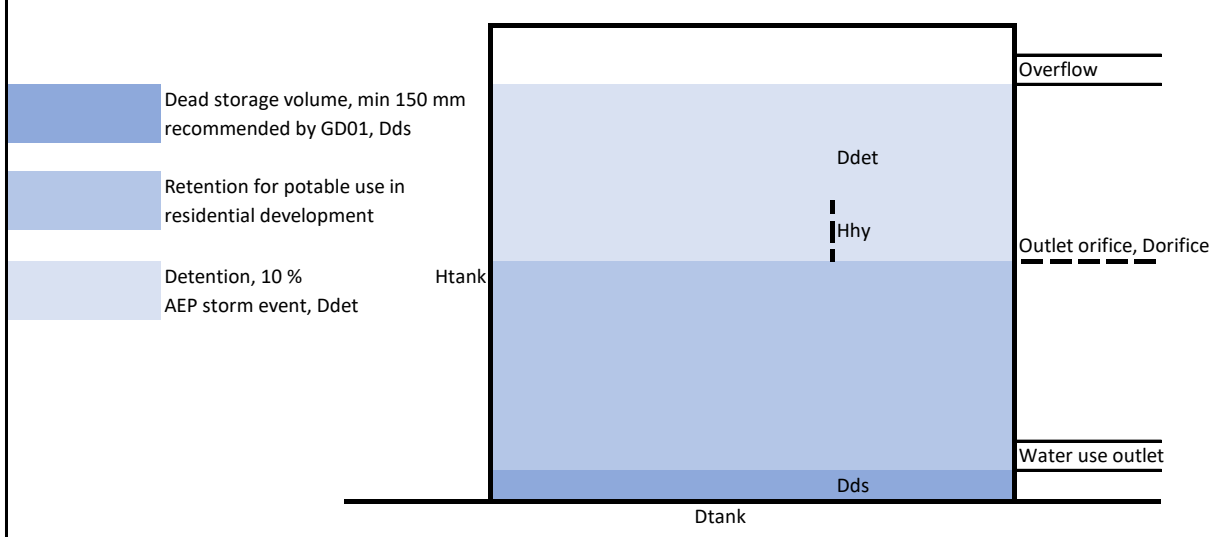
DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpre, l/s		COMMENTS
10	101.00	1.2	121.20	18.04	13.85		*Critical duration (time of concentration) for the catchments is 10min*
20	72.30	1.2	86.76	12.91	9.91		
30	59.60	1.2	71.52	10.64	8.17		
60	42.70	1.2	51.24	7.63	5.86		
120	30.30	1.2	36.36	5.41	4.15		*Pre-dev calculated on Intensity without CC factor*
360	16.80	1.2	20.16	3.00	2.30		
720	11.20	1.2	13.44	2.00	1.54		
1440	7.13	1.2	8.56	1.27	0.98		
2880	4.33	1.2	5.20	0.77	0.59		
4320	3.16	1.2	3.79	0.56	0.43		

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECTED TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	11.54	6.50	2.31	2.31	4.19	2513	*select largest required storage , regardless of duration, to avoid overflow*
20	8.26	4.65	1.65	2.31	2.34	2811	
30	6.81	3.83	1.36	2.31	1.53	2746	
60	4.88	2.75	0.98	2.31	0.44	1579	
120	3.46	1.95	0.69	2.31	No Att. Req.	0	
360	1.92	1.08	0.38	2.31	No Att. Req.	0	
720	1.28	0.72	0.26	2.31	No Att. Req.	0	
1440	0.81	0.46	0.16	2.31	No Att. Req.	0	
2880	0.49	0.28	0.10	2.31	No Att. Req.	0	
4320	0.36	0.20	0.07	2.31	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT

Concept sizing for 3,000 litre tank



SPECIFICATION

TOTAL STORAGE REQUIRED	2.811	m3	Select largest storage as per analysis	
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank	
TANK DIAMETER, Dtank	1.6	m	No. of Tanks	1
TANK AREA, Atank	2.01	m2	Area of ONE tank	
TANK MAX STORAGE VOLUME, Vtank	3539	litres		
REQUIRED STORAGE HEIGHT, Ddet	1.40	m	Below overflow	
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum	
TOTAL WATER DEPTH REQUIRED	1.55	m		
SELECTED TANK OUTFLOW, Qout, l/s	0.00231	m3/s	Selected tank outflow	
AVERAGE HYDRAULIC HEAD, Hhy	0.70	m		
AREA OF ORIFICE, Aorifice	1.01E-03	m2		
ORIFICE DIAMETER, Dorifice	36	mm		
VELOCITY AT ORIFICE	5.24	m/s	At max. head level	

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lots 5,4)	**50 % AEP STORM EVENT, 80 % OF PRE DEVELOPMENT**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF CLIMATE CHANGE (20% FACTOR AS PER 2023 FNDC ENGINEERING STANDARDS).
PRE-DEVELOPMENT RUNOFF IS FACTORED BY 80% TO SUIT FNDC STANDARDS
RUNOFF COEFFICIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	
EX. PERVIOUS	400	0.82	LAWN (RESIDENTIAL)
TOTAL	**400**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	180	0.96	ROOF
OFFSET	60	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	160	0.82	LAWN (RESIDENTIAL)
TOTAL	**400**	TYPE C	

RAINFALL INTENSITY, 50% AEP, 10MIN DURATION

50 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	67.0	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
50 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	80.40	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

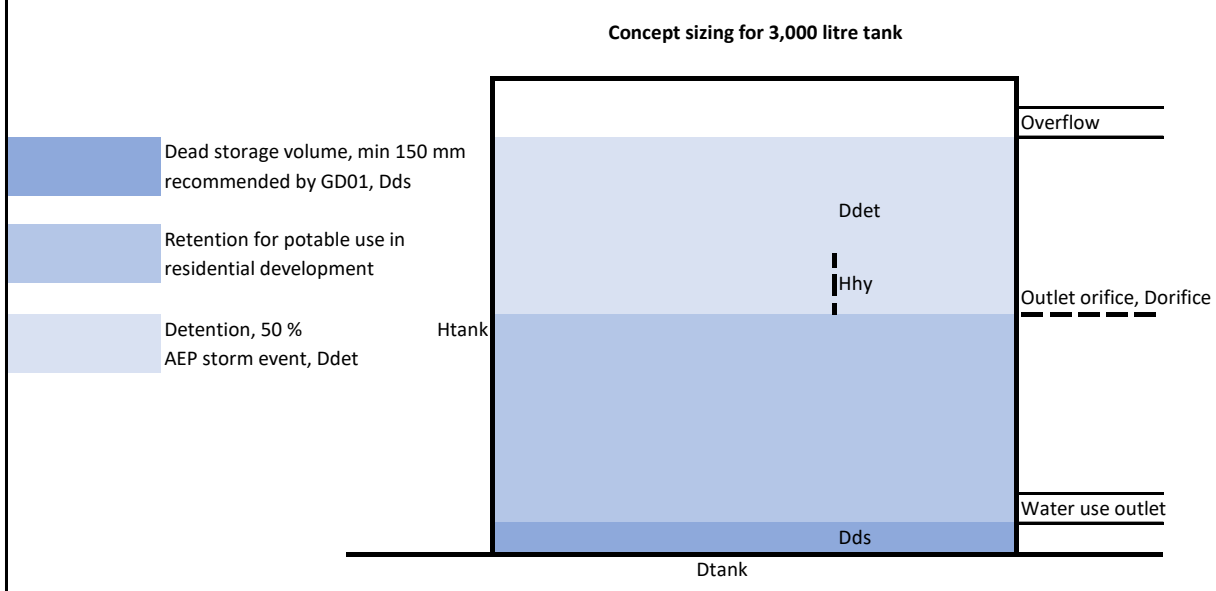
PRE AND POST-DEVELOPMENT RUNOFF, 50%AEP WITH CC, VARIOUS DURATIONS

DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpre, l/s	80% of PRE DEV RUNOFF, Qpre(80%), l/s	COMMENTS
10	67.00	1.2	80.40	8.08	6.10	4.88	*Critical duration (time of concentration) for the catchments is 10min*
20	47.90	1.2	57.48	5.77	4.36	3.49	
30	39.40	1.2	47.28	4.75	3.59	2.87	
60	28.10	1.2	33.72	3.39	2.56	2.05	
120	19.90	1.2	23.88	2.40	1.81	1.45	*Pre-dev calculated on Intensity without CC factor*
360	11.00	1.2	13.20	1.33	1.00	0.80	
720	7.27	1.2	8.72	0.88	0.66	0.53	
1440	4.62	1.2	5.54	0.56	0.42	0.34	
2880	2.80	1.2	3.36	0.34	0.26	0.20	
4320	2.04	1.2	2.45	0.25	0.19	0.15	

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECT. TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	4.22	3.86	1.89	1.89	1.97	1183	*select largest required storage , regardless of duration, to avoid overflow*
20	3.01	2.76	1.35	1.89	0.87	1045	
30	2.48	2.27	1.11	1.89	0.38	687	
60	1.77	1.62	0.79	1.89	No Att. Req.	0	
120	1.25	1.15	0.56	1.89	No Att. Req.	0	
360	0.69	0.63	0.31	1.89	No Att. Req.	0	
720	0.46	0.42	0.20	1.89	No Att. Req.	0	
1440	0.29	0.27	0.13	1.89	No Att. Req.	0	
2880	0.18	0.16	0.08	1.89	No Att. Req.	0	
4320	0.13	0.12	0.06	1.89	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT



SPECIFICATION

TOTAL STORAGE REQUIRED	1.183	m3	Select largest storage as per analysis	
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank	
TANK DIAMETER, Dtank	1.6	m	No. of Tanks	1
TANK AREA, Atank	2.01	m2	Area of ONE tank	
TANK MAX STORAGE VOLUME, Vtank	3539	litres		
REQUIRED STORAGE HEIGHT, Ddet	0.59	m	Below overflow	
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum	
TOTAL WATER DEPTH REQUIRED	0.74	m		
SELECTED TANK OUTFLOW, Qout, l/s	0.00189	m3/s	Selected tank outflow	
AVERAGE HYDRAULIC HEAD, Hhy	0.29	m		
AREA OF ORIFICE, Aorifice	1.27E-03	m2		
ORIFICE DIAMETER, Dorifice	40	mm		
VELOCITY AT ORIFICE	3.40	m/s	At max. head level	

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lots 5,4)	**20 % AEP STORM EVENT, 80 % OF PRE DEVELOPMENT**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF PREDICTED 2.1 DEGREE CLIMATE CHANGE. RESIDENTIAL DEVELOPMENT AREAS ARE BASED ON EXISTING SURVEY DATA.

RUNOFF COEFFIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	LAWN (RESIDENTIAL)
EX. PERVIOUS	400	0.82	
TOTAL	**400**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	180	0.96	ROOF
0	0	0	
OFFSET	60	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	160	0.82	LAWN (RESIDENTIAL)
TOTAL	**400**	TYPE C	

RAINFALL INTENSITY, 20% AEP, 10MIN DURATION

20 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	86.6	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
20 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	103.9	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

PRE AND POST-DEVELOPMENT RUNOFF, 20%AEP WITH CC, VARIOUS DURATIONS

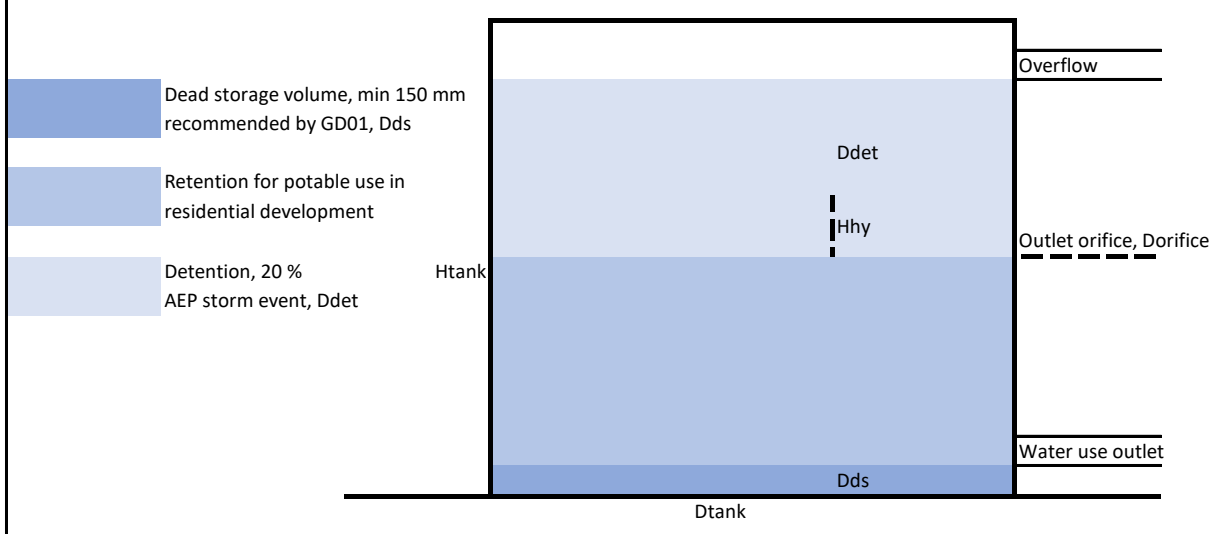
DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpa, l/s	80% of PRE DEV RUNOFF, Qpre(80%), l/s	COMMENTS
10	86.60	1.2	103.92	10.44	7.89	6.31	*Critical duration (time of concentration) for the catchments is 10min*
20	61.90	1.2	74.28	7.46	5.64	4.51	
30	51.00	1.2	61.20	6.15	4.65	3.72	
60	36.50	1.2	43.80	4.40	3.33	2.66	
120	25.80	1.2	30.96	3.11	2.35	1.88	*Pre-dev calculated on Intensity without CC factor*
360	14.30	1.2	17.16	1.72	1.30	1.04	
720	9.51	1.2	11.41	1.15	0.87	0.69	
1440	6.06	1.2	7.27	0.73	0.55	0.44	
2880	3.68	1.2	4.42	0.44	0.34	0.27	
4320	2.68	1.2	3.22	0.32	0.24	0.20	

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECTED TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	5.45	4.99	2.44	2.44	2.55	1529	*select largest required storage , regardless of duration, to avoid overflow*
20	3.90	3.57	1.74	2.44	1.13	1350	
30	3.21	2.94	1.44	2.44	0.50	895	
60	2.30	2.10	1.03	2.44	No Att. Req.	0	
120	1.62	1.49	0.73	2.44	No Att. Req.	0	
360	0.90	0.82	0.40	2.44	No Att. Req.	0	
720	0.60	0.55	0.27	2.44	No Att. Req.	0	
1440	0.38	0.35	0.17	2.44	No Att. Req.	0	
2880	0.23	0.21	0.10	2.44	No Att. Req.	0	
4320	0.17	0.15	0.08	2.44	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT

Concept sizing for 3,000 litre tank



SPECIFICATION

TOTAL STORAGE REQUIRED	1.529	m3	Select largest storage as per analysis
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank
TANK DIAMETER, Dtank	1.6	m	No. of Tanks 1
TANK AREA, Atank	2.01	m2	Area of ONE tank
TANK MAX STORAGE VOLUME, Vtank	3539	litres	
REQUIRED STORAGE HEIGHT, Ddet	0.76	m	Below overflow
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum
TOTAL WATER DEPTH REQUIRED	0.91	m	
SELECTED TANK OUTFLOW, Qout, l/s	0.00244	m3/s	Selected tank outflow
AVERAGE HYDRAULIC HEAD, Hhy	0.38	m	
AREA OF ORIFICE, Aorifice	1.44E-03	m2	
ORIFICE DIAMETER, Dorifice	43	mm	
VELOCITY AT ORIFICE	3.86	m/s	At max. head level

Project Ref:	C0641N	**STORMWATER ATTENUATION TANK DESIGN**	geologix consulting engineers
Project Address:	12 HALL ROAD, KERIKERI		
Design Case:	PROPOSED DEVELOPMENT (Lots 5,4)	**10 % AEP STORM EVENT, TO PRE-DEVELOPMENT FLOW**	
Date:	16 June 2025 REV 1		

ATTENUATION DESIGN PROVIDED IN ACCORDANCE WITH NEW ZEALAND BUILDING CODE E1 FOR THE RATIONALE METHOD ACCOUNTING FOR THE EFFECTS OF PREDICTED 2.1 DEGREE CLIMATE CHANGE. RESIDENTIAL DEVELOPMENT AREAS ARE BASED ON EXISTING SURVEY DATA.

RUNOFF COEFFIENTS DETERMINED FROM FNDC ENGINEERING STANDARDS 2023 TABLE 4-3.

PRE DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
IMPERVIOUS A	0	0	
IMPERVIOUS B	0	0	
IMPERVIOUS C	0	0	
EX. PERVIOUS	400	0.82	LAWN (RESIDENTIAL)
0	0	0	
TOTAL	**400**	TYPE C	

POST DEVELOPMENT CATCHMENT PARAMETERS

ITEM	AREA, A, m2	COEFFICIENT, C	DESCRIPTION
TO TANK	180	0.96	ROOF
0	0	0	
OFFSET	60	0.96	DRIVEWAY - sealed
OFFSET	0	0	
OFFSET	160	0.82	LAWN (RESIDENTIAL)
TOTAL	**400**	TYPE C	

RAINFALL INTENSITY, 10% AEP, 10MIN DURATION

10 % AEP RAINFALL INTENSITY, 10 MIN, I, mm/hr	101.0	mm/hr
CLIMATE CHANGE FACTOR, 2.1 DEG, 10 MIN*	20	%
10 % AEP RAINFALL INTENSITY, 10 MIN WITH CC	121.2	mm/hr

* CLIMATE CHANGE FACTOR OF 20% APPLIED IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS 4.3.9.1. NIWA HISTORIC RAINFALL INTENSITY DATA, 10MIN, IS MULTIPLIED BY CLIMATE CHANGE FACTOR.

PRE AND POST-DEVELOPMENT RUNOFF, 10%AEP WITH CC, VARIOUS DURATIONS

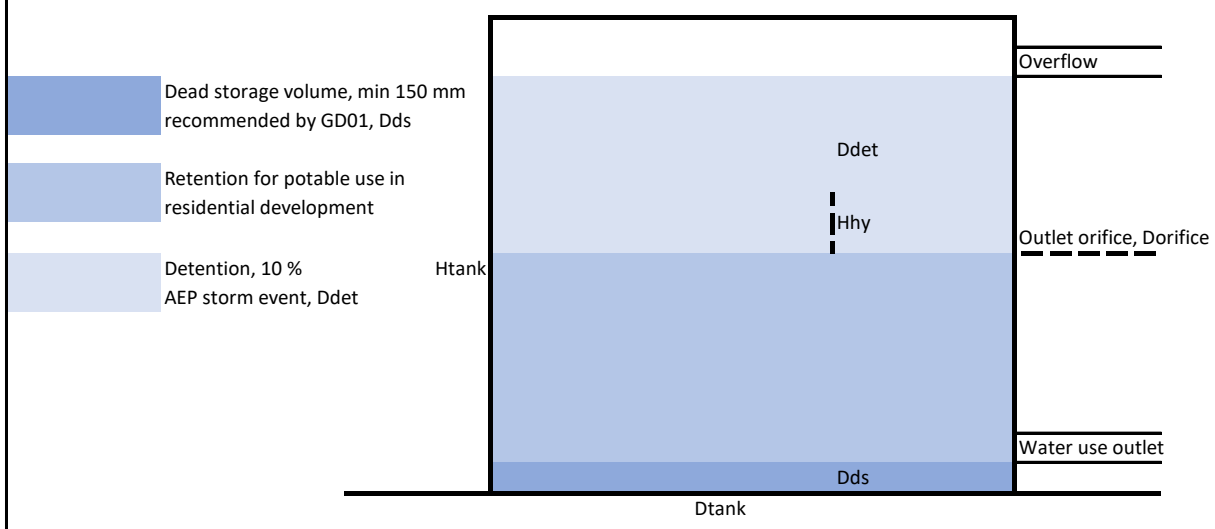
DURATION, min	INTENSITY, mm/hr	CC FACTOR	INTENSITY WITH CC, mm/hr	POST DEV RUNOFF, Qpost, l/s	PRE DEV RUNOFF, Qpre, l/s		COMMENTS
10	101.00	1.2	121.20	12.17	9.20		*Critical duration (time of concentration) for the catchments is 10min*
20	72.30	1.2	86.76	8.71	6.59		
30	59.60	1.2	71.52	7.18	5.43		
60	42.70	1.2	51.24	5.15	3.89		
120	30.30	1.2	36.36	3.65	2.76		*Pre-dev calculated on Intensity without CC factor*
360	16.80	1.2	20.16	2.02	1.53		
720	11.20	1.2	13.44	1.35	1.02		
1440	7.13	1.2	8.56	0.86	0.65		
2880	4.33	1.2	5.20	0.52	0.39		
4320	3.16	1.2	3.79	0.38	0.29		

ATTENUATION ANALYSIS, VARIOUS DURATIONS

DURATION, min	OFFSET FLOW, Qoff, l/s	TANK INFLOW , Qin, l/s	ALLOWABLE TANK OUTFLOW, Qpre - Qoff, l/s	SELECTED TANK OUTFLOW, Qout, l/s	DIFFERENCE (Qin - Qout), l/s	Required Storage, litres	
10	6.36	5.82	2.85	2.85	2.97	1783	*select largest required storage , regardless of duration, to avoid overflow*
20	4.55	4.16	2.04	2.85	1.32	1582	
30	3.75	3.43	1.68	2.85	0.59	1057	
60	2.69	2.46	1.20	2.85	No Att. Req.	0	
120	1.91	1.75	0.85	2.85	No Att. Req.	0	
360	1.06	0.97	0.47	2.85	No Att. Req.	0	
720	0.70	0.65	0.32	2.85	No Att. Req.	0	
1440	0.45	0.41	0.20	2.85	No Att. Req.	0	
2880	0.27	0.25	0.12	2.85	No Att. Req.	0	
4320	0.20	0.18	0.09	2.85	No Att. Req.	0	

ATTENUATION TANK DESIGN OUTPUT

Concept sizing for 3,000 litre tank



SPECIFICATION

TOTAL STORAGE REQUIRED	1.783	m3	Select largest storage as per analysis	
TANK HEIGHT, Htank	1.76	m	Concept sizing for 3,000 litre tank	
TANK DIAMETER, Dtank	1.6	m	No. of Tanks	1
TANK AREA, Atank	2.01	m2	Area of ONE tank	
TANK MAX STORAGE VOLUME, Vtank	3539	litres		
REQUIRED STORAGE HEIGHT, Ddet	0.89	m	Below overflow	
DEAD STORAGE VOLUME, Dds	0.15	m	GD01 recommended minimum	
TOTAL WATER DEPTH REQUIRED	1.04	m		
SELECTED TANK OUTFLOW, Qout, l/s	0.00285	m3/s	Selected tank outflow	
AVERAGE HYDRAULIC HEAD, Hhy	0.44	m		
AREA OF ORIFICE, Aorifice	1.56E-03	m2		
ORIFICE DIAMETER, Dorifice	45	mm		
VELOCITY AT ORIFICE	4.17	m/s	At max. head level	

HIRDS V4 Intensity-Duration-Frequency Results
Sitename: Kerikeri
Coordinate system: WGS84
Longitude: 173.9444
Latitude: -35.2347

DDF Mode Parameters:	c	d	e	f	g	h	i
Values:	0.00256798	0.50763937	-0.01105148	-0.00410847	0.25242082	-0.01180199	3.24530548

Example:	Duration (hrs)	ARI (yrs)	x	y	Rainfall Rate (mm/hr)
	24	100	3.17805383	4.600149227	10.87026415

Rainfall intensities (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	61.3	43.7	35.9	25.7	18.1	10	6.62	4.21	2.55	1.85	1.46	1.2
2	0.5	67	47.9	39.4	28.1	19.9	11	7.27	4.62	2.8	2.04	1.6	1.32
5	0.2	86.6	61.9	51	36.5	25.8	14.3	9.51	6.06	3.68	2.68	2.11	1.74
10	0.1	101	72.3	59.6	42.7	30.3	16.8	11.2	7.13	4.33	3.16	2.49	2.05
20	0.05	115	82.7	68.2	49	34.8	19.4	12.9	8.22	5.01	3.65	2.88	2.38
30	0.033	124	88.9	73.4	52.7	37.4	20.9	13.9	8.88	5.41	3.94	3.11	2.57
40	0.025	130	93.4	77.1	55.4	39.3	22	14.6	9.35	5.7	4.16	3.28	2.71
50	0.02	135	96.8	79.9	57.4	40.8	22.8	15.2	9.72	5.93	4.32	3.41	2.82
60	0.017	139	99.6	82.2	59.1	42.1	23.5	15.7	10	6.11	4.46	3.52	2.91
80	0.013	145	104	85.9	61.8	44	24.6	16.4	10.5	6.41	4.68	3.69	3.05
100	0.01	149	107	88.8	63.9	45.5	25.4	17	10.9	6.64	4.85	3.83	3.16
250	0.004	168	121	100	72.2	51.5	28.9	19.3	12.4	7.57	5.53	4.37	3.62

Intensity standard error (mm/hr) :: Historical Data

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	5	3.4	2.4	1.8	1.3	0.82	0.63	0.15	0.2	0.21	0.11	0.096
2	0.5	5.3	3.7	2.6	2	1.4	0.89	0.69	0.16	0.22	0.23	0.12	0.11
5	0.2	7.8	5.8	4.2	3	2.1	1.3	0.96	0.27	0.3	0.32	0.17	0.15
10	0.1	11	8.2	6.1	4.1	2.9	1.7	1.3	0.41	0.38	0.39	0.21	0.19
20	0.05	15	11	8.6	5.7	4.1	2.3	1.7	0.59	0.48	0.47	0.27	0.24
30	0.033	18	14	10	6.9	4.9	2.7	2	0.72	0.55	0.53	0.31	0.27
40	0.025	20	15	12	7.8	5.6	3.1	2.2	0.82	0.61	0.58	0.34	0.3
50	0.02	22	17	13	8.6	6.2	3.4	2.4	0.91	0.65	0.61	0.37	0.33
60	0.017	24	18	14	9.3	6.8	3.7	2.6	0.99	0.7	0.64	0.39	0.35
80	0.013	26	20	16	11	7.7	4.2	3	1.1	0.77	0.7	0.43	0.38
100	0.01	29	22	18	12	8.5	4.6	3.2	1.2	0.82	0.74	0.46	0.41
250	0.004	41	31	25	17	12	6.7	4.7	1.8	1.1	0.96	0.63	0.56

Rainfall intensities (mm/hr) :: RCP2.6 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	65.6	46.8	38.5	27.5	19.3	10.6	6.93	4.38	2.63	1.91	1.5	1.23
2	0.5	71.8	51.3	42.2	30.1	21.2	11.6	7.64	4.82	2.9	2.1	1.65	1.36
5	0.2	93.1	66.6	54.9	39.3	27.7	15.2	10	6.34	3.82	2.77	2.18	1.8
10	0.1	109	77.8	64.2	46	32.5	17.9	11.8	7.47	4.51	3.28	2.58	2.12
20	0.05	124	89.2	73.6	52.8	37.4	20.6	13.6	8.62	5.22	3.79	2.98	2.46
30	0.033	134	96	79.2	56.9	40.3	22.3	14.7	9.31	5.64	4.1	3.23	2.66
40	0.025	140	101	83.2	59.7	42.3	23.4	15.5	9.81	5.94	4.32	3.4	2.81
50	0.02	145	105	86.3	62	44	24.3	16.1	10.2	6.18	4.5	3.54	2.92
60	0.017	150	108	88.8	63.8	45.3	25.1	16.6	10.5	6.38	4.64	3.66	3.01
80	0.013	156	112	92.8	66.8	47.4	26.3	17.4	11	6.69	4.87	3.83	3.16
100	0.01	161	116	95.9	69	49	27.2	18	11.4	6.93	5.04	3.98	3.28
250	0.004	181	131	108	78	55.4	30.8	20.4	13	7.9	5.76	4.54	3.75

Rainfall intensities (mm/hr) :: RCP2.6 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	65.6	46.8	38.5	27.5	19.3	10.6	6.93	4.38	2.63	1.91	1.5	1.23
2	0.5	71.8	51.3	42.2	30.1	21.2	11.6	7.64	4.82	2.9	2.1	1.65	1.36
5	0.2	93.1	66.6	54.9	39.3	27.7	15.2	10	6.34	3.82	2.77	2.18	1.8
10	0.1	109	77.8	64.2	46	32.5	17.9	11.8	7.47	4.51	3.28	2.58	2.12
20	0.05	124	89.2	73.6	52.8	37.4	20.6	13.6	8.62	5.22	3.79	2.98	2.46
30	0.033	134	96	79.2	56.9	40.3	22.3	14.7	9.31	5.64	4.1	3.23	2.66
40	0.025	140	101	83.2	59.7	42.3	23.4	15.5	9.81	5.94	4.32	3.4	2.81
50	0.02	145	105	86.3	62	44	24.3	16.1	10.2	6.18	4.5	3.54	2.92
60	0.017	150	108	88.8	63.8	45.3	25.1	16.6	10.5	6.38	4.64	3.66	3.01
80	0.013	156	112	92.8	66.8	47.4	26.3	17.4	11	6.69	4.87	3.83	3.16
100	0.01	161	116	95.9	69	49	27.2	18	11.4	6.93	5.04	3.98	3.28
250	0.004	181	131	108	78	55.4	30.8	20.4	13	7.9	5.76	4.54	3.75

Rainfall intensities (mm/hr) :: RCP4.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	66.7	47.6	39.1	27.9	19.6	10.7	7.01	4.42	2.66	1.92	1.51	1.24
2	0.5	73.1	52.2	42.9	30.7	21.6	11.8	7.73	4.87	2.93	2.12	1.66	1.37
5	0.2	94.8	67.8	55.8	40	28.2	15.5	10.2	6.41	3.86	2.8	2.2	1.81
10	0.1	111	79.3	65.3	46.8	33.1	18.2	12	7.55	4.56	3.31	2.6	2.14
20	0.05	127	90.9	75	53.8	38	21	13.8	8.72	5.27	3.83	3.01	2.48
30	0.033	136	97.8	80.7	57.9	41	22.6	14.9	9.43	5.7	4.14	3.26	2.68
40	0.025	143	103	84.7	60.8	43.1	23.8	15.7	9.93	6.01	4.37	3.44	2.83
50	0.02	148	106	87.9	63.2	44.8	24.7	16.3	10.3	6.25	4.54	3.58	2.95
60	0.017	152	110	90.5	65	46.1	25.5	16.8	10.7	6.45	4.69	3.69	3.04
80	0.013	159	114	94.6	68	48.2	26.7	17.6	11.2	6.76	4.92	3.87	3.19
100	0.01	164	118	97.7	70.3	49.9	27.6	18.2	11.6	7	5.09	4.01	3.31
250	0.004	185	133	110	79.4	56.5	31.3	20.7	13.2	7.99	5.81	4.58	3.78

Rainfall intensities (mm/hr) :: RCP4.5 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	70.1	50	41.1	29.3	20.6	11.1	7.26	4.56	2.73	1.96	1.54	1.27
2	0.5	76.9	54.9	45.2	32.3	22.7	12.3	8.02	5.03	3.01	2.17	1.7	1.4
5	0.2	100	71.5	58.9	42.2	29.7	16.2	10.6	6.63	3.98	2.88	2.26	1.85
10	0.1	117	83.7	69	49.4	34.9	19	12.5	7.82	4.7	3.4	2.67	2.2
20	0.05	134	96	79.2	56.8	40.1	22	14.4	9.04	5.44	3.94	3.1	2.54
30	0.033	144	103	85.3	61.2	43.3	23.7	15.5	9.77	5.89	4.26	3.35	2.76
40	0.025	151	108	89.6	64.3	45.5	25	16.4	10.3	6.2	4.5	3.53	2.91
50	0.02	157	113	93	66.8	47.3	25.9	17	10.7	6.46	4.68	3.68	3.03
60	0.017	161	116	95.7	68.8	48.7	26.7	17.6	11.1	6.66	4.83	3.8	3.12
80	0.013	168	121	100	72	50.9	28	18.4	11.6	6.99	5.07	3.98	3.28
100	0.01	174	125	103	74.4	52.7	29	19	12	7.24	5.25	4.13	3.4
250	0.004	196	141	117	84	59.6	32.9	21.6	13.7	8.25	5.99	4.72	3.88

Rainfall intensities (mm/hr) :: RCP6.0 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	66.2	47.3	38.9	27.7	19.5	10.6	6.98	4.41	2.65	1.91	1.5	1.24
2	0.5	72.6	51.8	42.6	30.4	21.4	11.7	7.69	4.85	2.92	2.11	1.66	1.37
5	0.2	94.1	67.3	55.5	39.7	28	15.4	10.1	6.38	3.85	2.79	2.19	1.81
10	0.1	110	78.7	64.9	46.5	32.8	18.1	11.9	7.52	4.54	3.29	2.59	2.13
20	0.05	126	90.2	74.4	53.4	37.8	20.8	13.7	8.68	5.25	3.81	3	2.47
30	0.033	135	97	80.1	57.5	40.7	22.5	14.8	9.38	5.68	4.12	3.25	2.68
40	0.025	142	102	84.1	60.4	42.8	23.7	15.6	9.89	5.98	4.35	3.42	2.82
50	0.02	147	106	87.2	62.7	44.4	24.6	16.2	10.3	6.22	4.52	3.56	2.94
60	0.017	151	109	89.8	64.6	45.8	25.3	16.7	10.6	6.42	4.67	3.68	3.03
80	0.013	158	114	93.9	67.5	47.9	26.5	17.5	11.1	6.73	4.9	3.86	3.18
100	0.01	163	117	97	69.8	49.5	27.4	18.1	11.5	6.97	5.07	4	3.3
250	0.004	184	132	109	78.8	56	31.1	20.6	13.1	7.95	5.79	4.57	3.77

Rainfall intensities (mm/hr) :: RCP6.0 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	73.1	52.2	42.9	30.6	21.4	11.5	7.48	4.69	2.79	2	1.57	1.29
2	0.5	80.3	57.4	47.2	33.7	23.7	12.7	8.28	5.17	3.08	2.22	1.74	1.43
5	0.2	105	74.9	61.7	44.1	31	16.8	10.9	6.83	4.08	2.95	2.31	1.89
10	0.1	122	87.7	72.3	51.8	36.5	19.8	12.9	8.07	4.83	3.49	2.73	2.25
20	0.05	140	101	83	59.6	42	22.9	14.9	9.32	5.59	4.04	3.17	2.6
30	0.033	151	108	89.4	64.2	45.3	24.7	16.1	10.1	6.05	4.38	3.43	2.82
40	0.025	158	114	93.9	67.4	47.6	26	17	10.6	6.38	4.62	3.62	2.98
50	0.02	164	118	97.5	70.1	49.5	27	17.6	11.1	6.64	4.8	3.77	3.1
60	0.017	169	122	100	72.1	51	27.9	18.2	11.4	6.85	4.96	3.89	3.2
80	0.013	177	127	105	75.5	53.4	29.2	19.1	12	7.19	5.2	4.08	3.36
100	0.01	182	131	108	78	55.2	30.2	19.8	12.4	7.45	5.39	4.23	3.48
250	0.004	205	148	122	88.2	62.5	34.3	22.5	14.1	8.49	6.15	4.84	3.98

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2031-2050

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	67.5	48.1	39.6	28.3	19.8	10.8	7.07	4.46	2.67	1.93	1.52	1.25
2	0.5	74	52.8	43.4	31	21.8	11.9	7.8	4.91	2.95	2.13	1.67	1.38
5	0.2	96	68.7	56.6	40.5	28.5	15.6	10.3	6.46	3.89	2.82	2.21	1.82
10	0.1	112	80.3	66.2	47.4	33.5	18.4	12.1	7.62	4.59	3.33	2.62	2.15
20	0.05	128	92.1	76	54.5	38.5	21.2	13.9	8.8	5.31	3.85	3.03	2.49
30	0.033	138	99.1	81.7	58.7	41.5	22.9	15	9.51	5.74	4.17	3.28	2.7
40	0.025	145	104	85.8	61.7	43.7	24.1	15.9	10	6.05	4.4	3.46	2.85
50	0.02	150	108	89.1	64	45.3	25	16.5	10.4	6.3	4.57	3.6	2.97
60	0.017	154	111	91.7	65.9	46.7	25.8	17	10.7	6.5	4.72	3.71	3.06
80	0.013	161	116	95.9	68.9	48.9	27	17.8	11.3	6.82	4.95	3.9	3.21
100	0.01	167	120	99	71.2	50.5	27.9	18.4	11.7	7.06	5.13	4.04	3.33
250	0.004	187	135	112	80.5	57.2	31.7	20.9	13.3	8.05	5.86	4.61	3.8

Rainfall intensities (mm/hr) :: RCP8.5 for the period 2081-2100

ARI	AEP	10m	20m	30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
1.58	0.633	80.1	57.1	47	33.5	23.4	12.4	7.99	4.97	2.93	2.09	1.63	1.34
2	0.5	88.1	62.9	51.8	37	25.9	13.8	8.86	5.48	3.24	2.33	1.81	1.49
5	0.2	115	82.4	67.9	48.6	34	18.2	11.8	7.28	4.31	3.11	2.42	1.98
10	0.1	135	96.7	79.7	57.1	40.1	21.5	13.9	8.61	5.11	3.68	2.87	2.36
20	0.05	155	111	91.7	65.8	46.2	24.9	16.1	9.96	5.93	4.27	3.34	2.73
30	0.033	167	120	98.8	70.9	49.9	26.9	17.4	10.8	6.43	4.63	3.62	2.96
40	0.025	175	126	104	74.5	52.4	28.4	18.4	11.4	6.77	4.89	3.82	3.13
50	0.02	182	131	108	77.4	54.5	29.5	19.1	11.8	7.06	5.08	3.98	3.26
60	0.017	187	134	111	79.7	56.2	30.4	19.7	12.2	7.28	5.26	4.1	3.36
80	0.013	195	141	116	83.5	58.8	31.8	20.6	12.8	7.65	5.51	4.3	3.53
100	0.01	202	145	120	86.3	60.8	33	21.4	13.3	7.92	5.71	4.47	3.66
250	0.004	227	164	135	97.5	68.9	37.4	24.3	15.1	9.03	6.52	5.11	4.19

Appendix 6

Combined Preliminary and Detailed Site Investigation Report

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COMBINED PRELIMINARY AND DETAILED SITE INVESTIGATION

12 HALL ROAD, KERIKERI

BVR TRUST & SKJ TRUST PARTNERSHIP

C0641N-E-01
JUNE 2025
REVISION 1

geologix
consulting engineers

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REVISION HISTORY

Date	Issue	Prepared by	Approved
June 2025	First Issue	RM	EC

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1 INTRODUCTION

This combined Preliminary and Detailed Site Investigation (PSI/ DSI) report has been prepared by Geologix Consulting Engineers Ltd (Geologix) for BVR Trust & SKJ Trust Partnership as our Client in accordance with our standard short form agreement and general terms and conditions of engagement.

This investigation was to assist with the Resource Consent application in relation to the proposed residential redevelopment, subdivision and associated minor soil disturbance on a property located at 12 Hall Road, Kerikeri (herein, referred to as the 'site', Figure 1, Section 2.1).

1.1 Background and Objectives

At the time of writing this report, the site is proposed for a new multi-stage residential subdivision including minor soil disturbance activities to form access roads (where required). Proposed subdivision plans by Thomson Survey Limited dated 25 February 2025 are provided in Appendix A.

The Ministry for Environment's (MfE's) Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES:CS) (MfE, 2011a) applies to all site activities that trigger the NES:CS which are defined by Regulation 5 Subclauses (2) to (6). When one or more of these activities occur within a piece of land for which an activity or industry described by the Hazardous Activities and Industries List (HAIL) is either being undertaken, has previously been undertaken or is more likely than not to have occurred on it the NES:CS is enacted.

Therefore, the objective of this investigation was to:

- Determine the applicability of the NES:CS to the site.
- Assess the likelihood of human health risk associated with the proposed soil disturbance activities.
- Characterise site soils within the site (refer to Section 4), to assess the potential risks to human health and the environment; and
- Assess the requirements for potential consents in relation to the NES:CS.

1.2 Scope of Works

The following scope of works was undertaken in accordance with the staged process defined by the MfE Contaminated Land Management Guidelines (CLMG) No. 1 - *Reporting on Contaminated Site in New Zealand*. Ministry for the Environment, Wellington, New Zealand, Revised in 2021 (MfE 2011b).

- Desktop review of:

- Provided council property information.
- The Northland Regional Council (NRC) and Far North District Council (FNDC) Selected Land Use Registers (SLURs).
- Historical aerial photography available on the Local Government Geospatial Alliance's (LGGA's) Retrolens webpage as well as Google Earth Pro service.

- Soil sampling comprising the collection of 10 soil samples from 10 locations within the site.
- As required by the NES:CS, one duplicate sample was collected to confirm the consistency of the analysis.
- Soil samples were sent to RJ Hill Laboratories (Hills) for analysis (with Chain of Custody documentation).
- Preparation of this report in general accordance with current contaminated land guideline documents by a Suitably Qualified and Experienced Practitioner (SQEP) as defined by the NES:CS.

2 SITE INFORMATION/ DESCRIPTION

2.1 Site Identification

The site is located at 12 Hall Road, Kerikeri, approximately 107 m southeast of the Kerikeri Road and Hall Road intersection. Details of the site are listed in Table 1.

Table 1: Site details.

Address	Zone	Legal Description	Area (m^2)
12 Hall Road, Kerikeri	Residential	Lot 2 DP 187009	3,000

The site is relatively flat, rectangular in shape and is bound by Hall Road to the north-east, residential properties to the north-west and south-east and an empty grassed lot associated with the St John Kerikeri Ambulance Station to the south-west

The site setting is presented in Figure 1 below with the centre of the site approximately at geographical position NZGD: 1685925, 6100506.

Figure 1: Site setting.

2.2 Current Land Use

The site is currently in use for residential purposes. The site is zoned Residential under the FNDC Operative District Plan.

The future use is not anticipated to change following the proposed activities.

2.3 Surrounding Land Uses

The site is surrounded by residential properties to the north-east, north-west and south-east, and a commercial property to the south-west (empty lot associated with the St John Kerikeri Ambulance Station).

2.4 Environmental Setting/ Ecological Receptors

To provide protection for natural resources, ecological receptors on or near a site should be considered. The nearest ecological receptor is an unnamed tributary of the Wairoa Stream located approximately 520 m to the south-east of the site.

In relation to this consent application, the unnamed tributary of the Wairoa Stream is not located within an influencing distance (i.e., less than 100 m), therefore, is not considered an environmental receptor.

2.5 Geology

Published geological records indicates that to be directly underlain by Kerikeri Volcanic Group Late Miocene basalt of Kaikohe - Bay of Islands Volcanic Field. These Neogene igneous rocks (basalt)can be expected to contain Basalt lava material, volcanic plugs and minor tuff material. (GNS Science, 2022).

2.6 Site Inspection

A site walkover in conjunction with onsite investigation works was undertaken in May 2025 and the following observations were made (selected site photographs are provided in Appendix B):

- All existing structures are present as outlined by the most recent available 2024 aerial photograph.
- Site is relatively flat.
- No evidence of contamination (i.e., staining, odorous material, burn piles etc.) observed.
- No evidence of any current horticultural activities occurring or present within the site boundaries.

3 HISTORICAL SITE USE

A review of selected publicly available information was undertaken to gain an understanding of the history of the site, particularly the nature and location of potentially contaminating activities that may have occurred within the site. This included reviews of:

- Publicly available historical aerial photographs from the Local Government Geospatial Alliance's (LGGAs) Retrolens and Google Earth.
- Provided council property information, and
- NRCs and FNDCs SLURs

3.1 Historical Aerial Photographs

Historical aerial photographs of the site and the surrounding area taken between 1953 and 2023 were sourced from the LGGAs Retrolens and Google Earth. A summary of observations made from the review of these photographs is provided below. Historical aerial photographs are provided in Appendix C.

Our review comprises visually evident land-use activities within the site boundaries of the site which may pose a risk to human or environmental receptor health. Land-use history activities relevant to the site are summarised as follows:

LGGAs Retrolens

- **1953-1981**: The earliest available historical arial photographs indicates that the site was use for horticultural purposes. No significant changes are observed within the property over this period.

There are no available historical aerial photographs between 1981 and 2003.

Google Earth

- **2003-2018:** The 2003 aerial photograph shows a residential structure and associate outbuildings (e.g., shed, water tank) are now present on the southern end of the site. Horticulture is still present within the front yard area, although most likely not utilised on a commercial scale (i.e., spraying). Driveway/ site access is located along the north-western boundary. No other significant changes are observed over this period.

- **2018-Present:** The 2018 aerial photograph shows all horticultural activities have been removed. The site now appears to be in use specifically for residential purposes from 2018 to date.

In summary, the site was in use for horticultural purposes prior to 1953 until prior to 2003, where a portion of the site was used for residential purposes. By 2018, the site was entirely in use for residential purposes.

3.2 Property Information

A summary of the relevant property information reviewed is provided below and selected property information is provided in Appendix D.

3.2.1 Property Files

The review of the site property information provided by the client contained limited information only. Relevant information included:

- Permits and plans dated 1997 indicate, the site was part of a wider property (i.e., Lot 1 DP158654) that was subdivided in the late 1990s creating two new lots, Lots 1 and 2 DP 187009.

- Based on approved plans (1999) a code of compliance certificate (2001). The residential dwelling was constructed on site by 2001.

The provided information is consistent with what was observed in the available historical aerial photographs, refer to Section 3.1 above.

No other relevant information was contained within the provided property files.

3.2.2 Selected Land Use Register

A review of both the NRC and FNDC selected land use registers (SLURs) was undertaken in May 2025. No HAIL activities have been identified within the property or adjacent properties in close proximity to the site on both SLURs.

3.3 Actual/ Potential HAIL Activities

Based on the historical review of the site, it is considered that the site has potentially been impacted by HAIL category A10 (persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds). Due to the above HAIL activity identified; the entire site (3,000 m^2) can be determined as a 'piece of land' according to the definitions of the NES:CS.

4 SAMPLING AND ANALYSIS PLAN

4.1 Potential Contaminants of Concern

Based on the potential HAIL activity identified and from our experience, it is expected that contaminants of concern (CoC) (if any) associated with horticultural activities would typically be contained within the topsoil/ shallow site soils and may include heavy metals and organochlorine pesticides (OCPs).

4.2 Sampling Methodology

The activities involving the above contaminants are anticipated to include surface spraying which may have been worked into shallow soils during site activities. Based on this, the sampling investigation has targeted the surface horizon from within the proposed soil disturbance area comprising topsoil/ shallow site soils from up to 0.2 m below ground level (bgl) to target the CoCs and to quantify the nature and dispersion of any residual contamination in relation to the soil disturbance activities.

Soil sampling was undertaken in general accordance with the MfE CLMG No.5 - *Site Investigation and Analysis of Soils* (revised 2021) (MfE, 2011c). The MfE sampling guidelines for a site of this size (approximately 3,000 m^2) recommend up to nine sampling points. From our experience, the following sampling programme was undertaken:

- From a total of 10 sample locations (designated S01-S10), 10 shallow soil samples were collected from the surface horizon comprising topsoil from 0.0 - 0.2 m bgl.
- As required by the NES:CS, a duplicate soil sample from one location was collected and labelled under a unique identification QC01.
- Sampling was undertaken in accordance with Geologix Standard Operating Procedures including:
    - Each soil sample was collected using a clean pair of nitrile gloves for each sample, then placed into laboratory supplied sample containers. Prior to sampling at each

location, the sampling equipment was decontaminated by washing with potable water, followed by a decontamination solution and rinsing with deionised water.

- The soil samples were placed in new laboratory supplied sample containers and dropped off at RJ Hill Laboratories (Hills) in Auckland alongside Chain of Custody documentation.

- On the basis of the site history and associated potential contaminating activities that were identified at the site, all samples were analysed for metals (arsenic, cadmium, chromium, copper, lead, nickel, mercury and zinc) and selected samples analysed for OCPs and also, polycyclic aromatic hydrocarbons (PAHs).

- The duplicate sample was analysed for metals only.

Figure 2: Sample locations.

4.3 Quality Assurance and Quality Control

The quality assurance/ quality control (QA / QC) procedures employed during the works included:

- Collection of soil samples by suitably qualified staff in accordance with Geologix standard

operating procedures.

- Submission of all samples to the analytical laboratory within the acceptable holding times for the contaminants of concern.
- Submission of one duplicate soil sample from location S06. This duplicate sample was submitted under the unique identification QC01 and analysed for metals only.
- Sample analysis by Hill Laboratories who are accredited by International Accreditation New Zealand (IANZ) for the analyses performed.

4.4 Soil Guideline Values

The following environmental guidelines were used to screen the sample results. Relevant guidelines values are provided in the data analysis table attached as Appendix E.

4.4.1 Background Concentrations

According to Regulation 5(9) of the NES:CS, if a DSI can demonstrate that any contaminants on a HAIL site are at, or below, background concentrations, then the NES:CS regulations do not apply. However, there are no natural background concentration available for Northland region at the time of this investigation. Therefore Regulation 5(9) of the NES:CS is not applicable.

4.4.2 Soil Contaminant Standards (NES:CS)

The NES:CS (MfE, 2011) details soil contaminant standards (SCSs) for seven inorganic substances. SCSs are available for these substances and compounds when present in land used for five land use scenarios. The contaminants analysed at this site for which SCSs are available are arsenic, cadmium, chromium, copper and lead. For this site, a residential 10% produce land use scenario was adopted, which includes the following source-pathway-receptor assumptions:

- The selected residential SCSs assume that intended future land use will be a residential lot, for single dwelling sites with gardens, including some minor home-grown produce consumption.
- Potential receptors include site workers during the redevelopment works and residents following the redevelopment.
- The NES:CS adopted standards for residential land-use have been used to assess risks to both site workers and end users of the site.
- It has been assumed that the soil pH is 5, and that all lead is present in inorganic form.

4.4.3 Other Applicable Human Health Standards

For contaminants of potential concern that are not priority contaminants, the NESCS

references the hierarchy defined in the MfE CLMG No.2 – *Hierarchy and Application in New Zealand of Environmental Guideline Values* (MfE, 2011d).

In accordance with this hierarchy, the Australian National Environment Protection Council (NEPC) (1999 rev: 2013) National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) has been used for two metals (nickel and zinc). Health-based investigation levels for 'Residential A' land use have been selected in accordance with the proposed end use of the site and to protect site workers during the development work. 'Residential A' investigation levels are described in the ASC NEPM to include "*Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools*" (NEPC 2013).

5 SAMPLING RESULTS

Laboratory analytical results of the samples collected are summarised in Section 5.1 below and the soil analytical results table attached as Appendix E. The full laboratory analytical reports are provided in Appendix F.

5.1 Analytical Results

As previously mentioned, all samples (designated S01-S10) were analysed for metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) and selected samples for OCPs and PAHs. The results of the laboratory analysis indicated the following:

- No heavy metals were detected above human health criteria.
- Low level DDT (4,4'-DDE) was detected in three of the four samples (S01, S04 and S05).
- No PAHs were detected above the laboratory limit of reporting (LoR) in any of the samples analysed for PAHs.
- In addition, no visual or olfactory evidence of contamination was observed in any of the soil samples collected.

5.2.1 Confidence in Results

The analytical laboratory is required to conduct cross checking and routine duplicate sample analysis to maintain an IANZ accreditation. Discrete project specific duplicate analysis was undertaken to confirm the reliability of laboratory analysis. In accordance with CLMG, primary to secondary sample acceptable relative difference (RPD) is 50 % for soil samples.

One duplicate composite sample (QC01) was analysed for metals to replicate the analysis of sample S06. The relative percentage difference (RPD) between the primary and duplicate samples ranged between 0% and 15%. As such, it is considered that the precision of the sampling and analysis is well within acceptable limits. The results are presented in the data analysis table attached as Appendix E.

5.2 Summary of Results

The result of analytical testing indicates that contaminants concentrations of the CoCs are below human health guidelines for a residential land use scenario.

6 DISPOSAL DOCUMENTATION

A disposal criteria analysis for metals has been made in accordance with the MfE Hazardous Waste Acceptance Criteria (WAC) screening criteria for Class A and B landfill facilities and summarised as follows:

- No exceedance of Class A landfill screening criteria.
- Localised exceedance of Class B landfill screening criteria for:
    - Arsenic from location S05,
- Site wide exceedance of Class B landfill screening criteria for:
    - Total chromium from all sample locations (S01-S10),
    - Copper from all sample locations (S01-S10),
    - Lead from all sample locations (S01-S10), and
    - Zinc from all sample locations (S01-S10).

Based on the above, soils do not meet the requirement and definition of clean fill and any soil proposed for removal from site shall be disposed of to an appropriate managed fill facility. Sample results should be provided to a managed fill facility to determine if they can accept.

7 RISK ASSESSMENT

Although all laboratory results were below the human health criteria and no natural background concentrations for northland region are available. Based on the information presented in this report, a quantitative risk assessment of contamination potential to cause an effect upon human and/ or ecological receptors was still undertaken. This is further developed into a regulatory assessment for consent.

The available information summarised above (Sections 2 – 6) indicates the site has been predominantly used for horticultural activities conducted from prior to 1953. HAIL activity (category A10) was identified, particularly associated with contaminants associated with historical horticultural land-use.

The following Conceptual Site Model (CSM) has been developed for the potentially complete contaminant pathways at the site:

Table 2: Conceptual site model.

Source	Pathway	Receptor	Risk Score
Metals and OCPs	• Incidental soil ingestion. • Inhalation of dusts. • Dermal absorption.	• Site users/ workers of the site. • Future site users.	• Low – as results below human health limits
Metals, and OCPs in soil taken away from site.	• Migration	• Groundwater • Surface water	• Low – provided taken to a suitable managed fill facility

For an exposure pathway to be complete and subsequently cause a risk, there must be a contamination source, a contaminant transport mechanism (pathway) and a receptor, typically human or ecological.

7.1 Quantification of Risk and Discussion

The actual and potential HAIL activities undertaken (refer to Section 3.3) on site identifies very low/ negligible potential risk to human health across the entire site for the proposed site use.

As such, and due to concentrations below human health criteria, a very low risk is applied to long-term human health exposure to the continued use for residential purposes if these soils are to remain on site.

8 REGULATORY CONSIDERATIONS (CONTAMINATED LAND)

Based on the findings of this investigation, the NES:CS regulations apply to the entire site area. Proposed subdivision plans by Thomson Survey Limited dated 25 February 2025 are provided in Appendix A. This section provides clarification of consent conditions against national, regional and local standards and regulations in regard to subdivision and soil disturbance only.

8.1 National Environmental Standards

The NES:CS regulation applies to activities of subdivision and soil disturbance where HAIL activity is being / has been / more likely than not to have been undertaken. The results of the historical review indicated that, under subclause (7) the NES:CS applies to the site due to HAIL Category A10 (Persistent pesticide bulk storage or use including sport turfs, market garden green house or spray sheds).

It is expected that only minor soil disturbance would be undertaken, however, the NES:CS allows (per year) a soil disturbance volume of 25 m^3 per 500 m^2 of `piece of land` area and soil disposal volume of 5 m^3 per 500 m^2 of piece of land area. Calculated on a 'piece of land' basis (entire site area of 3,000 m^2), allowable soil disturbance volumes are 150 m^3 for soil disturbance and/ or 30 m^3 for off-site disposal per year to be able to comply with this activity

status.

Therefore, where the presumed potential future soil disturbance volume remains below or at the allowable limits, the activity of soil disturbance would be considered to be a permitted activity. In addition, should any soil disturbance volumes exceed the above allowable thresholds, the activity would be considered as a controlled activity.

In relation to the proposed subdivision, it is highly unlikely that there will be a risk to human health if the activity is done to the site. Therefore, activities of subdivision is considered to be a controlled activity.

8.2 Proposed Regional Plan

Potentially contaminated land refers to land where a HAIL activity is / has been undertaken. Due to the identified HAIL activity within the site, the piece of land (i.e., the entire site) is considered to be potentially contaminated land. However, based on our investigation, contaminants do not pose a human health risk or environmental risk. Therefore, the proposed activity (subdivision, and potential future soil disturbance) complies with rule C.6.8.2 (discharges from contaminated land), which is considered a permitted activity under the proposed regional plan.

In addition, and to be noted; Northland Regional Plan Rule C.6.8.1 (Investigating potentially contaminated land – permitted activity), the disturbance of land for a site investigation to assess the concentration of hazardous substances in soil, water or air is a permitted activity, provided:

1) The site investigation is certified by a suitably qualified and experienced practitioner, and

2) The person or organisation initiating the site investigation provides a copy of the site investigation report to the Regional Council within three months of the completion of the investigation, and

3) Site investigations undertaken to assess the concentrations of contaminants in soil are undertaken in accordance with Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (Ministry for the Environment, 2011).

This report complies with items 1 and 3 above, therefore, to fully comply with rule C.6.8.1, this report must be submitted to the Regional Council within three months of the completion of the investigation.

9 SUMMARY AND RECOMMENDATIONS

This combined PSI/ DSI has been prepared by Geologix for for BVR Trust & SKJ Trust Partnership (the ‘Client’). This investigation was to assist with the Resource Consent application in relation to the proposed residential redevelopment, subdivision and associated soil disturbance on a property located at 15 Hall Road, Kerikeri (‘site’). The following summarises the findings of the investigation:

The site was fully utilised for horticultural purposes (HAIL category A10) until approximately 2001, where a portion of the site (south-western portion) was then used for residential purposes. By 2018, the site was entirely in use for residential purposes only.

Based on the HAIL activity above, the NES:CS applies.

HAIL category A10 was identified (as indicated in Section 3.3), however, soil results confirm that:

- No heavy metals or OCPs were detected over human health criteria guidelines.
- No PAHs were detected above the laboratory level of reporting in any of the samples analysed for PAHs.

Based on the findings of the investigation, Geologix considers that there is very low risk to long-term human health exposure in the proposed subdivision and associated soil disturbance activities if these soils are to remain on site. Site soils, while suitable for onsite use (subject to geotechnical suitability), soil proposed for removal from site (if any) shall be disposed of to an appropriate managed fill facility .

For subdivision and soil disturbance activities under Regulation 8 of the NES:CS the soil contamination does not exceed the applicable standard in Regulation 7. Therefore, subdivision and/ or any soil disturbance activities associated with the proposed redevelopment regarding contaminated land will be required as a controlled activity under the NES:CS and in addition permitted activity under the proposed Northland Regional Plan.

As previously mentioned, to comply with rule C.6.8.1, this report must be submitted to the Regional Council within three months of the completion of the investigation.

10 LIMITATIONS

This report has been prepared for BVR Trust & SKJ Trust Partnership as our Client. It may be relied upon by our Client and their appointed Consultants, Contractors and for the purpose of Consent as outlined by the specific objectives in this report. This report and associated recommendations, conclusions or intellectual property is not to be relied upon by any other party for any purpose unless agreed in writing by Geologix Consulting Engineers Ltd and our Client. In any case the reliance by any other party for any other purpose shall be at such parties' sole risk and no reliability is provide by Geologix Consulting Engineers Ltd.

The opinions and recommendations of this report are based on plans, specifications and reports provided to us at the time of writing, as referenced. Any changes, additions or amendments to the project scope and referenced documents may require an amendment to this report and Geologix Consulting Engineers should be consulted. Geologix Consulting Engineers Ltd reserve the right to review this plan.

The recommendations and opinions in this report are based on arisings extracted from sample points at discrete locations. The nature and continuity of subsurface conditions, interpretation of ground condition and models away from these specific sampling

investigation locations are inferred. It must be appreciated that the actual conditions may vary from the assumed conceptual site model. Differences from the encountered ground conditions during subdivision construction may require an amendment to the recommendations of this report.

11 REFERENCES

Far North District Council Maps, https://www.fndc.govt.nz/Our-services/Far-North-Maps. Accessed May 2025.

GNS Science, 2022. New Zealand Geology Webmap, Scale 1:250,000, http://data.gns.cri.nz/geology/. Accessed May 2025.

Ministry for the Environment, 2011a. Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Ministry for the Environment, 2011b. Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (revised 2021). Wellington, New Zealand.

Ministry for the Environment, 2011c. Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (revised 2021). Wellington, New Zealand.

Ministry for the Environment, 2011d. Contaminated Land Management Guidelines No. 2: Hierarchy and Application in New Zealand of Environmental Guideline Values (revised 2011). Wellington, New Zealand.

Northland Regional Council Online Maps, https://www.nrc.govt.nz/your-council/online-services/online-maps. Accessed May 2025.

Retrolens Historical Image Resource. https://retrolens.co.nz/. Accessed May 2025.

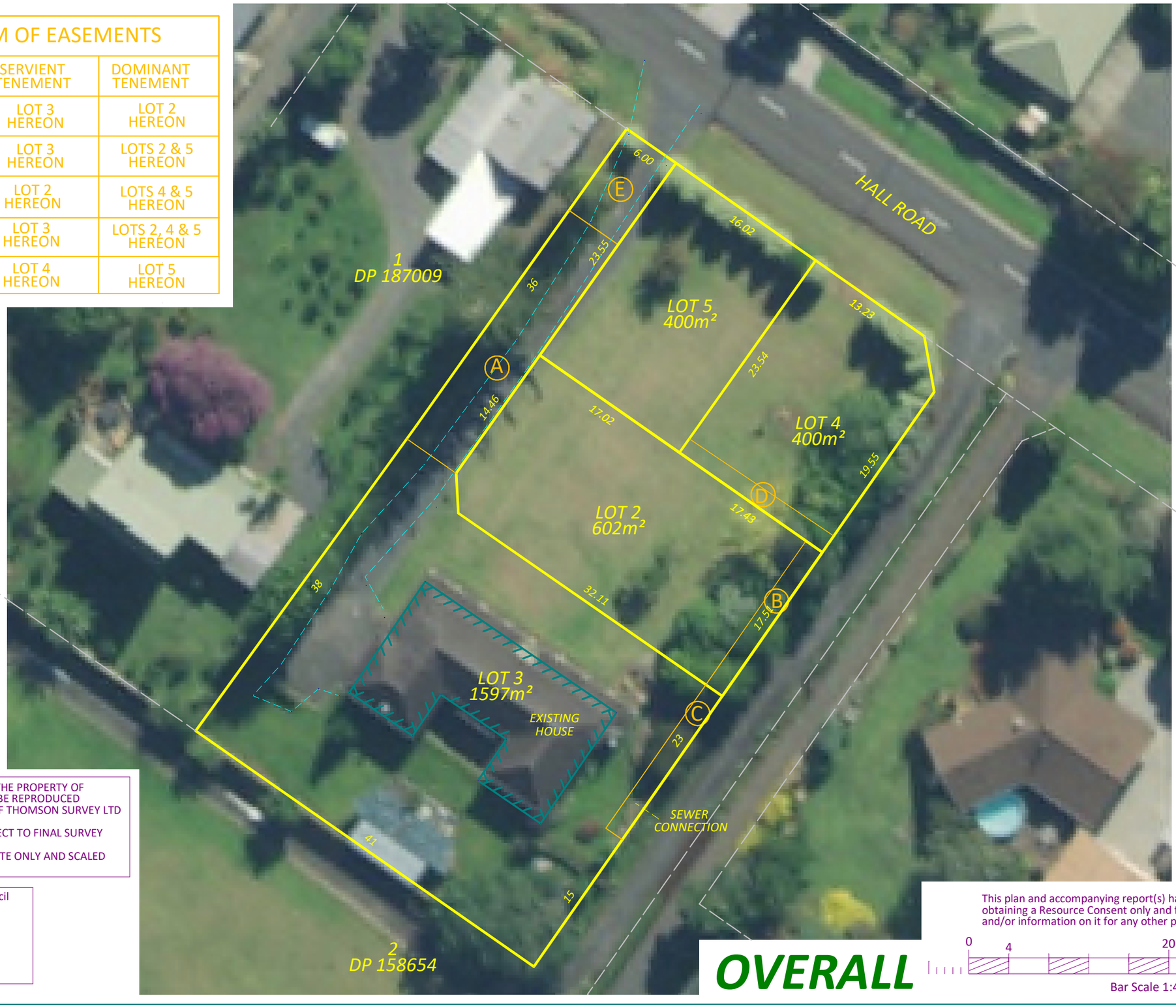
Users' guide, 2012: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health. April 2012.

APPENDIX A

Subdivision Plans

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	Ⓐ	LOT 3 HEREON	LOT 2 HEREON
	Ⓔ	LOT 3 HEREON	LOTS 2 & 5 HEREON
CONVEY SEWAGE	Ⓑ	LOT 2 HEREON	LOTS 4 & 5 HEREON
	Ⓒ	LOT 3 HEREON	LOTS 2, 4 & 5 HEREON
	Ⓓ	LOT 4 HEREON	LOT 5 HEREON



N

AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY

TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council
Comprised in: NA117B/51
Total Area: 3000m²
Zoning: Residential
Resource features: NIL

OVERALL

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 2 DP 187009

12 HALL ROAD, KERIKERI

PREPARED FOR: JURISICH

	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev	KY	25.02.25

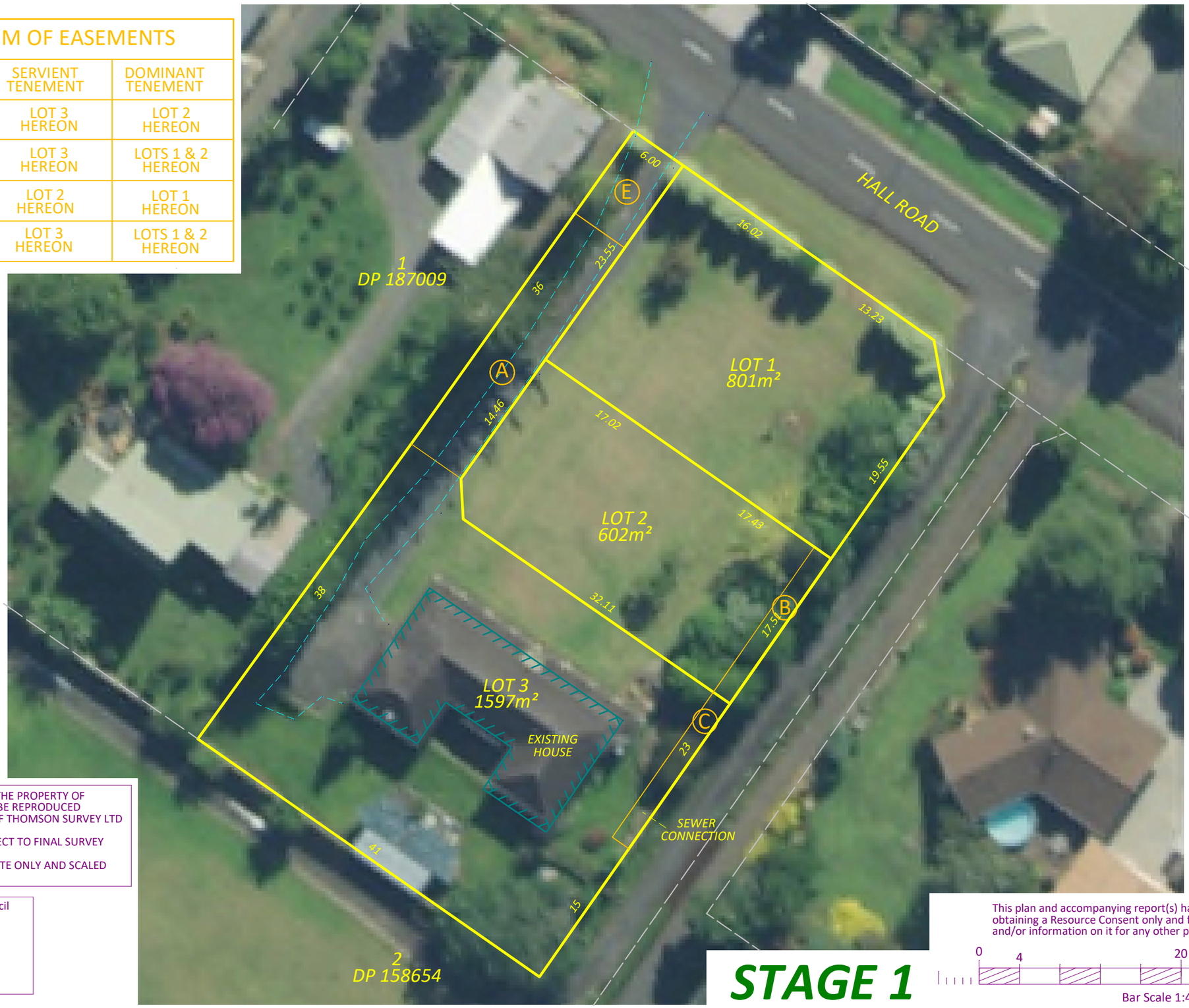
ORIGINAL
SCALE 1:400
SHEET SIZE A3

10740 Scheme 20250225

Surveyors Ref. No: 10740

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	(A)	LOT 3 HEREON	LOT 2 HEREON
	(E)	LOT 3 HEREON	LOTS 1 & 2 HEREON
CONVEY SEWAGE	(B)	LOT 2 HEREON	LOT 1 HEREON
CONVEY SEWAGE	(C)	LOT 3 HEREON	LOTS 1 & 2 HEREON



N

Local Authority: Far North District Council
Comprised in: NA117B/51
Total Area: 3000m²
Zoning: Residential
Resource features: NIL

STAGE 1

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 2 DP 187009

12 HALL ROAD, KERIKERI

PREPARED FOR: JURISICH

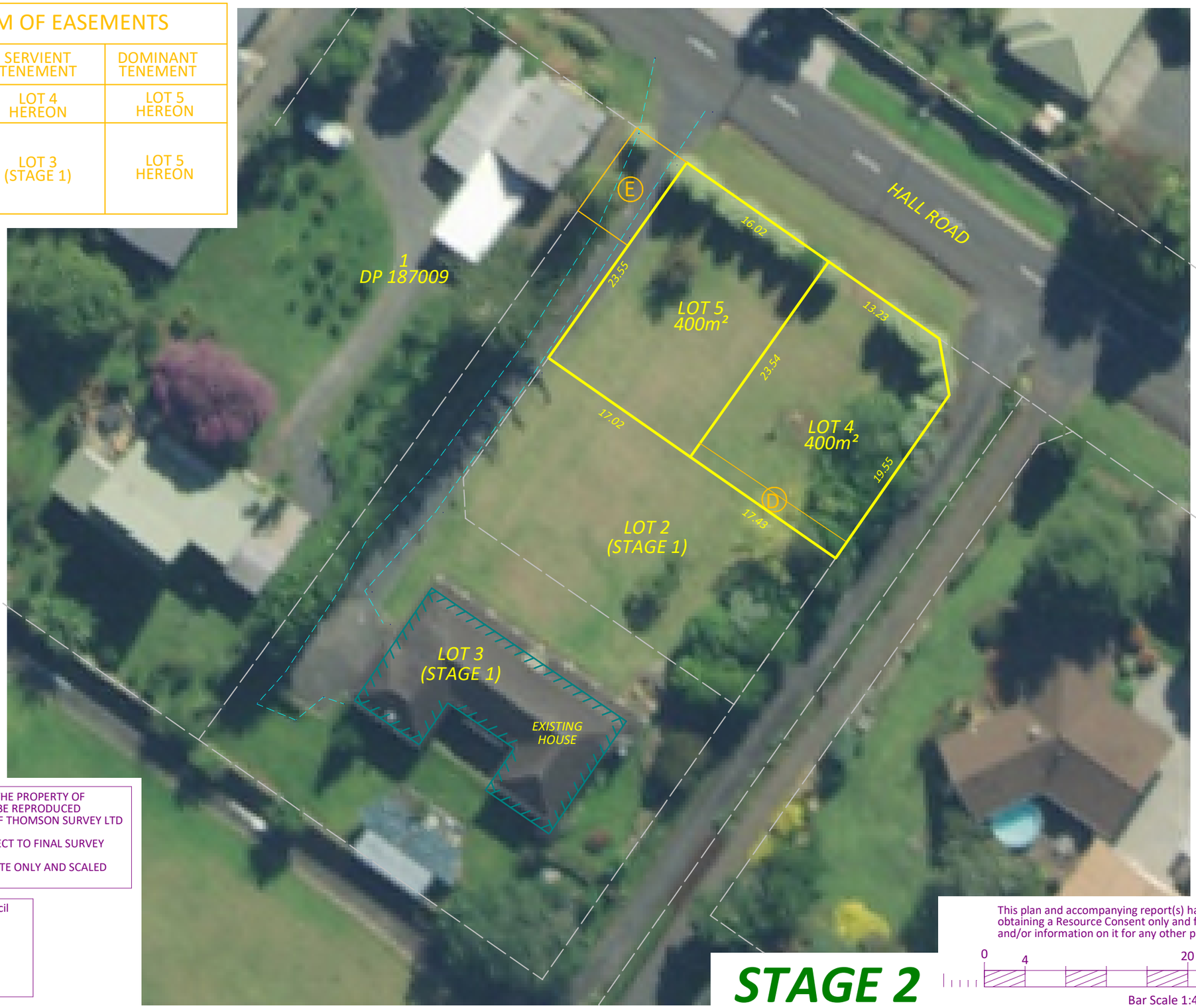
	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev		

ORIGINAL
SCALE 1:400
SHEET SIZE A3
9221 SCHEME 1.LCD

Surveyors Ref. No: 9221

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
CONVEY SEWAGE	(D)	LOT 4 HEREON	LOT 5 HEREON
RIGHT OF WAY, TELECOMMUNI-CATIONS, ELECTRICITY & WATER SUPPLY DRAIN WATER	(E)	LOT 3 (STAGE 1)	LOT 5 HEREON



Local Authority: Far North District Council
Comprised in: LOT 1 (STAGE 1)
Total Area: 801m²
Zoning: Residential
Resource features: NIL

STAGE 2

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 4 20 40m

Bar Scale 1:400 @ A3

THOMSON SURVEY LIMITED
315 Kerikeri Rd
P.O. Box 372 Kerikeri
Email: kerikeri@tsurvey.co.nz
Ph: (09) 4077360 Fax (09) 4077322
Registered Land Surveyors, Planners & Land Development Consultants

PROPOSED SUBDIVISION OF LOT 1 (STAGE 1)

12 HALL ROAD, KERIKERI

PREPARED FOR: JURISICH

	Name	Date
Survey		
Design		
Drawn	SL	28.09.17
Approved		
Rev	KY	25.02.25

ORIGINAL
SCALE 1:400
SHEET SIZE A3

10740 Scheme 20250225

Surveyors Ref. No: 10740

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consulting engineers

APPENDIX B

Selected Site Photographs

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consulting engineers

SITE PHOTOGRAPHS

Project: 12 Hall Road, Kerikeri
Project no.: C0641N
Figure no.: 1 of 2

Photograph 1: Existing house, looking south.

Photograph 2: Front yard area, looking north-east.

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SITE PHOTOGRAPHS

Project: 12 Hall Road, Kerikeri
Project no.: C0641N
Figure no.: 2 of 2

Photograph 3: Rear of the property, looking south-east.

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consulting engineers

APPENDIX C

Historical aerial photographs

geologix consulting engineers	**Historical Aerial Photographs**	**Project: 12 Hall Road, Kerikeri** **Project no.: C0641N** **Figure no.: 1 of 6**

1953 - Retrolens

1968 - Retrolens

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Historical Aerial Photographs

Project: 12 Hall Road, Kerikeri
Project no.: C0641N
Figure no.: 2 of 6

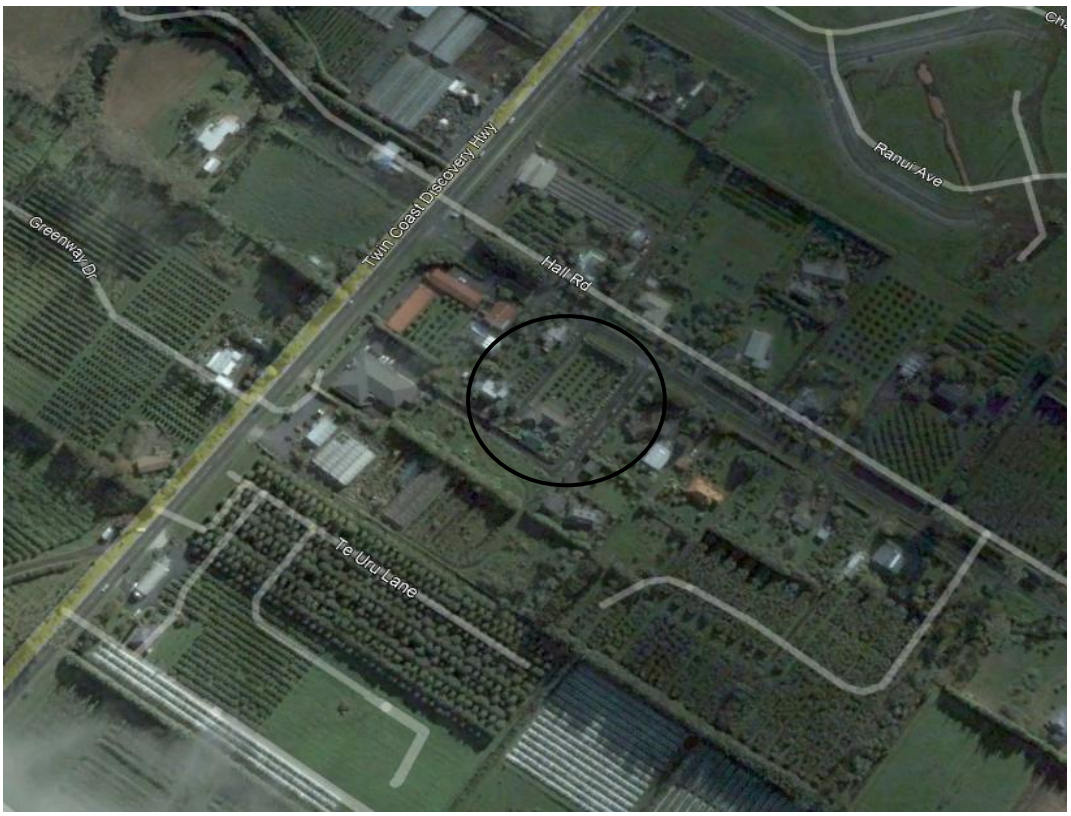
1977 - Retrolens

1979 - Retrolens

geologix consulting engineers	**Historical Aerial Photographs**	**Project: 12 Hall Road, Kerikeri** **Project no.: C0641N** **Figure no.: 3 of 6**

1981 - Retrolens

2003 - Google Earth



geologix consulting engineers	Historical Aerial Photographs	Project: 12 Hall Road, Kerikeri Project no.: C0641N Figure no.: 4 of 6

2009 - Google Earth

2013 - Google Earth

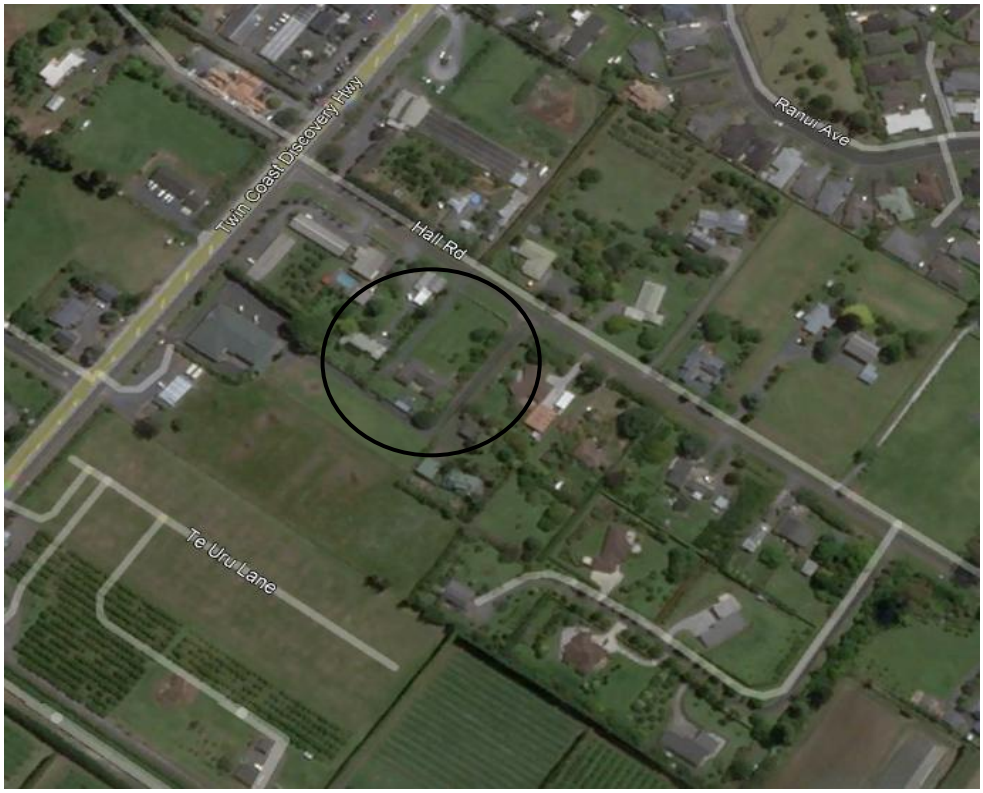
geologix consulting engineers	**Historical Aerial Photographs**	**Project: 12 Hall Road, Kerikeri** **Project no.: C0641N** **Figure no.: 5 of 6**

2016 - Google Earth

2018 - Google Earth

geologix consulting engineers	**Historical Aerial Photographs**	**Project: 12 Hall Road, Kerikeri** **Project no.: C0641N** **Figure no.: 6 of 6**

2019 - Google Earth



2023 - Google Earth

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consulting engineers

APPENDIX D

Selected Property Information

FAR NORTH DISTRICT COUNCIL

IN THE MATTER of the Resource Management Act 1991:

AND

IN THE MATTER of an application under the aforesaid Act, 1991 by N NELSON

APPLICATION NUMBER RC 1970717

APPLICATION FOR RESOURCE CONSENT TO SUBDIVIDE.

The property in respect of which the application is made, is situated at Hall Road, Kerikeri.

HEARING

Before the Hearings Committee of the Far North District Council, on the 26th of August 1997.

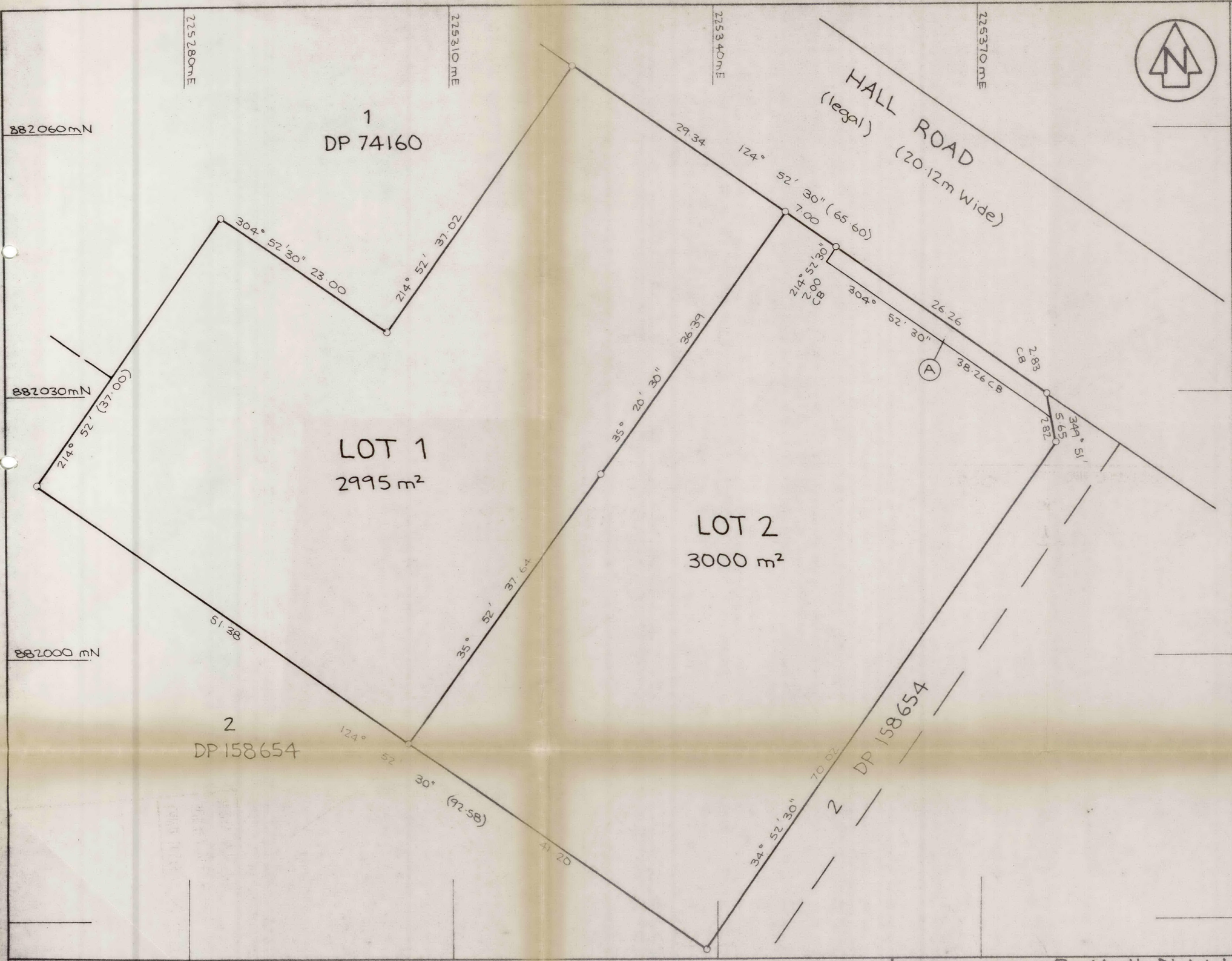
DECISION

"**THAT** PURSUANT TO SECTION 105(1)(c) OF THE RESOURCE MANAGEMENT ACT 1991 THE FAR NORTH DISTRICT COUNCIL GRANTS CONSENT TO APPLICATION NUMBER RC 1970717 BY N NELSON TO SUBDIVIDE LOT 1 DP 158654 TO CREATE A RURAL RESIDENTIAL ALLOTMENT, SITUATED AT HALL ROAD, KERIKERI, SUBJECT TO THE FOLLOWING CONDITIONS:

1. THAT BEFORE A CERTIFICATE IS ISSUED PURSUANT TO SECTION 224(c) OF THE ACT THE SUBDIVIDING OWNER SHALL:

   (a) PAY TO COUNCIL A GST INCLUSIVE RESERVES CONTRIBUTION BEING THE VALUE OF 130M^2 OR 7.5% (WHICHEVER IS THE LESSER) OF THE ESTIMATED MARKET VALUE OF LOT 2. SUCH A VALUE IS TO BE OBTAINED BY THE APPLICANT FROM A REGISTERED VALUER, AND A COPY SENT TO COUNCIL IN CONJUNCTION WITH THE SECTION 224(c) CERTIFICATE REQUEST.

   (b) PROVIDE FORMED, METALLED AND CULVERTED ACCESS TO THE BOUNDARY OF LOT 2 IN ACCORDANCE WITH THE COUNCIL STANDARD. SEAL ENTRANCE PLUS SPLAYS FOR A MINIMUM OF 2



Approvals

- - - - - - - -

Registered Owners

Approved pursuant to Section 223 of the Resource Management Act 1991 on the day of 1997
The common Seal of the Far North District Council is affixed hereto in the presence of:

- - - - - - - - - - - - - -

RC 1970717 Under delegated authority

Area marked (A) is to be subject to a restrictive covenant.

New cst allocated

Lot 1

Lot 2

Total Area 5995 m²

Comprised in CT 95A/905 (All)

I, Denis McGregor Thomson of Kerikeri,
Registered Surveyor and holder of an annual practising certificate (or who may act as a registered surveyor pursuant to section 25 of the Survey Act 1986) hereby certify that this plan has been made from surveys executed by me or under my directions, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof.
Dated at Kerikeri this 7th day of October 19 97 Signature D Thomson

Field Book ..... p..... Traverse Book ..... p .....
Reference Plans .....
.....
Examined ..... Correct .....

Approved as to Survey

...../...../..... Chief Surveyor

Deposited this ..... day of ..... 19 ....

District Land Registrar

File
Received
Instructions

LAND DISTRICT North Auckland
SURVEY BLK. & DIST. X1 Keri Keri
NZMS 261 SHT ..... RECORD MAP No Keri Keri 13

LOTS 1 AND 2 BEING A SUBDIVISION OF LOT 1, DP 158654.

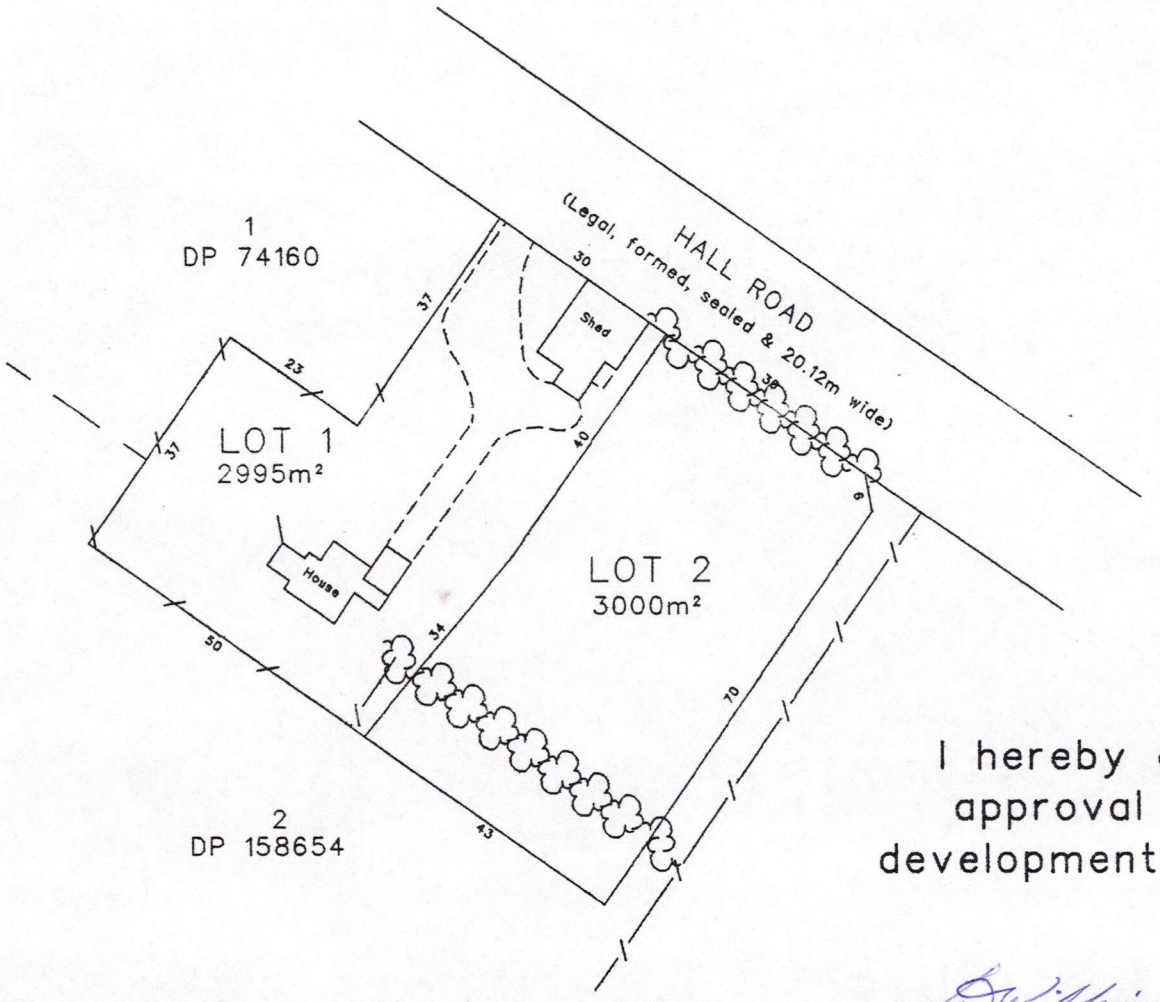
TERRITORIAL AUTHORITY Far North District
Surveyed by Thomson & King (Keri Keri)
Scale 1:300 Date September 1997

A.J. BEVIN, SURVEYOR GENERAL, LAND INFORMATION, NEW ZEALAND

Ref 5281
Nelson

L.I.N.Z. FORM DIS "APPROVED M92/05"

SAMPLE



I hereby grant my approval for this development to proceed.

Lan Wilkinson

THOMSON AND KING (KERIKERI)
REGISTERED SURVEYORS & RESOURCE MANAGERS
Fairway Drive, Kerikeri
PH (09) 4077360, Fax (09) 4077322

PROPOSED SUBDIVISION OF LOT 1, DP 158654.

Prepared for:
Nan Nelson

SHEET

DRAWN DSB	CHECKED	SCALE	SERIES OF
DATE Jan '97			REF 5281

BCDEC

CODE COMPLIANCE CERTIFICATE
UNDER SECTION 43(3) BUILDING ACT 1991

APPLICABLE TO BUILDING CONSENT NUMBER

ABA 992275

Applicant: FLETCHER FAMILY TRUST

SITE LOCATION:

Address:	HALL ROAD, R 219
Legal Description:	LOT 1 DP 187009 BLK XI KERIKERI SD
Valuation No:	00219 75400

PROJECT DESCRIPTION:

Description of Work: NEW DWELLING

Intended Life: Indefinite, but not less than 50 years

THIS IS

[X] A final Code Compliance Certificate issued in respect of all of the building work under the above Building Consent.

[ ] An interim Code Compliance Certificate in respect of part only, as specified in the attached particulars, of the building work under the above Building Consent.

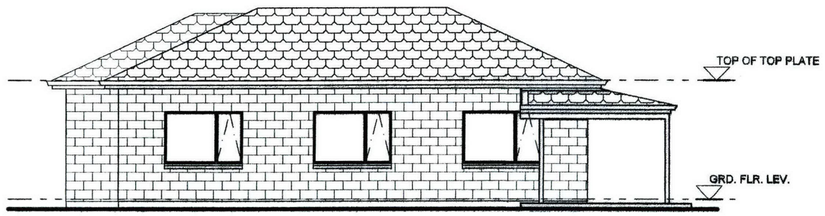
[ ] This certificate is issued subject to the conditions specified in the attached ______ pages headed "Conditions of Code Compliance Certificate" (being this certificate).

SIGNED FOR AND ON BEHALF OF THE COUNCIL

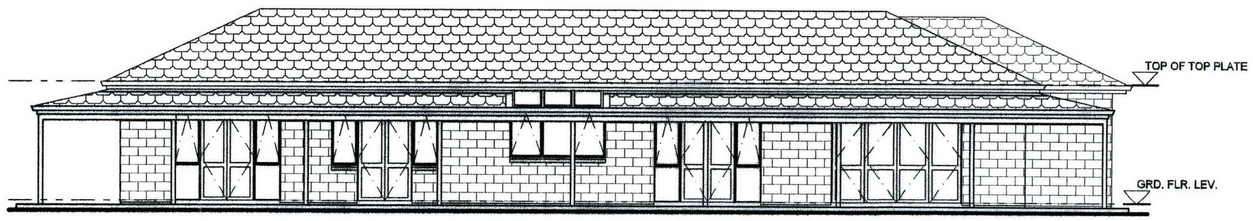
Name: [illegible]

Position: SUPPORT OFFICER

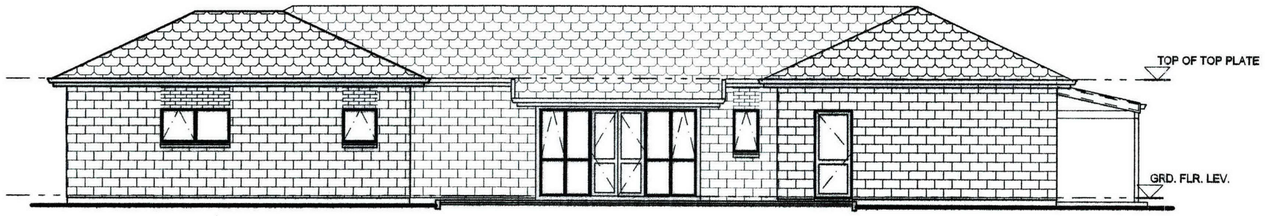
Date: 10/02/2001



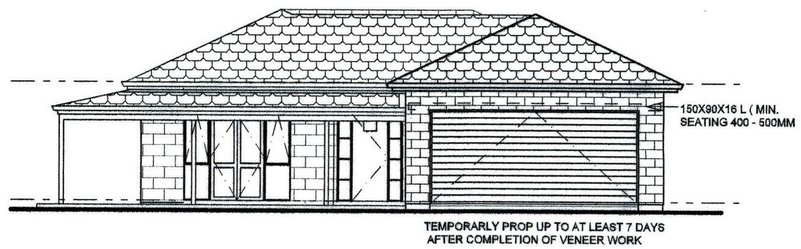
SOUTH EAST ELEVATION



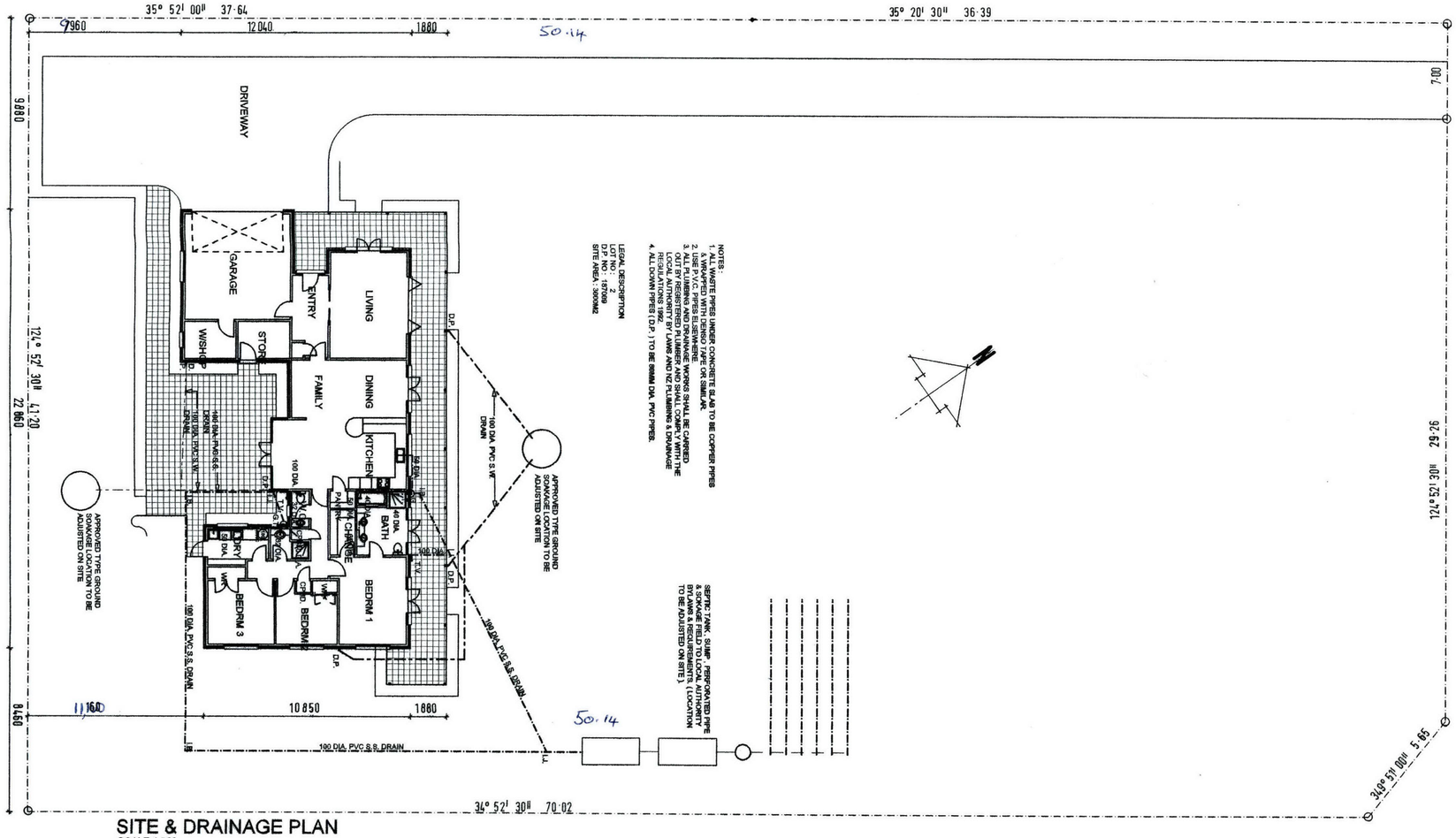
NORTH EAST ELEVATION



SOUTH WEST ELEVATION



NORTH WEST ELEVATION



SITE & DRAINAGE PLAN
SCALE 1:200

APPROVED PERMIT No. 992275
FAR NORTH DISTRICT COUNCIL

APPROVED
Date 30-8-99
Signed:
FAR NORTH
DISTRICT COUNCIL

STORMWATER
All yard - stormwater on driveways, paths, courtyards, etc. is to be collected by ceaspit(s) and piped to an outfall to the satisfaction of the County Engineer.

BUILDER TO CHECK LOCATION, LEVELS, DEPTHS ETC. OF ALL INGROUND SERVICES PRIOR TO COMMENCEMENT.

Allowance is to be made to be able to extend the septic tank effluent system if proved necessary.

NOTIFIABLE INSPECTIONS
- Footing Inspection Required ✓
- Bond Beam Inspection required ✓
- Pre-floor Inspection required ✓
- Prelining Inspection required ✓
- Final Inspection required ✓

These plans and specifications must be kept 'on site' during construction. All boundary pegs must be located and flagged before work is commenced.

SOON LOO CONSULTANTS LTD
UNIT 13, 88 COOK ST.
P.O. BOX 5137, AUCKLAND 1
PH. 307-3649 FAX 309-3735

ex/6165

DENIS LE ONG Architect
B. Arch, A.N.Z.I.A.
20 Huron St.
Takapuna
PO Box 33 467
Takapuna
Auckland
New Zealand
Phone: (09) 486 5008
Fax: (09) 489 4540

PROPOSED FLETCHER HOUSE AT LOT NO. 2 HALL RD. KERIKERI

Amendment	Date

TITLE: SITE & DRAINAGE PLAN
ELEVATIONS

Notes:
1. All works is to comply with the New Zealand Building Code 1992
2. All framing & fixing is to comply with NZS 3604 1990.
3. Contractor must check all levels & dimensions on site prior to fabrication.
4. All glazing works is to comply with NZS 4223 & NZBC F2/ AS1.

SHEET NO. WD 1

DRAWN J.TAN	CHECKED	SCALE 1:100 & 1:200	
DATE JUNE 99			JOB.NO. 328198

geologix
consulting engineers

APPENDIX E

Summary of Soil Analytical Results

geologix
consulting engineers

Table 1: Soil Analytical Results	Sample Name	S01	S02	S03	S04	S05	S06			S07	S08	S09	S10	NES:CS [1] Human Health Residential 10 % Produce Criteria
							Primary	Duplicate (QC01)	RPD%					
Heavy Metals														
Arsenic		5	6	6	7	14	6	6	0	6	6	9	4	20
Cadmium		0.57	0.57	0.68	0.61	0.8	0.44	0.38	15	0.43	0.52	0.6	0.2	3
Chromium		38	31	51	57	64	37	36	3	38	40	45	27	460
Copper		90	72	60	70	69	46	44	4	74	53	98	32	>10,000
Lead		18.3	12.5	19.7	16.6	14.8	15.4	15.1	2	14	16	24	11	210
Mercury		0.21	0.26	0.22	0.20	0.21	0.22	0.21	5	0.22	0.31	0.24	0.22	310
Nickel		7	9	9	9	9	6	7	15	6	7	9	7	400 [2]
Zinc		50	48	74	57	100	45	44	2	43	55	102	31	7,400 [2]
Detected Organochlorine Pesticides (OCPs). Refer to full laboratory reports attached.														
2,4'-DDD		< 0.015	-	-	< 0.015	< 0.015	-	-	-	-	< 0.015	-	-	*
4,4'-DDD		< 0.015	-	-	< 0.015	< 0.015	-	-	-	-	< 0.015	-	-	*
2,4'-DDE		< 0.015	-	-	< 0.015	< 0.015	-	-	-	-	< 0.015	-	-	*
4,4'-DDE		0.035	-	-	0.024	0.015	-	-	-	-	< 0.015	-	-	*
2,4'-DDT		< 0.015	-	-	< 0.015	< 0.015	-	-	-	-	< 0.015	-	-	*
4,4'-DDT		< 0.015	-	-	< 0.015	< 0.015	-	-	-	-	< 0.015	-	-	*
Total DDT Isomers		< 0.09	-	-	< 0.09	< 0.09	-	-	-	-	< 0.09	-	-	70
Polycyclic Aromatic Hydrocarbons (PAHs). No PAHs detected over the laboratory limit of reporting in any of the samples analysed for PAHs. Refer to full laboratory reports attached.														

Highlighted, coloured cell indicates samples exceeds human health guidelines.

Notes:

All results in milligrams per kilogram (mg/kg) unless stated otherwise.

A hyphen (-) indicates criteria are not available or sample not tested for this analyte.

All sample depth units are: metres below ground level (m bgl).

< LOR Indicates less than laboratory level of reporting.

* For DDD,DDE and DDT, the concentration is calculated as the sum of each DDT isomers.

Chromium provided as Chromium VI

1. Ministry for the Environment National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health; residential 10 % produce land use scenario.

2. National Environmental Protection Measure (Assessment of Site Contamination) 1999, update 2013 Schedule B1, Land use Class Residential A.

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consulting engineers

APPENDIX F

Laboratory Reports

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

0508 HILL LAB (44 555 22)
+64 7 858 2000
mail@hill-labs.co.nz
www.hill-labs.co.nz

Certificate of Analysis

Client:	Geologix Consulting Engineers Limited	**Lab No:**	3903577 SPv1
Contact:	Ray Mayor C/- Geologix Consulting Engineers Limited 13/2181 East Coast Road Stanmore Bay Silverdale 0932	**Date Received:**	30-May-2025
		Date Reported:	04-Jun-2025
		Quote No:	113810
		Order No:	
		Client Reference:	C0641N-12 Hall Road
		Submitted By:	Ganesh Bajgain

Sample Type: Soil

Sample Name:		S01 28-May-2025	S02 28-May-2025	S03 28-May-2025	S04 28-May-2025	S05 28-May-2025
Lab Number:		3903577.1	3903577.2	3903577.3	3903577.4	3903577.5
Individual Tests						
Dry Matter	g/100g as rcvd	67	-	-	66	67
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	6	6	7	14
Total Recoverable Cadmium	mg/kg dry wt	0.57	0.57	0.68	0.61	0.80
Total Recoverable Chromium	mg/kg dry wt	38	31	51	57	64
Total Recoverable Copper	mg/kg dry wt	90	72	60	70	69
Total Recoverable Lead	mg/kg dry wt	18.3	12.5	19.7	16.6	14.8
Total Recoverable Mercury	mg/kg dry wt	0.21	0.26	0.22	0.20	0.21
Total Recoverable Nickel	mg/kg dry wt	7	9	9	9	9
Total Recoverable Zinc	mg/kg dry wt	50	48	74	57	100
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
alpha-BHC	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
beta-BHC	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
delta-BHC	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
gamma-BHC (Lindane)	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
cis-Chlordane	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
trans-Chlordane	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
2,4'-DDD	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
4,4'-DDD	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
2,4'-DDE	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
4,4'-DDE	mg/kg dry wt	0.035	-	-	0.024	0.015
2,4'-DDT	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
4,4'-DDT	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Total DDT Isomers	mg/kg dry wt	< 0.09	-	-	< 0.09	< 0.09
Dieldrin	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endosulfan I	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endosulfan II	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endosulfan sulphate	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endrin	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endrin aldehyde	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Endrin ketone	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Heptachlor	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Heptachlor epoxide	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Hexachlorobenzene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Methoxychlor	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015

Sample Type: Soil						
Sample Name:		S01 28-May-2025	S02 28-May-2025	S03 28-May-2025	S04 28-May-2025	S05 28-May-2025
Lab Number:		3903577.1	3903577.2	3903577.3	3903577.4	3903577.5
Polycyclic Aromatic Hydrocarbons Screening in Soil*						
Total of Reported PAHs in Soil	mg/kg dry wt	< 0.4	-	-	< 0.4	< 0.4
1-Methylnaphthalene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
2-Methylnaphthalene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Acenaphthylene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Acenaphthene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Anthracene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[a]anthracene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	< 0.036	-	-	< 0.035	< 0.036
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	< 0.035	-	-	< 0.035	< 0.036
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[e]pyrene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Benzo[k]fluoranthene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Chrysene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Fluoranthene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Fluorene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Naphthalene	mg/kg dry wt	< 0.08	-	-	< 0.08	< 0.08
Perylene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Phenanthrene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015
Pyrene	mg/kg dry wt	< 0.015	-	-	< 0.015	< 0.015

Sample Name:		S06 28-May-2025	S07 28-May-2025	S08 28-May-2025	S09 28-May-2025	S10 28-May-2025
Lab Number:		3903577.6	3903577.7	3903577.8	3903577.9	3903577.10
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	67	-	-
Heavy Metals with Mercury, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	6	6	6	9	4
Total Recoverable Cadmium	mg/kg dry wt	0.44	0.43	0.52	0.60	0.20
Total Recoverable Chromium	mg/kg dry wt	37	38	40	45	27
Total Recoverable Copper	mg/kg dry wt	46	74	53	98	32
Total Recoverable Lead	mg/kg dry wt	15.4	14.2	15.7	24	10.6
Total Recoverable Mercury	mg/kg dry wt	0.22	0.22	0.31	0.24	0.22
Total Recoverable Nickel	mg/kg dry wt	6	6	7	9	7
Total Recoverable Zinc	mg/kg dry wt	45	43	55	102	31
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	-	< 0.015	-	-
alpha-BHC	mg/kg dry wt	-	-	< 0.015	-	-
beta-BHC	mg/kg dry wt	-	-	< 0.015	-	-
delta-BHC	mg/kg dry wt	-	-	< 0.015	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.015	-	-
cis-Chlordane	mg/kg dry wt	-	-	< 0.015	-	-
trans-Chlordane	mg/kg dry wt	-	-	< 0.015	-	-
2,4'-DDD	mg/kg dry wt	-	-	< 0.015	-	-
4,4'-DDD	mg/kg dry wt	-	-	< 0.015	-	-
2,4'-DDE	mg/kg dry wt	-	-	< 0.015	-	-
4,4'-DDE	mg/kg dry wt	-	-	< 0.015	-	-
2,4'-DDT	mg/kg dry wt	-	-	< 0.015	-	-
4,4'-DDT	mg/kg dry wt	-	-	< 0.015	-	-
Total DDT Isomers	mg/kg dry wt	-	-	< 0.09	-	-
Dieldrin	mg/kg dry wt	-	-	< 0.015	-	-
Endosulfan I	mg/kg dry wt	-	-	< 0.015	-	-

Sample Type: Soil						
Sample Name:		S06 28-May-2025	S07 28-May-2025	S08 28-May-2025	S09 28-May-2025	S10 28-May-2025
Lab Number:		3903577.6	3903577.7	3903577.8	3903577.9	3903577.10
Organochlorine Pesticides Screening in Soil						
Endosulfan II	mg/kg dry wt	-	-	< 0.015	-	-
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.015	-	-
Endrin	mg/kg dry wt	-	-	< 0.015	-	-
Endrin aldehyde	mg/kg dry wt	-	-	< 0.015	-	-
Endrin ketone	mg/kg dry wt	-	-	< 0.015	-	-
Heptachlor	mg/kg dry wt	-	-	< 0.015	-	-
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.015	-	-
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.015	-	-
Methoxychlor	mg/kg dry wt	-	-	< 0.015	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil*						
Total of Reported PAHs in Soil	mg/kg dry wt	-	-	< 0.4	-	-
1-Methylnaphthalene	mg/kg dry wt	-	-	< 0.015	-	-
2-Methylnaphthalene	mg/kg dry wt	-	-	< 0.015	-	-
Acenaphthylene	mg/kg dry wt	-	-	< 0.015	-	-
Acenaphthene	mg/kg dry wt	-	-	< 0.015	-	-
Anthracene	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[a]anthracene	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	-	-	< 0.035	-	-
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	< 0.035	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[e]pyrene	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	< 0.015	-	-
Benzo[k]fluoranthene	mg/kg dry wt	-	-	< 0.015	-	-
Chrysene	mg/kg dry wt	-	-	< 0.015	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	< 0.015	-	-
Fluoranthene	mg/kg dry wt	-	-	< 0.015	-	-
Fluorene	mg/kg dry wt	-	-	< 0.015	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	< 0.015	-	-
Naphthalene	mg/kg dry wt	-	-	< 0.08	-	-
Perylene	mg/kg dry wt	-	-	< 0.015	-	-
Phenanthrene	mg/kg dry wt	-	-	< 0.015	-	-
Pyrene	mg/kg dry wt	-	-	< 0.015	-	-

Sample Name:		QC01 28-May-2025
Lab Number:		3903577.11
Heavy Metals with Mercury, Screen Level		
Total Recoverable Arsenic	mg/kg dry wt	6
Total Recoverable Cadmium	mg/kg dry wt	0.38
Total Recoverable Chromium	mg/kg dry wt	36
Total Recoverable Copper	mg/kg dry wt	44
Total Recoverable Lead	mg/kg dry wt	15.1
Total Recoverable Mercury	mg/kg dry wt	0.21
Total Recoverable Nickel	mg/kg dry wt	7
Total Recoverable Zinc	mg/kg dry wt	44

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	1-11
Total of Reported PAHs in Soil	Sonication extraction, GC-MS/MS analysis. In-house based on US EPA 8270.	0.03 mg/kg dry wt	1, 4-5, 8
Heavy Metals with Mercury, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	1-11
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	1, 4-5, 8
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, GC-MS/MS analysis. Tested on as received sample. In-house based on US EPA 8270.	0.010 - 0.05 mg/kg dry wt	1, 4-5, 8
Dry Matter	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	1, 4-5, 8
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	BaP Potency Equivalence calculated from; Benzo(a)anthracene x 0.1 + Benzo(b)fluoranthene x 0.1 + Benzo(j)fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Benzo(a)pyrene x 1.0 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Fluoranthene x 0.01 + Indeno(1,2,3-c,d)pyrene x 0.1. Ministry for the Environment. 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Wellington: Ministry for the Environment.	0.024 mg/kg dry wt	1, 4-5, 8
Benzo[a]pyrene Toxic Equivalence (TEF)*	Benzo[a]pyrene Toxic Equivalence (TEF) calculated from; Benzo[a]pyrene x 1.0 + Benzo(a)anthracene x 0.1 + Benzo(b) fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Indeno(1,2,3-c,d)pyrene x 0.1. Guidelines for assessing and managing contaminated gasworks sites in New Zealand (GMG) (MfE, 1997).	0.024 mg/kg dry wt	1, 4-5, 8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 30-May-2025 and 04-Jun-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

Martin Cowell - BSc
Client Services Manager - Environmental

geologix
consulting engineers

STATEMENT OF QUALIFICATION

I Edward John Collings of Geologix Consulting Engineers Ltd certify that:

1. This combined Preliminary and Detailed Site Investigation meets the requirements of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the NES:CS) because it has been:

    a. Prepared and certified by a suitably qualified and experienced practitioner registered under the Certified Environmental Practitioner Scheme (Registration Number 0861) and Engineering New Zealand Chartered Professional Engineer (Registration Number 1033153).

    b. The SQEP has over 16 years post graduate experiencing practicing as an environmental consultant with a tertiary education qualification equivalent to a Master of Science with supporting evidence from Engineering New Zealand that the Consultant has equivalent knowledge to Washington Accord equivalence.

    c. Reported on in accordance with the current edition of Contaminated Land Management Guidelines No. 1 – Reporting on contaminated sites in New Zealand, 2021.

2. This investigation concludes that:

    a. For subdivision and soil disturbance activities under Regulation 9 of the NES:CS the soil contamination does not exceed the applicable standard in Regulation 7 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations.

Evidence of qualifications and experience of the suitably qualified and experienced practitioner is available below.

Signed: 

Dated: 11 June 2025

Role	Name	Relevant Experience
Project Manager	**Ray Mayor** Unitec New Zealand, 2010, Bachelor of Engineering (Environmental) Unitec New Zealand, 2007, Diploma in Environmental Technology	Ray is a Senior Environmental Consultant with more than 15 years' experience on contaminated sites. His project experience includes conducting site assessments, compliance monitoring, managing environmental risk and remediation across numerous sites including residential, industrial and commercial developments as well as New Zealand Defence Force sites.
Senior Technical Reviewer	**Edward Collings** MPhys (Hons) Physical Geography Certified Environmental Practitioner Chartered Professional Engineer	Edward is a Principal Engineer and Managing Director with more than 16 years' experience on geotechnical design and contaminated land remediation on a variety of residential, commercial and critical infrastructure projects in the UK and New Zealand. Edward attained recognition as a Certified Environmental Practitioner in 2016 in Australia and New Zealand with specialist knowledge in contaminated land and groundwater remediation and wastewater design. In recent years Edward has provided professional engineering assessments for prospective candidates to the scheme.