

**Consents Hearing**  
16 January 2016

**Schrader Mains Limited—  
APP-20158099**

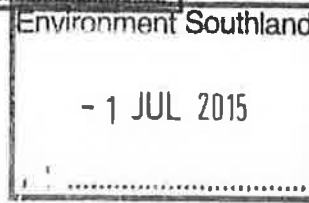
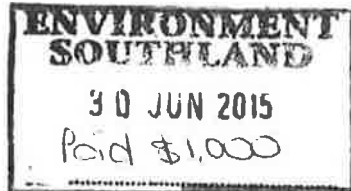
**Appendices**

# **Application**

30 June 2015

Environment Southland  
Private Bag 90116  
Invercargill 9348

Attn: Hilary Lennox



**LANDPRO**  
Make the most of your land

Dear Hilary,

**RE: New Dairy Conversion and Associated Activities – Schrader Mains Limited**

Please find enclosed an application on behalf of Schrader Mains Limited to convert their property at 514 Rimu-Seaward Downs Road, Waitunam to dairying. The applicant wishes to apply for resource consent to discharge effluent to land from 306 cows, abstract groundwater for shed and stock water purposes, construct an inground effluent storage pond and construct a new groundwater bore.

The assessment of effects found that the effects on the surrounding environment are considered to be less than minor.

Schrader Mains Limited have paid the processing fee of \$1000 directly into Environment Southland's bank account.

If you have any questions regarding the subject application please do not hesitate to contact me on (03) 445 9905.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Rebecca Gibson'. The signature is fluid and cursive.

Rebecca Gibson  
Resource Management Planner

**Cromwell**  
Unit 7, Cromtrade, 2 McMully Road  
PO Box 302, Cromwell 9342, New Zealand

**Gore**  
23 Medway Street  
Gore 9710, New Zealand

**0800 023 318**  
info@landpro.co.nz  
www.landpro.co.nz



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Business Excellence  
Award 2013

# Application for Resource Consent (PART A)

This application is made under Section 88 of the Resource Management Act 1991



To: Environment Southland  
Private Bag 90116  
Invercargill 9840

## Full name, address and contact details of applicant (in whose name consent is to be issued)

Name: Schrader Mains Limited

Address: 514 Rimu-Seaward Dows Road, RD1, Invercargill

Email: schrader@woosh.co.nz

Phone: (03 ) 239 5528 (027) 4080962 Fax: ( ) \_\_\_\_\_  
*Preferred Additional*

## Consultant/contact details (if different from above)

Contact Name/ Agent: Landpro Limited - Rebecca Gibson

Address: PO Box 302, Cromwell

Email: rebecca@landpro.co.nz

## Existing consents

Are there any current or expired consents relating to this proposal? Yes X No

If yes, please provide consent number and description:

Please tick the box for the consent(s) you are applying for:

### Land use

- Convert land to dairying
- Effluent pond construction
- Tree planting
- Gravel extraction
- Burning
- Riverbed activity (incl streams/creeks & stopbanks)
- Bridges and culverts

### Discharge

- To air
  - To water
  - To land
- ### Water
- Take & use surface water
  - Take & use groundwater
  - Dam water
  - Divert water

### Coastal

- Structures/occupy
- Reclaim/drain
- Commercial surface water activity
- Marine farming
- Remove natural materials
- Discharge/deposit substances
- Disturb foreshore/seabed

1. For what **purpose** is this consent(s) required: (e.g. discharge of effluent, gravel extraction etc.)

Convert land to dairying, construct an inground effluent storage pond, discharge dairy effluent to land, abstract groundwater for shed and stock water purposes and construct a groundwater bore

2. Are any there consents required from **other authorities**? Yes  No

If yes, please state the relevant authority and the type of consent(s) required:

\_\_\_\_\_

3. **Location** of proposed activity

Address: 514 Rimu-Seaward Downs Road, Invercargill

Legal Description: Section 7, Section 49, Block II Oteramika Hundred, Lot 1 Deposited Plan 12478, and Part Section 5 - 6 Block II Oteramika Hundred

Map Reference (NZTM 2000): \_\_\_\_\_ E \_\_\_\_\_ N

4. The name and address of the **owner / occupier**: (if other than the applicant)

Name: Schrader Mains Limited Phone: (03) 239 5528

Address: 514 Rimu-Seaward Downs Road, Invercargill

5. **Assessment of effects on the environment (AEE)**

Please attach a written statement that assesses the effects that your activity may have on the environment. It **must** include the following:

- (a) a description of actual or potential effects on:
  - (i) natural and physical resources;
  - (ii) ecosystems, including effects on plants, animals, and their associated habitats;
  - (iii) neighbours and the wider community, including any social, economic and cultural effects;
- (b) if the activity includes the discharge of any substance, a description of:
  - (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
  - (ii) any possible alternative methods of discharge;
- (c) mitigation/preventative measures proposed to help prevent or reduce the actual or potential effects;
- (d) a description of monitoring that will be undertaken;
- (e) possible alternative locations or methods for undertaking the activity, especially if it is likely that the activity may result in a significant adverse effect on the environment or on the exercise of a protected customary right;
- (f) identification of any persons affected by the activity and whether any consultation has been undertaken. You should include any written approvals received with your application.

Your AEE must be written in sufficient detail relative to the size, scale, and nature of the activity and its potential effects. Failure to provide an adequate AEE may result in Council returning your application.

**6. Potentially Affected Parties**

Please attach written approval from parties who may be potentially affected by your activity. *Written Approval of a Potentially Affected Parties* forms are available on the Environment Southland website. During the processing of your application, Council may determine that additional approvals are required.

**Checklist: Have you included the following?**

- Payment of the required standard fee or deposit (*see attached fee schedule*)
- Written approval from all potentially affected parties (*forms available from the Environment Southland website*)
- An assessment of environmental effects (AEE)
- Site plan/location map/sketch of the proposed activity
- A copy of the Certificate of Incorporation (*where applicant is a company*)
- Part B form(s) specific to your activity

*Notes*


- (a) *If your application does not contain the necessary information and the appropriate fee, Environment Southland must return application.*
- (b) *If these forms have insufficient space, please attach additional pages, including plans, as necessary.*
- (c) *Please note that Council cannot accept electronic lodgement of applications at this time.*

**Signature of applicant**

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

*I undertake to pay all actual and reasonable application processing costs incurred by Environment Southland.*

Name (block capitals) REBECCA GIBSON

Signed   
(Signature of applicant or person authorised to sign on behalf of applicant)

Date 30/06/15



**environment  
SOUTHLAND**

Cnr North Road and Price Street  
(Private Bag 90116)  
Invercargill

Telephone (03) 211 5115  
Fax No. (03) 211 5252

## Application for Resource Consent

This application is made under Section 88 of the Resource Management Act 1991

To: The General Manager  
Environment Southland  
Private Bag 90116  
Invercargill

### For Office Use Only

Received:

Application No:

Job No:

Officer in Charge:

### Full name, address and contact details of applicant *(In whose name consent is to be issued)*

Applicant	Schrader Mains Limited		
Address	514 Rimu-Seaward Downs, RD1, Invercargill		
	E-mail	schrader@woosh.co.nz	
Telephone No:	(03) 239 5528	( )	Fax: ( )
	<i>Private</i>	<i>Business</i>	
Signed			Date 30/06/15
	<i>(Signature of applicant or person authorised to sign on behalf of applicant)</i>		

### Address for Service of Applicant *(if different from above e.g. consultants)*

Contact Name/ Agent	Landpro Limited - Rebecca Gibson		
Address	PO Box 302, Cromwell		
	E-mail	rebecca@landpro.co.nz	
Telephone No:	( )	(03) 445 9905	Fax: ( )
	<i>Private</i>	<i>Business</i>	

### NOTES TO APPLICANTS

- The appropriate fee set out in the attached schedule must accompany your application. If, when your application has been processed, the actual costs incurred by Environment Southland are different from the amount paid, you will be invoiced or refunded the balance.
- If your application does not contain the necessary basic information and the appropriate fee, Environment Southland may return the application to you. Processing will not commence until a complete application is lodged.
- Section 128 of the Resource Management Act 1991 sets out the circumstances in which a consent authority may review the conditions of a resource consent. Under S128 (1)(c) Environment Southland may undertake a review if the application contains inaccuracies, which may materially have influenced the decision made.

1. This resource consent application is to:  
 construct a new bore or well                       modify an existing bore or well
2. Proposed method of construction:  
 rotary drilling                       cable tool drilling                       excavation
3. Purpose for which water is to be taken/used:  
 Irrigation                       Municipal supply                       Dairy  
 Industry                       Stockwater                       Household/Domestic  
 Groundwater quality monitoring                       Other:.....

4. Is the proposed bore or well within:
- |   | Yes                      | No                                  |
|---|--------------------------|-------------------------------------|
| 50 metres of a septic tank outfall                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 150 metres of a lake or stream                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 150 metres of an existing bore or well            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 100 metres of mean high water springs (coastline) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If 'yes' to any of the above, please provide further details in an attachment to this form

5. Please provide the following details:  
 Well depth                                TBC           m                      Well diameter                                TBC           mm  
 Proposed date to start construction:                                ASAP            
 Name of driller:                                McNeills            
 Phone number of driller/contact person:

6. **Location** – the location to which the application relates is:

*Please supply a farm map locating the proposed bore location*

Number or name of house/street/road	514 Rimu-Seaward Downs Road	Nearest locality (e.g. settlement)	Waituna
Nearest town	Invercargill	Map Reference (NZMS 260 Series)	
Legal Description	Section 7, Section 49, Block II Oteramika Hundred, Lot 1 Deposited Plan 12478 a1 Part Section 5 - 6 Block II Oteramika Hundred		
District or City Council the property is located in	Southland District Council		

***If you propose to carry out a pump test, a water permit is required if the volume to be extracted exceeds 20,000 litres/day. Please complete the information required on the following page.***



7. Description of pump and/or aquifer test:

Bore is to be constructed to be used for the purpose of groundwater abstraction for shed and stock water

8. Test details: Maximum pumping rate:   TBC   litres/second  
Duration of pump test:   TBC   hours

9. Location of pump test if the land use consent authorises the construction of more than one bore:

Bore number (if known):   TBC    
Easting:   TBC    
Northing:   TBC  

10. Proximity to: Nearest bore not on this property: \_\_\_\_\_ metres  
Nearest surface watercourse: \_\_\_\_\_ metres  
Coastal water: \_\_\_\_\_ metres

**IMPORTANT:** *Environment Southland has a factsheet for more information on carrying out pump tests on bores and aquifers. However, when planning to carry out a test, the following points should be noted:*

- 1. if the test is to support a future application for a water permit, you should ensure that the scale of the test is sufficient to support the rate of take proposed;*
- 2. the test should not be carried out when other pumping activity may influence the outcome of the test; and*
- 3. If the test exceeds 2 litres/second, an assessment of potential effects on neighbouring wells and waterways, and the overall allocation from the aquifer. A technical review of the information may be required by Environment Southland.*
- 4. Because of the technical nature of the assessment, the processing charge is likely to be greater for large pump tests than for a simple bore consent.*



**environment  
SOUTHLAND**

Cnr North Road and Price Street  
(Private Bag 90116)  
Invercargill

Telephone (03) 211 5115  
Fax No. (03) 2115252  
Southland Freephone No. 0800 76 88 45

**Application Form  
Disposal of Effluent to Land & Storage pond**

*If you require more room for your application details, please use a separate sheet of paper.*

1. Maximum herd size: 306 cows  
*Note: The consent would be granted for a maximum of ten years, so allow for the maximum herd size over this period so that changes to the conditions can be avoided.*
2. Factory supply number (if known) \_\_\_\_\_
3. Estimate of water usage and volume of effluent: 50 litres/day  
*Note: This is generally about 50 litres/day/cow in the dairy shed.*
4. Period of the year when effluent will be discharged: 12 months
5. Milking frequency once/twice per day X
6. Winter milking Yes/No X  
(a) Number of cows to be milked in winter \_\_\_\_\_ cows
7. Feed pad/Wintering pad XYes/No  
(a) Number of cows on Feed pad/Wintering pad \_\_\_\_\_ cows  
(b) Is Feed pad/Wintering pad roofed? Yes/No X  
(c) Is it mechanically swept? Yes/No  
(d) If it's washed down, amount of water used \_\_\_\_\_ litres/day  
(e) Time spent in area \_\_\_\_\_
8. Area of land available for effluent disposal: 93 hectares
9. Total Land Area: 110 hectares  
(include leased property that will be used as part of this application).
10. Stocking Rate: 2.97 cows/hectare
11. Milking will commence on or around 1st August within the next 5 years (New conversions only)
12. Spelling period for each paddock after irrigation \_\_\_\_\_ days

13. Effluent collection and storage details:  
Refer to Section 3.4 of attached report
- 
- 
- 
- 
14. Effluent storage capacity (based on 50 litres/cow/day): 60 days  
*Note: Refer to section 5 of the information required sheet.*
15. Agricultural Effluent Ponds details
- (i) Please attach plans, including a site plan, of any treatment system used and the storage pond.
- (ii) What is the pond liner? (eg. Synthetic, clay...) Synthetic
- (iii) Who has designed the pond? RDAgritech
- (iv) Who will supervise the pond construction? RDAgritech
- (v) Who will construct/install the pond? TBC
- (vi) What is the distance between the pond and: Dwelling Approx 500m  
Stream/watercourse Approx 150m  
Property boundary Approx 400m
- (vi) Is the pond to be constructed in accordance with the Environment Southland Code of Practice for Design and Construction of Agricultural Effluent Ponds?  
X Yes/No
- (vii) If not, what changes are to be made and why? Any departure from the Code of Practice must be approved through the consent process<sup>2</sup>. (See note below)
- 
- 
- 
- 
- (viii) Please note that upon completion of the pond installation, you will be required to provide a certificate from those involved with the pond design and construction that it has been done in accordance with Environment Southland Code of Practice for Design and Construction of Agricultural Effluent Ponds or as otherwise approved by Environment Southland.
16. Effluent irrigation method:  
Low rate Larrel Smart Hydrant System
- 
- 
- Note: Refer to section 6 of the information required sheet.*

<sup>2</sup> The ES code of practice for design and construction of agricultural effluent ponds can be accessed through [www.es.govt.nz](http://www.es.govt.nz) or at the Council.

17. Alternative methods of discharge that were considered:

- K-line irrigation
- Slurry tanker
- Travelling irrigator
- Other (*specify:* \_\_\_\_\_)

Reasons for choice of proposed discharge method:

- Less adverse effect on the environment than alternatives
- Consistent with Council policies, guidelines or advice
- Less capital cost than alternatives
- Less operational costs, including labour and monitoring
- Reliability/ simplicity of system
- Other (*specify:* \_\_\_\_\_)

18. Reasons for choice of proposed effluent area – were other areas considered?

Consideration of sensitive areas and topography of land  
 \_\_\_\_\_  
 \_\_\_\_\_

19. Has the effluent discharge rate been checked:

- No
- No, but information provided by irrigator supplier
- Yes

20. Minimum achievable effluent application rate 2 mm/hour

21. Effluent depth 20 mm applied in a single pass or irrigation period at minimum application rate

22. Effluent treatment details:

Refer to Section 3.4.1 of attached resource consent application  
 \_\_\_\_\_  
*Note: Refer to section 7 of the information required sheet.*

23. Maintenance details:

Visual inspection, automatic cut-off, deferred effluent storage  
 \_\_\_\_\_  
 \_\_\_\_\_  
*Note: Refer to section 8 of the information required sheet.*

24. Contingency plan:

Mechanical Breakdown (eg. Pump breakdown):  
sufficient inground storage  
 \_\_\_\_\_

Wet Weather (ability to store effluent):

deferred storage  
 \_\_\_\_\_

25. Soil Type(s):

Dacre and Woodlands  
 \_\_\_\_\_  
 \_\_\_\_\_

***Please supply a farm map locating the proposed effluent disposal area, bore locations, tile drains and other matters listed in Section 11 of the required information sheet.***

# Land Use Consent - Questions

- to carry out works in beds or margins of watercourses or lakes.

## Please answer the following questions

1. The activity this application relates to is:
- Use, erect, reconstruct, place, alter, extend, remove or demolish any structure e.g. bridges, culverts, dams
  - Excavate, drill, tunnel or otherwise disturb the bed e.g. works for diverting water.
  - Tree planting within 20 metres of a watercourse
  - Deposit any substance e.g. rock, stockpiling
  - Reclaiming or draining the bed
  - Removal or disturbance of vegetation e.g. willow clearing
  - Disturbance to watercourse e.g. vehicle crossing a watercourse
  - Floodbank works
  - Gravel Extraction

*Note: For gravel extractions you will need to contact Environment Southland's Catchment Division before you submit your resource consent application. The Catchment Division will fill out a Gravel Evaluation Form for you to include as part of your consent application. This gravel evaluation form is important to the process and your application likely to be incomplete without it.*

Other activities – specify below

Construct an inground effluent storage pond

2. What is the Name (if known) of the watercourse or lake on which the works will take place?

n/a

3. Describe how the works will be carried out:

Note: For structures, include engineering or structural details. (eg. for bridges or culverts engineering diagrams indicating the position of the crossing and the positions of groynes, gabions, and abutments).

Construct an inground effluent storage pond for effluent

To be completed within 5 years of granting of consent

4. Period of activity:

Proposed date of commencement:

/ /

Proposed date of completion:

/ /

Alternative Locations or

**Methods** – are there alternative locations or methods for carrying out the work?

Yes

No

a. If yes, where and how?

b. Why have you chosen this location or method over others?

To be located within the vicinity of the milking shed

5. **Potential effects** – describe how the construction activity may affect the watercourse or lake and what measure will be taken to avoid or mitigate effects.

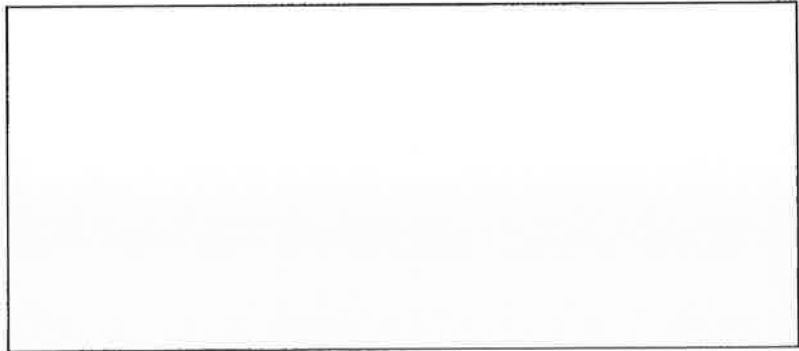
e.g. potential for wet cement to enter a watercourse.  
- mitigated through the use of tarpaulins under the structure to stop cement entering water.

Refer to Section 5.5 of attached resource consent application

6. **Surrounding environment**  
- within a reasonable distance of the works, are there any:

		Yes	No
a.	obvious signs of instream life? (e.g. fish, eels, bullies, crayfish)	n/a <input type="checkbox"/>	<input type="checkbox"/>
b.	areas where food is gathered from watercourses? (e.g. watercress, eels, wildfowl)	n/a <input type="checkbox"/>	<input type="checkbox"/>
c.	significant wetlands, or bird nesting habitats? (e.g. swamp areas)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d.	recreational activities carried out? (e.g. fishing swimming)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e.	areas of particular aesthetic or scientific value? (e.g. archaeological sites, rapids)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f.	Marginal strips?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g.	Will the proposed activity increase the risk of subsidence, erosion, inundation or flooding?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

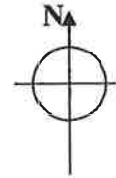
7. **Adverse effects** – if you have answered yes to any of 6a. – g., describe what adverse effects your proposal might have on these and the steps you propose to take to mitigate the effects.



8. **Location Plan** – Draw a map showing the location of the proposed activity

**Draw a map of location showing:**

- Roads and property boundaries
- Buildings
- Rivers, streams creeks, drains
- Wetlands and other wildlife habitats
- Location of proposed works
- Location of neighbouring properties



Please see Appendix A of the resource consent application attached

# Application to Take and Use Groundwater

This application is made under Section 88 of the Resource Management Act 1991



**environment  
SOUTHLAND**  
*Te Taiaro Tonga*

To: Environment Southland  
Private Bag 90116  
Invercargill 9840

**1. What is this application for?**

a new groundwater take       a renewal of existing consent number: \_\_\_\_\_

**2. For what purpose(s) will the water be used?**

Stock water and/or dairy shed use     Irrigation     Community supply     Commercial/industrial

Other

*If other, please describe:* \_\_\_\_\_

**3. Do you have an existing bore?**

To use an existing bore with a new bore  
 Yes       No

*If you answered no to this question, you will need to apply for a consent to construct a bore before you apply to take groundwater.*

**4. Please state the GPS co-ordinates of your existing or proposed bore. Additionally, if your bore is existing please state the bore number:**

Locations are to be confirmed - will be located within the boundaries of the property  
Bore 1    NZTM 2000    \_\_\_\_\_E    \_\_\_\_\_N    Bore number: \_\_\_\_\_

Bore 2    NZTM 2000    \_\_\_\_\_E    \_\_\_\_\_N    Bore number: \_\_\_\_\_

**5. Please state the depth, diameter, pump size, and capacity of your bore (or proposed bore) you will use to take the proposed groundwater**

	Bore depth (m)	Screen depth (m)	Diameter (mm)	Pump type	Pump capacity(l/s)
Bore 1	TBC				
Bore 2	TBC				



6. How much water do you propose to take and at what rate will it be taken?

Maximum rate of take less than 2 litres per second  
Maximum daily volume 36.72 cubic metres per day  
Maximum weekly volume 257.04 cubic metres per week  
Maximum monthly volume \_\_\_\_\_ cubic metres per month  
Maximum annual volume \_\_\_\_\_ cubic metres per year

7. What is the frequency of the proposed water take?

	<i>Average</i>	<i>Maximum</i>
How many hours per day?	<u>n/a</u>	<u>n/a</u>
How many days per week?	_____	_____
How many weeks per month?	_____	_____

8. Please state the name of the aquifer that you propose to take water from?

Waihopai Groundwater Zone

9. Do you intend to store your water before subsequent use? no

If yes, how much storage will be available? \_\_\_\_\_ m<sup>3</sup>

*Please note you may need a building permit and/or additional resource consents for the construction of a dam or weir.*

10. What type of water metering system is installed or proposed to be installed

Water meter       Data logger       Telemetry

11. If you propose to use water for stock and/or dairy shed use – please answer the following:

a) What type of animal and numbers of stock will be supplied with water for drinking?

Sheep      Number: \_\_\_\_\_ Water required: \_\_\_\_\_ litres/head/day  
 Beef cattle      Number: \_\_\_\_\_ Water required: \_\_\_\_\_ litres/head/day  
 Dairy cows      Number: 306 Water required: 120 litres/head/day  
 Other      Number: \_\_\_\_\_ Water required: \_\_\_\_\_ litres/head/day

b) How much water do you require for your dairy shed? 50 litres/head/day

**12. If you propose to use water to irrigate land – please answer the following:**

- a) How many hectares of land will be irrigated? \_\_\_\_\_
- b) What is the soil type(s) of the land being irrigated? \_\_\_\_\_
- c) What will you be irrigating? (i.e. crop, pasture etc.)? \_\_\_\_\_
- d) What type of irrigation system will be used? \_\_\_\_\_
- e) What is the target (net) application rate? \_\_\_\_\_
- f) How have you calculated the amount of water you need? (attach separate pages if required)  
\_\_\_\_\_

**13. If you propose to use water for industrial use – please answer the following:**

- a) What type of industry will be using the water and how will the water be used?  
\_\_\_\_\_
- b) How have you calculated the amount of water you need? (attach separate pages if required)  
\_\_\_\_\_

**14. If you propose to use water for community supply – please answer the following:**

- a) What type of establishment will use the water?
  - Households – number of households to be supplied: \_\_\_\_\_
  - Camping grounds – maximum number of visitors and staff per year: \_\_\_\_\_
  - Schools – maximum number of students and staff per year: \_\_\_\_\_
  - Motel units – number and expected occupancy: \_\_\_\_\_
  - Other: \_\_\_\_\_
- b) How have you calculated the amount of water you need? (attach separate pages if required)  
\_\_\_\_\_

**15. If you propose to use water for any other purpose – please attach a separate sheet to this application form describing the amount of water you will need and how this has been calculated.**

**16. Does your proposed water take have any associated wastewater discharges?**

- Yes                       No

*If yes, you may need to apply for a discharge to water resource consent.*

17. Will your groundwater take have any effects on the following :

	Yes	No
Aquifer storage volumes	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Existing bore or well yields	<input type="checkbox"/>	<input checked="" type="checkbox"/>
River and stream flows, including minimum flows and allocation levels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland and lake water levels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Groundwater quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*If you answered yes to any of the options in question 18, please describe how these effects may occur as a result of your water take and outline any steps that you will take to mitigate these effects:*

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18. Appendix A of the Regional Water Plan for Southland 2010 details the level of further assessment required as part of your application. This may include the following assessments (please attach as a separate report):

- Interference effects/drawdown
- Radius of influence
- Stream depletion effects
- An assessment of the dynamic aquifer response to abstraction

19. Please describe any alternative options for the locations and/or methods for your water take:

The applicant could abstract surface water from the stream that flows through the property

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20. Why did you choose your proposed location and/or method of water take over alternative options:

There is an existing bore on the property and need a bore close to the milking shed.

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**21. Please attach a map or a coloured aerial photograph showing the following details:**

- The location(s) of points of take
- The location of water measuring device(s)
- The total property area boundary
- The area(s) to be irrigated (if relevant)
- The area(s) of community supply (if relevant)
- Distances to any discharge activities
- Other surface water bodies and wetlands nearby and the distance from the point of take(s) to them
- The coastline and the distance to it (if relevant)
- The location of any dairy sheds

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Invercargill

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## Resource Consent Application Schedule 4 Checklist

### 1. Information must be specified in sufficient detail

Any information required by this schedule, including an assessment under clause 2(1)(f) or (g), must be specified in sufficient detail to satisfy the purpose for which it is required.

### 2. Information required in all applications

1. An application for a resource consent for an activity (the activity) must include the following:

	Checklist	Yes	N/A	Report Section	Comments
a)	A description of the activity	✓		AEE Report	
b)	A description of the site at which the activity is to occur	✓		AEE Report	
c)	The full name and address of each owner of occupier of the site	✓		AEE Report	
d)	A description of any other activities that are part of the proposal to which the application relates		✓		
e)	A description of any other resource consents required for the proposal to which the application relates		✓		
f)	An assessment of the activity against the matters set out in Part 2	✓		G.1	
g)	An assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b)	✓		G.1	

2. The assessment under subclause (1)(g) must include an assessment of the activity against:

	Checklist	Yes	N/A	Report Section	Comments
a)	Any relevant objectives, policies, or rules in a document; and	✓		G.1	
b)	Any relevant requirements, conditions, or permissions in any rules in a document; and	✓		G.1	
c)	Any other relevant requirements in a document (for example, in a national environmental standard or other regulations.	✓		G.1	

### 3. Additional information required in some applications

An application must also include any of the following that apply:

	Checklist	Yes	N/A	Report Section	Comments
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):		✓		
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)):		✓		

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)).		✓		
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#### 4. Additional information required in an application for subdivision consent

An application for a subdivision consent must also include information that adequately defines the following:

	Checklist	Yes	N/A	Report Section	Comments
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.				

## 5. Additional information required in application for reclamation

An application for a resource consent for reclamation must also include information to show the area to be reclaimed, including the following:

	Checklist	Yes	N/A	Report Section	Comments
a)	The location of the area:				
b)	If practicable, the position of all new boundaries:				
c)	Any part of the area to be set aside as an esplanade reserve or esplanade strip.				

## 6. Information required in assessment of environmental effects

1. An assessment of the activity's effects on the environment must include the following information:

	Checklist	Yes	N/A	Report Section	Comments
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:		✓		
b)	An assessment of the actual or potential effect on the environment of the activity:	✓			Tech reports
c)	If the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment that are likely to arise from such use:		✓		
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 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:	✓			Technical reports.
f)	Identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:	✓			Attachment F
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:	✓			monitoring by applicant.
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).		✓		

2. A requirement to include information in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

## 7. Matters that must be addressed by assessment of environment effects

1. An assessment of the activity's effects on the environment must address the following matters:

	Checklist	Yes	N/A	Report Section	Comments
a)	Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	✓			See attached!
b)	Any physical effect on the locality, including any landscape and visual effects:	✓			See attached!
c)	Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	✓			See attached!
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:	✓			See attached!
e)	Any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:	✓			See attached!
f)	Any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.	✓			See attached!

2. The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.



## 7. Matters that must be addressed by assessment of environment effects

1. An assessment of the activity's effects on the environment must address the following matters:

	Checklist	Yes	N/A	Report Section	Comments
a)	Any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:		✓		
b)	Any physical effect on the locality, including any landscape and visual effects:		✓		
c)	Any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:		✓		
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:		✓		
e)	Any discharge of contaminants into the environment, including any 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 the use of hazardous substances or hazardous installations.		✓		

2. The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

Clause 7 of Schedule 4 of the RMA contains additional matters to be addressed in an assessment of effects. These matters are assessed as follows.

- a) *any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:*

The effects of the proposal to convert the subject land to dairying is not considered to have an effect on the neighbourhood or those within the wider community.

The property is located within the Rural Resource Zone identified by the Southland District Plan therefore the occurrence of a dairy farm, and associated activities, in this rural environment appropriate to the locality. As part of this proposal the applicant wishes to take a conservative approach to ensure that the proposed change in land use does not impact on the surrounding environment due to the sensitivities of the Waituna Catchment. The effluent system that has been designed is in accordance with best practice which is likely to result in net positive benefits to the neighbourhood in terms of providing deferred storage and a new low rate application system which will help to mitigate any potential adverse effects on the wider community.

It is expected that there will be social and economic benefits of this activity as it will employ 1 – 2 people, and the farm will be serviced by local schools and businesses that would not benefit in the event that the activities were unable to continue. The dairy sector contributes greatly to the New Zealand economy in a number of ways including gross domestic productivity, employment, raising incomes, community growth and resilience and reinvestment capacity via tax revenues. The applicant will supply Fonterra which is the largest New Zealand resident firm producing the greatest global revenue of \$20 billion NZD in 2012<sup>[1]</sup>. The ability for the applicant to continue to operate their dairying operation will enable them to provide for their own social, economic and cultural wellbeing. However, as identified in the Schilling (2010)<sup>[2]</sup> report, the operation of the applicant's dairy operation will also contribute in many ways to local and national well-being originating from economic return from the production and export of milk solids.

In terms of the potential effects on cultural values Te Tangi a Tairua is the Iwi Environmental Management Plan applicable to the Southland Region. While the proposal is considered to be within the Southland Plains Area, it is the policies contained in the Southland Plains Section 3.5.1 which wholly addresses farm effluent management and which is most consistent with this proposal. Through the discharge of effluent to land, which is only applied to appropriate areas at appropriate times with regard to the suitability and capability of the receiving soil, and the incorporation of best management strategies, including the development of a better effluent system to that which is currently consented and exceeds best management guidelines, it can be concluded that the application addresses the Ngā Take or issues and compliments the policies of Section 3.5.1.

Sections 3.5.13 and 3.5.14 have regard to water quality and water quantity in the Southland Plains respectively. The application is considered consistent with the issues and policies of these sections,

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<sup>[1]</sup>Ministry of Business, Innovation and Employment. (2014). *New Zealand Sectors Report 2014*. Source: <http://www.mbie.govt.nz/what-we-do/business-growth-agenda/sectors-reports-series/pdf-document-library/nz-sectors-report.pdf>

<sup>[2]</sup> Schilling, C., Zuccollo, J., Nixon, C. (2010). *Dairy's role in sustaining New Zealand – the sector's contribution to the economy*. Report to Fonterra and Dairy NZ.

particularly policies 3.5.13.4, 3.5.13.6, 3.5.13.9, 3.5.14.6, 3.5.14.11, 3.5.14.16 and 3.5.14.17. Though this it is evident that this proposal will meet cultural aspirations associated with water quality and quantity.

*b) any physical effect on the locality, including any landscape and visual effects:*

The property is located at the northern end of the Waituna catchment which is known for its natural coastal lagoon. In terms of the physical effect on the landscape and visual effects, the nature of the change in land use to dairying will not have an effect as this is in keeping with the rural environment that it is situated within.

*c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:*

The discharge of effluent to land is the preferred method due to the benefits effluent, when discharged appropriately, can provide in terms of nutrient uptake available to pasture. Nutrients in effluent can be utilised by the pasture and soil.

The catchment which the property is situated within is considered to be sensitive. On the property there is one main waterway that flows diagonally through the property is an unnamed tributary of the Waituna Creek. The Waituna Creek flows directly into the Waituna Lagoon, which is considered to be in a degraded state. Nutrient losses from land uses within the catchment is having a negative effect on water quality of the Lagoon. The applicant's proposal to change the land use from a beef and dairy grazing block to dairy farming results in a reduction of nitrogen losses although an increase in phosphorus losses. This is discussed in the attached resource consent application Section 5.1 and technical report as Attachment D. The proposed mitigation methods and conservative approach that the applicant has chosen to undertake is considered to avoid adverse effects on 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:*

Under the Regional Water Plan, the Waimea stream and its un-named tributary is classified as a lowland soft bed waterbody. The values associated with this water body type as specified in the regional Water Plan (from Objective 3) for the Waituna Stream tributaries are specified below:

- bathing in those sites where bathing is popular;
- Trout where present, otherwise native fish;
- Stock drinking water;
- Ngāi Tahu cultural values, including mahinga kai;
- Natural character including aesthetics.

It is not considered that the activities will have any effect on aesthetic values, as this is not out of keeping with the general rural nature of the area. The Waituna catchment is historically known for farming activity, the establishment of the subject dairying operation on this property does not result in any effect contrary to the historical values associated with the natural and physical resources in the vicinity.

Bathing and fishing have been identified as recreational values associated with the tributaries of the Waituna Creek. The proposed water take is to be from a groundwater source and therefore reducing the effects on the volume of water within this waterbody. Furthermore, the applicant will be observing buffer zones from this waterway to ensure that effluent runoff directly into the waterway will not occur. Waterways have been fenced with approximately a 3m buffer from the waterway. This area has been planted by the applicant and will act as a filter to prevent nutrient losses to waterways. Additionally, effluent will be discharged in accordance with best practice and therefore preventing potential adverse effects of leaching and runoff. The effects associated with the proposed activities and recreational activities are considered to be less than minor.

Special regard has been given to spiritual values, such as mahinga kai, or any other spiritual values associated with the natural and physical resources in the vicinity. It is not considered the proposed activities will have an effect on these values.

The effects on any cultural values of the natural and physical resources of the property, and surrounding area, is assessed above in Section 5.7(a) of this document.

Overall, the proposed dairy conversion and associated activities are not expected to have an adverse effect on the natural and physical resources within this catchment.

- e) *any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:*

The discharge of contaminants in this case is in relation to the discharge of farm dairy effluent to land. Treatment of effluent is not proposed as part of this application, as it is unnecessary to the effluent disposal system, however a contingency plan of a deferred storage pond is proposed for day's when soils are unsuitable for the application of FDE. A new inground storage pond is proposed which has been designed by RDAgritech. This pond provides more than sufficient volume of storage for the proposed activity. Additionally, the applicant has a large disposal area which will spread nutrients over a greater area reducing potential leaching and runoff. The activity is in keeping with the rural nature of the area, therefore it is not considered there will be any unreasonable emission of noise.

- f) *any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations*

It is not considered that there will be any risk due to natural hazards or the use of hazardous substances or hazardous installations.



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30 June 15

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## CONTENTS

<b>1. Introduction</b> .....	7
<b>1.1 Overview</b> .....	7
<b>1.2 The Applicant</b> .....	7
<b>1.3 Purpose of Documentation</b> .....	7
<b>1.4 Site Location and Description</b> .....	7
<b>2. Description of Existing Environment</b> .....	8
<b>2.1 Current Land Use</b> .....	8
<b>2.2 Topography</b> .....	12
<b>2.3 Versatility Rating</b> .....	12
<b>2.4 Soils</b> .....	13
<b>2.5 Climate</b> .....	14
<b>2.6 Vegetation and Wildlife</b> .....	15
<b>2.7 Surface Waterways</b> .....	15
<b>2.8 Groundwater</b> .....	15
<b>2.9 Water Quality</b> .....	15
<b>2.9.1 Groundwater Quality</b> .....	15
2.9.1.1 <i>Waihopai Groundwater Zone</i> .....	15
2.9.1.2 <i>Waituna Zones</i> .....	16
<b>2.9.2 Surface Water Quality</b> .....	17
2.9.2.1 <i>Waituna Creek</i> .....	17
2.9.2.2 <i>Waituna Lagoon</i> .....	21
<b>3. Description of Activities</b> .....	23
<b>3.1 Consent Requirements and Activity Status</b> .....	23
<b>3.2 Permitted Activity Compliance</b> .....	24
<b>3.3 Change of Land Use to Dairy Farming</b> .....	25
<b>3.4 Effluent Discharge</b> .....	26
<b>3.4.1 Effluent Collection and Storage</b> .....	26
<b>3.4.2 Method of Discharge</b> .....	26
<b>3.5 Water Permit</b> .....	27
<b>3.6 Effluent Pond Construction</b> .....	27
<b>3.7 Bore Construction</b> .....	27



<b>3.8</b>	<b>Proposed Timeframes and Duration</b> .....	28
<b>4.</b>	<b>Consultation and Notification</b> .....	28
<b>4.1</b>	<b>Section 95 of the RMA</b> .....	28
<b>5.</b>	<b>Assessment of Environmental Effects</b> .....	29
<b>5.1</b>	<b>Effects of Converting Land to New Dairy Farming</b> .....	29
<b>5.2</b>	<b>Effects of Effluent Discharge</b> .....	32
<b>5.3</b>	<b>Conversion Environmental Management Plan (CEMP)</b> .....	35
<b>5.4</b>	<b>Effects of Water Permit</b> .....	35
<b>5.5</b>	<b>Effects of Pond Construction</b> .....	36
<b>5.6</b>	<b>Effects of Groundwater Bore</b> .....	36
<b>6.</b>	<b>Statutory Considerations</b> .....	36
<b>6.1</b>	<b>Section 104 (1) of the RMA</b> .....	36
<b>6.1.1</b>	<i>Part 2 of the RMA</i> .....	36
<b>6.1.2</b>	<i>Environmental Effects on the Environment</i> .....	37
<b>6.1.3</b>	<i>National Environmental Standards and Policies</i> .....	37
<b>6.1.4</b>	<i>Plans and Policies</i> .....	38
<b>6.2</b>	<b>Other Matters</b> .....	39
<b>6.3</b>	<b>Section 105 of the RMA</b> .....	39
<b>7.</b>	<b>Conclusions</b> .....	40

## **ATTACHMENTS**

Attachment A – Certificate of Titles

Attachment B – Farm Plan

Attachment C – RDAgritech Limited Effluent Pond Design Report

Attachment D – Receiving Environment/Water Quality Report

Attachment E – Conversion Environmental Management Plan

Attachment F – Written Approvals

## **1. Introduction**

### **1.1 Overview**

The applicant, Schrader Mains Limited, wish to convert their dairy grazing and beef block to a new dairy farm. This report gives an overview of the existing environment of the property and the proposal for which resource consent is sought.

### **1.2 The Applicant**

Schrader Mains Limited

c/- Hank and Sandra Schrader

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Invercargill

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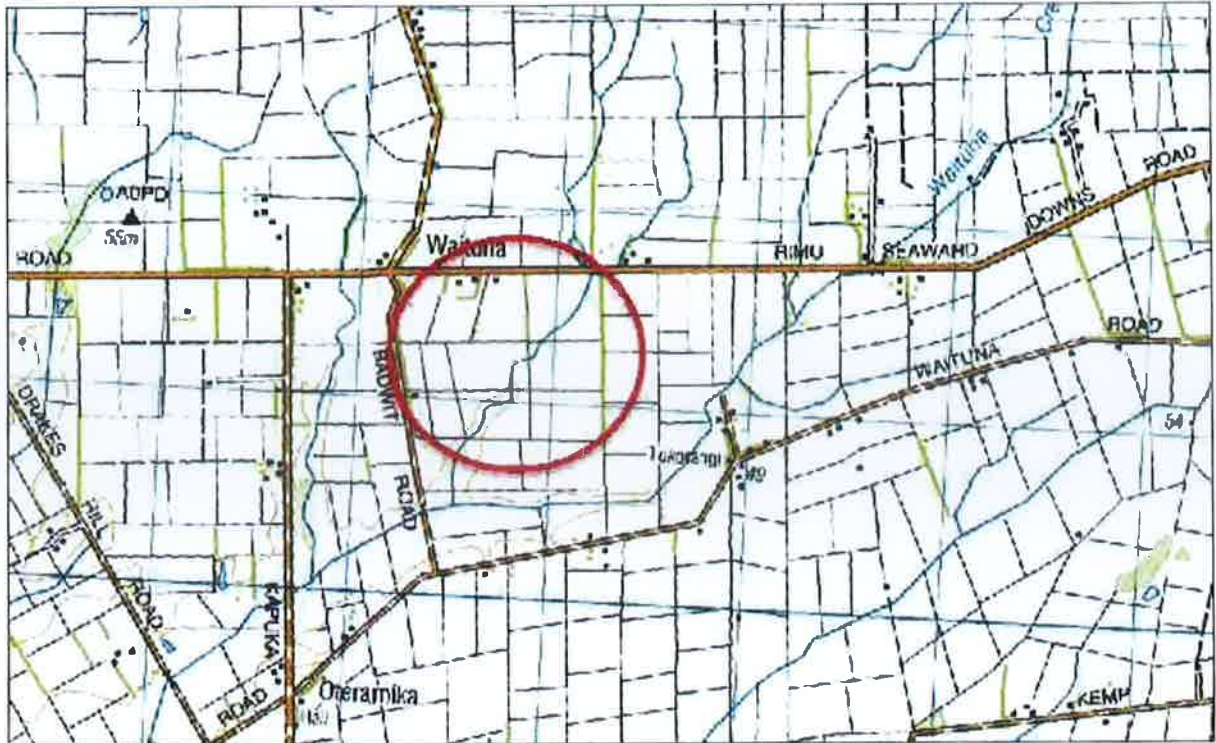
Cromwell 9342

### **1.3 Purpose of Documentation**

The purpose of this report is to form an application to Environment Southland for consents to facilitate the conversion of the property from dairy grazing and beef unit to dairy farming.

### **1.4 Site Location and Description**

The farm is located at 514 Rimu-Seaward Downs Road, Rimu-Seaward Downs, which is approximately 25km east of Invercargill City and 11km southeast of Woodlands. The farm is situated to the northeast of the Waituna Catchment.



**Figure 1:** Site Location shown as  (Source: LINZ Topo 50 Series)

The property totals 109.52 hectares (ha) and is legally described as Section 7, Section 49, Block II Oteramika Hundred and Lot 1 Deposited Plan 12478 as contained in Certificate of Title SL9C/678 and Part Section 5 - 6 Block II Oteramika Hundred as contained in Certificate of Title SL9C/679. A copy of the relevant Certificate of Titles are attached as Attachment A.

## 2. Description of Existing Environment

### 2.1 Current Land Use

The property currently operates as a dairying grazing (young stock and cow wintering) and beef unit. Kale crops cover approximately 17 hectares and are planted in accordance with a rotational planting system on the property.



**Photo 1:** *View of property*



**Photo 2:** *Example of fenced waterway with buffer zone*



**Photo 3:** *View looking over the property*



**Photo 4:** *Example of fenced waterway on property*



**Photo 5:** View of milking shed and associated infrastructure site

## 2.2 Topography

The contour of the property is mainly flat, with some sloping land along the waterway,

## 2.3 Versatility Rating

As outlined below, the Environment Southland Versatility rating for the farm was assessed and provided by Katrina Robertson of Environment Southland, this calculation is as follows:

**Table 1:** Versatility Rating

Soil Type	Versatility Rating	% of the property	Weighting for intensive pasture	Calculation
Dacre	Moderate	16	10	1.6
Woodlands	Moderate	84	10	8.4
<b>Total Score</b>		<b>100</b>		<b>10</b>

The score of 10 indicates that this property falls within Category 1, informally requiring a Conversion Environmental Management Plan (CEMP) that incorporates any property specific standards where appropriate to ensure the mitigation of any potential adverse effects. However, the applicant has gone



above and beyond this with preparing their CEMP to a Category 3 standard. These have been incorporated into the Farm Management Plan attached to this application.

## 2.4 Soils

In accordance with Environment Southlands Topoclimate Maps there are two main soil types identified as being present on the applicant's property, which are Woodlands and Dacre soils. The Woodlands soils are found on approximately 84% of the property, shown as brown in Figure 2 below. Dacre soils cover approximately 16% of the property and are mainly found around the waterways, as shown as blue in Figure 2 below.



**Figure 2:** Soils Map (Source: Environment Southland Topoclimate Map)

**Table 2: Soils Summary**

Soil Type	Approximate Area (ha)	Description <sup>1</sup>
Dacre	16	These soils are moderately deep to deep, poorly drained, and have silty textures. They are formed into fine alluvium from reworked loess.
Woodlands	84	Woodlands soils are imperfectly drained, have a deep rooting depth, high water holding capacity and silt loam textures. They are formed in deep wind-deposited loess derived from greywacke and schist rocks.

Given the soil types and their drainage properties a system incorporating low rate irrigation and effluent storage is appropriate to manage risks to groundwater and surface water from the intensification of landuse and disposal of effluent to land. A summary of the key vulnerability factors of the soil types is included below.

**Table 3: Soil Vulnerability Factors**

Soil Type	Vulnerability Factor		
	Structural Compaction	Nutrient Leaching	Waterlogging
Dacre	Moderate	Slight	Severe
Woodlands	Moderate	Slight	Moderate

Soils in the Waituna catchment have the tendency to be imperfectly drained due to the dominance of fine sediments (e.g. clay and silts) in the soil matrix which reflects the accumulation of loess deposits along with mudstone, siltstone and claybound gravel sediments of the underlying geology. Due to the soil type and the low-lying topography, developed land in the Waituna catchment includes extensive artificial drainage (mole, tile and surface drains) resulting in significant modification of the natural hydrology. Previously, groundwater and extensive wetland areas stored and slowly released excess rainfall to surface water ways and in a way acted like a natural water quality filter. With the introduction of artificial drainage water now flows quicker to streams and therefore reduces summer stream flows and reduces the opportunity for natural biochemical processes to improve groundwater quality<sup>2</sup>.

## 2.5 Climate

In terms of climate, the Waituna catchment is described as cool-temperate, with an annual rainfall of approximately 1,070mm. The property itself receives approximately 1152mm of rainfall annually and has a mean annual temperature of 10.1 degrees Celsius. Highest rainfall within the catchment occurs during summer and autumn and the lowest totals during winter and spring.

<sup>1</sup> Environment Southland Soil Information Sheets. Last updated 10/3/03

<sup>2</sup> Source: Environment Southland Waituna Catchment Groundwater Resource Technical Report (22/05/2012)

## 2.6 Vegetation and Wildlife

The subject property has been modified significantly from its natural state. Shelterbelts line majority of the paddocks on the property. It is not proposed that any of this vegetation would be removed as a result of the subject dairy conversion.

## 2.7 Surface Waterways

An unnamed tributary of the Waituna Creek flows diagonally through the applicant's property from Rimu-Seaward Downs Road boundary to Badwit Road boundary. The waterway has been fenced and riparian planting has been undertaken. On a site visit undertaken by Katrina Robertson from Environment Southland's Land Sustainability team confirmed that the riparian planting that has been undertaken is considered complete.

It is important to note that this waterways is cleared by Environment Southland every three years. The most recent clearing was in February 2015.

## 2.8 Groundwater

The applicant's property is located within the Waihopai Groundwater Zone. The Waihopai Groundwater Zone is a lowland aquifer which largely follows the boundary of the Waihopai River catchment bounded by the Makarewa catchment to the north, and by the coast to the south<sup>3</sup>.

## 2.9 Water Quality

### 2.9.1 Groundwater Quality

#### 2.9.1.1 Waihopai Groundwater Zone

The Regional Water Plan has delineated groundwater management zones for the Southland Region and the applicants' property is located in the Waihopai Groundwater Zone. Generally groundwater quality within the Waihopai groundwater zone complies with limits set in the Drinking Water Standards for New Zealand (DWSNZ). The 2010 State of the Environment (SOE) monitoring report<sup>4</sup> showed that of the 78 bores sampled in the Waihopai Groundwater Zone, the median nitrate concentration was 0.25 mg/L which is well below the DWSNZ maximum acceptable value of 11.3 mg/L. This indicates groundwater quality in this zone is very good which is interpreted to reflect the relatively large assimilative capacity of groundwater resources in this zone due to denitrification and/or attenuation processes. Only two sites sampled in this zone (i.e. 3% of all sites sampled) had an exceedance of the maximum acceptable value for nitrate, most likely in response to point source discharges or poor well head protection. Trend analysis of the three long term SOE monitoring sites showed no statistically significant trend in two sites and an improving nitrate trend in the remaining site.

Groundwater quality in the area around Waituna has been modelled by Environment Southland as having low to very low denitrification potential based on geology, sediment geochemistry and geomorphology (Rissmann 2011<sup>5</sup>) which suggests shallow groundwater is sensitive to nitrate accumulation. Environment

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<sup>3</sup> [file:///C:/Users/Rebecca/Downloads/waihopai%20\(5\).pdf](file:///C:/Users/Rebecca/Downloads/waihopai%20(5).pdf)

<sup>4</sup> Hughes, B. N., 2010. State of the Environment: Groundwater quality technical report. Prepared for Environment Southland by Liquid Earth Limited.

<sup>5</sup> Rissmann, C. 2011. Regional mapping of groundwater denitrification potential and aquifer sensitivity. Environment Southland publication number 2011-12, Invercargill.

Southland (Rissmann 2012<sup>6</sup>) have identified groundwater quality on the property as having nitrate levels which reflect pristine, pre-European background levels (i.e. nitrate (as NO<sub>3</sub>-N) between 0.01 – 0.4 mg/L) and minor to moderate land use impacts (i.e. nitrate between 1.0 – 3.5 mg/L) reflecting minimal impact of land use.

Regional time lag analysis (Chanut, 2014<sup>7</sup>) shows the Waituna catchment has a total vertical travel time for nitrate of 3 to 5 years and eigenmodelling by Lincoln Ventures<sup>8</sup> suggested Waituna has a very rapidly draining groundwater system with mean hydraulic storage residence times in the region of 1 to 8 weeks across the catchment.

#### 2.9.1.2 Waituna Zones

Environment Southland have broadly categorised groundwater resources in the Waituna catchment into three zones<sup>9</sup>:

- The Northern Waituna Zone which covers the northern section of the Waituna Creek catchment (north of Mokotua) and is characterised by thick, stoneless brown soils which buffer groundwater quality from the effects of land use due to cation exchange and chemical sorption processes which are aided by longer mean residence times (months). Shallow groundwater quality in this area shows little impact from land use with the main risk to water quality being from artificial drainage.
- The Mokotua Infiltration Zone which is in the central section of the Waituna Creek catchment (between Mokotua and Caesar Road) and is characterised by rapid infiltration of soil water with little or no attenuation of contaminants from overlying land use due to the reworking of soil and aquifer materials during a former sea level highstand during the last interglacial period (approximately 70,000 – 100,000 years ago). The movement of water through this zone is rapid (1-2 week mean residence time) and appears to contribute to the deterioration in water quality in Waituna Creek south of Mokotua. Because groundwater movement is so rapid, the risk of nitrate accumulating in the aquifer to excessive levels is relatively low.
- The Southern Waituna Zone includes the southern section of the Waituna Creek catchment as well as Curran's Creek and Moffat Creek catchments. This area is dominated by reducing groundwater conditions due to the abundance of organic carbon associated with wetland peat deposits and to a lesser extent lignite measures. Soil water drainage is relatively rapid and this area is susceptible to high phosphate solubility and mobility<sup>10</sup>.

Figure 3 shows that the applicants' property is located in Northern Waituna Zone which has identified artificial drainage as posing the greatest risk to water quality.

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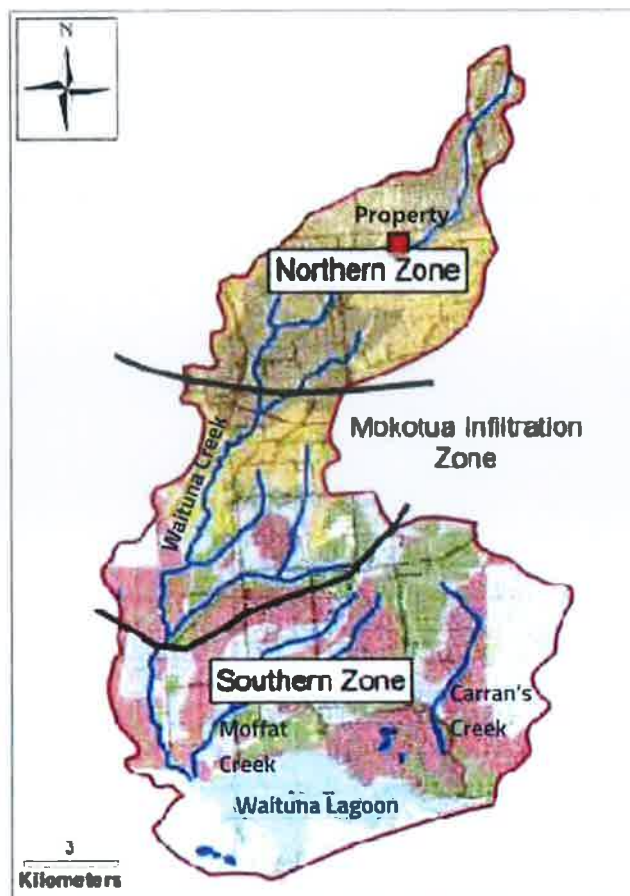
<sup>6</sup> Rissmann, C., 2012. The extent of nitrate in Southland groundwaters: Regional 5 year median (2007-2012 (June)). Environment Southland publication number 2012-09, Invercargill.

<sup>7</sup> Chanut, P., 2014. Estimating time lags for nitrate response in shallow Southland groundwater. Environment Southland publication number 2014-03, Invercargill.

<sup>8</sup> Burbery, L., 2012. Analysis of groundwater level data: Waituna Lagoon. Prepared for Environment Southland by Lincoln Ventures Limited, report number 1008-2-R1. Funded by Envirolink Advice Grant ESRC152. 17p.

<sup>9</sup> Rissmann, C., Wilson, K., and Hughes, B., 2012. Waituna catchment groundwater resource technical report. Environment Southland publication 2012-04, Invercargill. 93p.

<sup>10</sup> Adapted from Rissmann, C. 2011. Regional mapping of groundwater denitrification potential and aquifer sensitivity. Environment Southland publication number 2011-12, Invercargill.



**Figure 1:** Groundwater quality zones of the Waituna catchment as defined by natural variation in hydrological and hydrogeological properties, soil and aquifer types and hydrochemical variation [Adapted from: Environment Southland, 2012<sup>7</sup>]

Overall, based on the hydrogeological characteristics of the Waituna catchment described above, there is relatively low risk of nitrate concentrations accumulating in groundwater to levels that exceed the maximum acceptable value (excluding point-source discharges).

## 2.9.2 Surface Water Quality

### 2.9.2.1 Waituna Creek

The nearest Environment Southland surface water quality SOE monitoring site to the applicants' property is located approximately 4.5 km downstream (i.e. to the southwest) in the Waituna Creek, 1 metre upstream of Waituna Road<sup>11</sup>. There is also another SOE monitoring located in the downstream reaches of Waituna Creek at Marshall Road. The available water quality monitoring data from the Waituna Creek catchment has been summarised in Tables 3, 4, 5 and 6 and in Attachment A and B. These results show that when compared to other SOE sites across New Zealand, the water quality in the Waituna Creek is amongst the worst 25% of like sites for elevated phosphorous and nitrogen levels (Table 3). A comparison of all monitoring sites in the Waituna catchment against other catchments in the Southland

<sup>11</sup> It is noted that the SOE monitoring site is referred to as the Waituna Creek at Mokotua in the 2010 SOE report however the site has since been renamed to the Waituna Creek 1m upstream of Waituna Road. Monitoring at this site ceased in July 2014.

Region shows the Waituna catchment has the largest proportion of parameters in the lowest water quality category (Table 4)<sup>12</sup>.

**Table 4: Summary of Waituna Creek Water Quality Results Compared Nationally**

[Source: LAWA website]

Parameter	All NZ sites	All lowland rural sites	10 year trend	5 year trend
<b>Waituna Creek 1m upstream of Waituna Road</b>				
Bacteria ( <i>e.coli</i> )	Worst 25% of like sites	Worst 25% of like sites	No trend	No trend
Clarity (black disc)	Worst 50% of like sites	Worst 50% of like sites	Meaningful improvement	No trend
Nitrogen (total N)	Worst 25% of like sites	Worst 25% of like sites	Meaningful degradation	No trend
Phosphorous (total P)	Worst 50% of like sites	Worst 50% of like sites	No trend	Meaningful improvement
<b>Waituna Creek at Marshall Road</b>				
Bacteria ( <i>e.coli</i> )	Worst 50% of like sites	Worst 50% of all sites	No trend	No trend
Clarity (black disc)	Worst 25% of like sites	Worst 50% of all sites	Meaningful improvement	No trend
Nitrogen (total N)	Worst 25% of like sites	Worst 25% of all sites	No trend	No trend
Phosphorous (total P)	Worst 25% of like sites	Worst 25% of all sites	No trend	No trend

**Table 5: Summary of Waituna Catchment Water Quality Results Compared Regionally**

[Information derived from LAWA website]

Catchment	Number of monitoring sites	Number of Water Quality Parameters in Each Category			
		Worst 25%	Worst 50%	Best 50%	Best 25%
Aparima	5	0	3	4	2
Mataura	26	2	4	1	2
Mokotua	1	2	1	3	3
Oreti	16	2	5	0	2
Pourakino	4	0	3	4	2
Tokonui	1	6	2	0	1
Waiau	10	0	0	2	7
Waihopai	2	4	4	1	0
Waikawa	1	3	5	0	1
Waikopikopiko	1	0	3	5	1
Waimatuku	2	6	2	0	1
Waituna	5	8	0	1	0

Under the Regional Water Plan the Waituna Creek is classified as a lowland soft bed waterbody and it is noted that this distinguishes it from the other tributaries in the Waituna catchment (i.e. Moffat and Carran's Creeks are classified as lowland hard bed water bodies). When water quality data from the

<sup>12</sup> The median concentration from the site/catchment for a given parameter is compared to the quartiles for all sites/all like sites across New Zealand (based on a total of 945 monitoring sites).

Waituna Creek is compared against the Regional Water Plan values and objectives for lowland soft bed waterbodies, it can be seen in Table 5 that water quality is regularly exhibiting compromised condition, particularly with respect to macroinvertebrates which are a biological marker, and excessive nitrogen and phosphorous concentrations which are indicators of ecological condition. However for most parameters water quality trends are improving or are showing no trend. It is also noted that periphyton, which is only monitored downstream of the property, is well within the Regional Water Plan standards.

**Table 6: Summary of SOE Surface Water Quality Results Compared Against Regional Water Plan Standards**<sup>13</sup>

Parameter	ES Standard	Min <sup>1</sup>	Median <sup>1</sup>	Max <sup>1</sup>	Samples breache d <sup>1</sup> (%)	Trend Magnitude <sup>1</sup> (% per year)
<b>Waituna Creek 1m upstream of Waituna Road</b>						
Dissolved Reactive Phosphorous (mg/L)	<0.010	0.005	0.015	0.057	30	Improving (9.3%)
Nitrate Nitrite Nitrogen (mg/L)	<1.7	0.400	1.65	4.40	49	Deteriorating (3.2%)
Unionised ammonia (mg/L)	<0.344	0.0150	0.046	0.166	0	No Trend
Visual clarity (m)	>1.3	0.05	1.08	3.00	33	No Trend
Faecal bacteria (CFU/100 ml)	<1,000	33	500	110,000	25	No Trend
Water temperature (°C)	<23	4.7	10.9	15.6	0	N/A
<b>Waituna Creek at Gorge Road</b>						
Macroinvertebrate community index	>80	64	80	89	60	No Trend
Ash free dry weight (g/m <sup>2</sup> )	<35	8.4	19.3	22.4	0	N/A
Chlorophyll-a (mg/m <sup>2</sup> )	<120	38.6	39.2	50.9	0	N/A
<b>Waituna Creek at Marshall Road</b>						
Dissolved Reactive Phosphorous (mg/L)	<0.010	0.005	0.015	0.057	78%	Improving (4.5%)
Nitrate Nitrite Nitrogen (mg/L)	<1.7	0.027	1.28	4.50	34%	Deteriorating (2.8%)
Unionised ammonia (mg/L)	<0.344	0.0087	0.031	0.324	0%	Improving (15.9%)
Visual clarity (m)	>1.3	0.08	0.78	1.5	50%	Improving (4.5%)
Faecal bacteria (CFU/100 ml)	<1,000	20	320	69,000	23%	No Trend
Water temperature (°C)	<23	4.2	11.2	18.6	0%	N/A
Macroinvertebrate community index	>80	64	76	82	80%	Deteriorating (1.6%)

<sup>13</sup> Source: Wilson, K, Meijer, K, Larkin, G, and Hicks, A, 2012. Water quality methodology for Southland Water 2010 report. Environment Southland publication number 2012-05, Invercargill.

\* Monitoring period is 2005 – 2010

\*Monitoring period is August 2000 – 30 June 2010

Water quality in the Waituna Creek has also been assessed against the National Bottom Lines in the NPS-FM. Time-series plots of water quality in the Waituna Creek at Marshall Road are included in Attachment A and Waituna Creek 1 metre upstream of Waituna Road in Attachment B. Table 6 compares 1<sup>st</sup> July 2013 to 30<sup>th</sup> June 2014 (i.e. the 2013/14 hydrological year) water quality results from both Waituna Creek SOE monitoring sites. Overall, the results suggest that while water quality in the Waituna Creek may be considered to be compromised in comparison to other SOE monitoring sites across New Zealand and Southland, the Waituna Creek has not breached the National Bottom Lines in the last 12 years of monitoring and in most instances can be categorised as being good to fair (i.e. falls within the 'B' and 'C' attribute states).

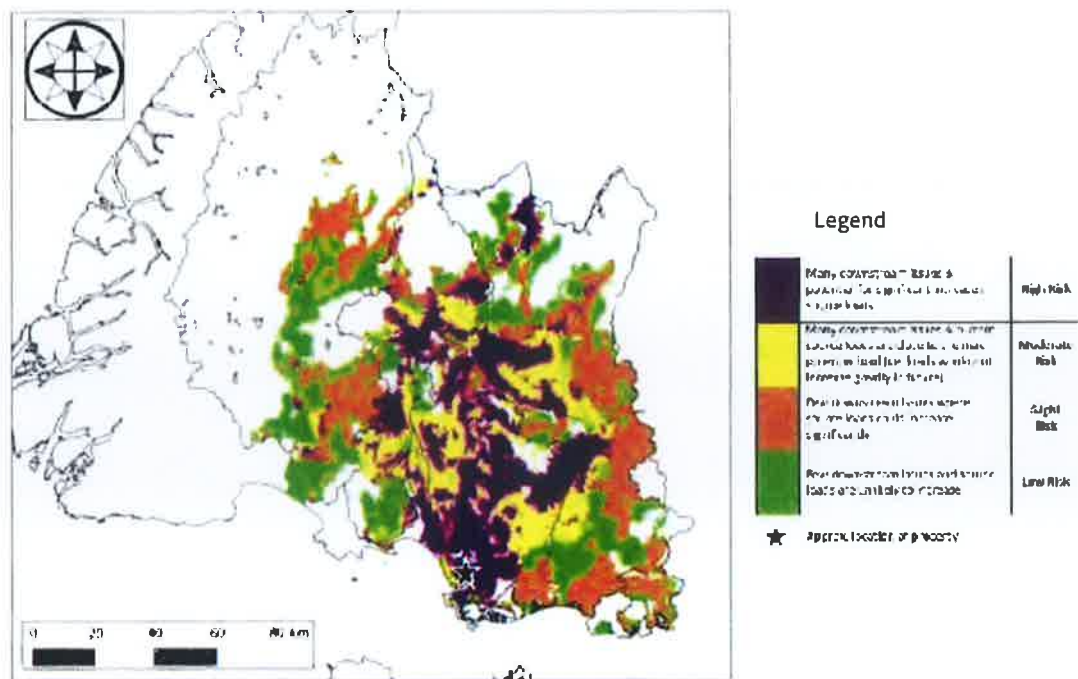
**Table 7: Summary of Waituna Creek 2013/14 Results Compared to National Bottom Lines**  
[Information derived from Environment Southland and the Ministry for the Environment (2014)]

	Nitrate (Toxicity) (mg NO <sub>3</sub> -N/L)		Ammonia (Toxicity) (mg NH <sub>4</sub> -N/L)		E. coli (Recreation) (E. coli/100 mL)
	Annual Median	Annual 95 <sup>th</sup> Percentile	Annual Median	Annual Maximum	Annual Median
<b>National Bottom Line</b>	<b>6.9</b>	<b>9.8</b>	<b>1.30</b>	<b>2.20</b>	<b>1,000</b>
Waituna Creek 1m upstream Waituna Rd	1.96	4.08	0.04	0.13	385
Waituna Creek at Marshall Road	1.26	2.94	0.05	0.12	460

In summary, the available data suggests the state of water quality in the Waituna Creek catchment is generally fair with the main contaminants of concern being excessive levels of nutrients, especially in the downstream reaches. These results suggest water quality is being driven by a relatively complex combination of overland and lateral flow (i.e. soil drainage and discharge from artificial drains) being the primary transport mechanisms. Nitrate concentrations may also be affected by groundwater discharge, particularly in the middle to lower stream reaches.

Freshwater resources in the Southland Region have been recently stratified according to their water quality issues and disproportionate contaminant source areas. As part of this study, a map was developed looking at water quality risk to future development. As is shown in Figure 4, the applicants' property appears to be located in an area of slight risk meaning there are few downstream water quality issues where source loads could increase significantly.





**Figure 2:** Water quality stratification of the Southland Region demonstrating future development risk [Source: Aqualinc 2014<sup>14</sup>]

### 2.9.2.2 Waituna Lagoon

The Waituna Lagoon is a relatively large ICOLL that is separated from the sea by a barrier beach. The lagoon is fed by three freshwater streams, the largest of which is the Waituna Creek, and drains to the sea through an artificially managed opening. Historically, the lagoon was surrounded by a peat bog wetland about 20,000 ha in size whose drainage gave the lagoon water its characteristic clear brown humic stain, low nutrient status and low pH. Today the catchment is dominated by agricultural land use (intensive sheep, beef and dairying) resulting in increased nutrient inputs into the lagoon. Because the lagoon is largely unmodified and its remaining coastal wetland is largely intact, it was designated as being of international significance under the RAMSAR Convention in 1976<sup>15</sup>.

A coastal risk assessment undertaken by Wriggle Coastal Management in 2008<sup>16</sup> shows that while eutrophication and sedimentation is an issue in the lagoon, overall vulnerability and susceptibility ranges from very low to high, as shown in Table 7.

<sup>14</sup> Aqualinc, 2014. Regional Scale Stratification of Southland's Water Quality - Guidance for Water and Land Management. Prepared for Environment Southland, report number C13055/02.

<sup>15</sup> Adapted from Wriggle Coastal Management, 2008. Southland Coast Te Waewae Bay to the Catlins: Habitat mapping, risk assessment and monitoring recommendations. Prepared for Environment Southland, August 2008.

<sup>16</sup> Wriggle Coastal Management, 2008. Southland Coast Te Waewae Bay to the Catlins: Habitat mapping, risk assessment and monitoring recommendations. Prepared for Environment Southland, August 2008.

**Table 8: Risk assessment for the Waituna Lagoon**

[Source: Wriggle Coastal Management, 2008]

	<i>Existing Rating</i>	<i>Condition</i>	<i>Susceptibility Rating</i>	<i>Vulnerability Rating</i>
<b>Sedimentation</b>	Fair		High	High
<b>Eutrophication</b>	Fair		High	High
<b>Disease Risk</b>	Very Good		Moderate	Low
<b>Contaminants</b>	Very Good		Moderate	Low
<b>Habitat Loss</b>	Good		Moderate	Low
<b>Invaders</b>	Good		Moderate	Low
<b>Shellfish</b>	Very Good		Very Low	Very Low

In 2010, it was identified that the last ten years of monitoring data highlighted a rapid decline in the ecological condition of the lagoon to the point it had deteriorated from a high value seagrass (*Ruppia*) dominated state to a more degraded condition with nuisance epiphyte and algal blooms and sediment anoxia causing stress to the keystone *Ruppia* species. Expert opinion at the time was that unless urgent intervention occurred, the lagoon could undergo a rapid transition to an even more degraded phytoplankton dominated state which would change the fundamental values and character of the lagoon<sup>17</sup>. A multi-agency and community response was initiated that incorporated a range of scientific investigations and catchment works along with changes to the opening regime and land management within the catchment. Although the nature of the response has changed over time, the response to water quality issues in the Waituna catchment are still on-going<sup>18</sup>.

The dynamics of ICOLL's are less well understood than their estuarine or coastal lake counterparts and their shifts between freshwater infill and seawater ingress make them highly dynamic and complex environments. The ecology and water quality in ICOLL's are driven by complex interactions between the opening regime, climate and catchment nutrient loads. In terms of management, there is a "trade-off" between the salinity and desiccation pressures on macrophytes from artificial opening events versus the potential for these events to flush nutrient-laden freshwater and organically-enriched sediments from the lagoon. Modelling results by the University of Waikato show that "*under current catchment nutrient loads it is not possible to maintain a "healthy" Ruppia population in the lagoon with changes to the opening regime alone.*" However the amount of nutrient load reductions required to sustain persistent and productive *Ruppia* beds are dependent on the opening regime adopted<sup>19</sup>. At this point in time, it appears no opening regime and nutrient load reduction targets have been formally adopted by Environment Southland.

<sup>17</sup> Roberston, B., Stevens, L., Schallenberg, M., Roberston, H., Hamill, K., Hicks, A., Hayward, S., Kitson, J., Larkin, G., Meijer, K., Jenkins, C., and Whaanga, D. 2011. Interim recommendations to reduce the risk of Waituna Lagoon flipping to an algal-dominated state. Prepared for Environment Southland by the Lagoon Technical Group. Environment Southland, Invercargill. 16p.

<sup>18</sup> It is noted that the Interim Recommendations by the Lagoon Technical Group has been subsequently revised however this document is not in the public domain and has therefore not been used in this report.

<sup>19</sup> Adapted from Hamilton, D., P., Jones, H. F. E., Özkundakci, D., McBride, C., Allan, M. G., Faber, J., and Pilditch, C. A., 2012. Waituna Lagoon Modelling: Developing quantitative assessments to assist with lagoon management. Prepared for Environment Southland by the University of Waikato, ERI report number 004, Hamilton. 93p.

### 3. Description of Activities

The applicant, Schrader Mains Limited, have been farming within the Waituna catchment for a number of years and seek consent to convert their dairy grazing and beef unit to dairying. In addition to this property the applicant currently owns and operates a dairy farm approximately 4km north of the subject farm outside of the Waituna Catchment.

The proposed herd size will be a maximum of 306 cows run on 103 ha (effective land area). This equates to a proposed stocking rate of 2.97 cows to the hectare which is considered to be within the average for dairying in Southland. The cows will be milked through a 30 – 32 aside hearing bone cowshed twice daily throughout the typical milking season of 1 August – 31 May. The majority of stock are to be wintered off the property with approximately 90 cows to stay on the property over the months of June and July.

An effluent system will be installed to assist with effluent management incorporating low rate irrigation methods and an effluent storage pond to allow for deferred storage. The applicant is not installing a new stand-off pad, although does have a large concrete area that will be adapted and used in conjunction with the milking shed yards to allow stock to be stood off wet paddocks. The concrete pad is approximately 17m x 21m and will have a lead in to the milking shed. This has been included in the Massey Pond Storage Calculator. Liquids from the concreted area will be treated the same as the FDE from the milking shed and the solids will have a separate drying bunker.

A Conversion Environmental Management Plan (CEMP) has been prepared in accordance with Rule 17A of the Regional Water Plan for Southland (RWPS) and is appended to this report (Attachment E) to form part of the application for resource consent. The CEMP details management practices that will be implemented to ensure best on-farm practice and compliance with both consent conditions and industry led accords. The CEMP includes a nutrient budget and summary prepared by a suitably qualified person which will guide the management of nutrient resources on the property.

#### 3.1 Consent Requirements and Activity Status

The following consents are required to facilitate the conversion of the property to dairying:

**Table 9: Consent Requirements**

Consent	Plan	Rule	Activity Status
Land use consent to convert land to dairying	Water	Transitional Rule 17A relating to the change of land use for new dairy farming	Discretionary
Discharge consent to discharge farm dairy effluent to land	Water	50	Restricted Discretionary
Water Permit to abstract and use groundwater for stock and shed purposes	Water	23(d)	Discretionary Activity

Consent	Plan	Rule	Activity Status
Land use consent to construct an effluent pond	Water	49 Agricultural Effluent Ponds	Restricted Discretionary
Land use consent to construct a bore	Water	22(a)	Controlled Activity

Further details of the proposed activities are given as follows.

### 3.2 Permitted Activity Compliance

In accordance with Schedule 4 of the RMA, an assessment of effects must now describe and demonstrate compliance with any permitted activity that is part of the proposal for resource consent(s).

Agricultural activities can involve a number of activities regulated under the relevant Regional Plans. The permitted activities which are considered to be particularly associated with the use of the land for dairying activities for which the applicant is seeking resource consent are identified as follows;

**Table 10: Summary of Permitted Activities associated with the proposal**

Activity	Plan	Rule
Discharge of agrichemicals to surface water	Water Plan	4
Discharge of agrichemicals to land where they may enter water	Water Plan	5
Discharge of sludge to land from agricultural effluent treatment systems	Effluent Plan	5.3.1
Place, erect, reconstruct culverts less than or equal to 1200mm in diameter in river beds	Water Plan	28
Installation of paddock drainage	Water Plan	20
Weed and sediment removal for drainage maintenance (and associated discharge of sediment)	Water Plan	15 and 46
Discharge from tile drains	Water Plan	9
Discharge of fertiliser	Water Plan Air Plan	10 6.5.7

### **3.3 Change of Land Use to Dairy Farming**

Consent is sought under Rule 17A to change from the current land use as a dairy grazing and beef unit to farming the property as a fully functional dairy farm. The proposed herd size will be a maximum of 306 cows which will be milked twice a day through a herring bone milking shed. The feeding system will be predominantly pasture based with some grass silage fed as supplementary feed in the winter months and shoulders of the season.

The farm intends to seasonally milk 306 cows at a stocking rate of 2.97 cows/ha (effective area) grazed producing 123,600kg Milk Solids (412kg MS/cow/yr). The herd is to consist of Friesian Jersey cross bred cows which are considered to be a smaller breed size compared to straight Friesian. Majority of stock are to be wintered off the property, with approximately 90 cows, 60% of the herd, remaining on the property over the months of June and July. No winter milking is proposed. There is an existing concrete area, approximately 17m x 21m, which is to be reconfigured and used as a stand-off pad/feeding pad. This has been included in the Massey Pond Storage Calculator, later discussed in Section 3.4 of this report.

A Nutrient Management Plan has been prepared by Miranda Hunter, of Roslin Consultancy Limited, and is included in the CEMP attached. The whole farm losses for the proposed land change have been modelled by OVERSEER® equate to 29 kilograms of Nitrogen per hectare per year (kg/ha/year) and 0.6 kg/ha/year of Phosphorus. The Nitrogen losses are within the average for dairy farms in both Southland and nationwide while the Phosphorus losses are considered to be low.

It is important to note that there has been a change in protocols in the Overseer Best Practice Data Input Standards in April 2015. Previously the peak number of cows was the parameter that was used, that is the peak number in production which usually occurs during the October/November period. The new protocol states to use monthly stock numbers. In a typical dairy farm situation you start the winter with your wintered number of cows, then typically peak milk 5% less. The 5% accounts for stock deaths, cows that get culled, cows that slip (lose their calf), and cows that don't bag up (come into milk). In the case of the applicant's property the total number of wintered stock will be 320 cows, although from this number only 306 cows will go through the shed during the milking season.

In accordance with Rule 17A, a CEMP has been prepared for the property and is attached as Attachment E to this application. The CEMP outlines management plans and good practice guidelines, and has been prepared as a team effort between Landpro and the applicant.

### **3.4 Effluent Discharge**

The proposed dairy herd of 306 cows will generate a volume of 15,300 litres of effluent per day, based on the standard 50 litres of effluent per cow per day. Effluent management is integral to maintaining a sustainable dairying operation. There are two components of effluent management to be considered, being the effluent storage volume required and the discharge of effluent.

#### **3.4.1 Effluent Collection and Storage**

Effluent from the shed and yard will drain via gravity to a stonetrapp. Solids removed from the stonetrapp will be dried in a 4m x 3m concrete bunker which is to be constructed adjacent to the stonetrapp. A drain will be installed at the front of the bunker to direct any excess liquid back into the stonetrapp and allow the solids to dry, before solids are applied to land. Vehicle access will be provided for to the stonetrapp and solids bunker to enable this to be cleaned. Farm Dairy Effluent (FDE) will drain via gravity from the stonetrapp to a new 930m<sup>3</sup> storage pond. FDE in the pond will be mixed prior to the discharge using a horizontal thrust stirrer. Refer to Attachment C Appendix D for Design Drawings of the effluent system.

The pond capacity has been calculated using the Massey University Dairy Effluent Storage Calculator and the FDE Design Code of Practice. The Massey calculator takes into account the receiving soils, climate data, number of cows, catchment areas and irrigation methods to determine the appropriate volume of storage. The recommended storage for the property has been calculated at 834m<sup>3</sup>. This calculation is based on a herd size of 320 cows to provide additional storage to allow greater flexibility for the applicant in terms of non-effluent discharge days of effluent from the maximum peak milking herd of 306 cows.

A copy of the effluent pond design report prepared by RDAgritech, which includes the Massey Pond Calculator Summary, is attached as Appendix C.

#### **3.4.2 Method of Discharge**

Discharge of effluent will be undertaken year round, utilising a low application rate Larral Smart Hydrant system. Discharge will occur on every available day until the nutrient limit of the soil or the maximum depth of application is reached. On days when the receiving soils are not suitable for effluent irrigation, the system will be inactive with daily FDE and stormwater stored in the storage tanks. The nearest Council soil moisture monitoring site will be used in conjunction with an on-farm hand held monitoring device, which is paddock specific, to determine whether soils are suitable for application of effluent in conjunction with visual inspection by the manager of the effluent system.

The irrigation system proposed is a low rate Larral Smart Hydrant system which will run for around 10 hours each day (a volume of 200m<sup>3</sup>) with a maximum daily application depth of 20mm, based on a 6 part Larral applying 2mm depth per hour. Low rate systems are preferred by Environment Southland as having better environmental outcomes, incorporating low rate application of effluent over the soils with mixed contour and good drainage is suitable.

The total Farm Dairy Effluent (FDE) disposal area will be approximately 93 hectares available to receive effluent from the future herd size of 306 cows. The average N applied to the regular effluent block from

effluent as modelled by overseer is 29 kg/N/ha/year well within council's standard recommendation of 150kg/N/ha/year from effluent.

The following buffer zones will apply:

- 20 metres from any farm boundary;
- 200 metres from any residential dwellings not located on the property; and
- 100 metres from any bore located on the property.
- 20 metre buffers from all surface water bodies

The areas which are proposed to be subject to effluent discharge are shown on the Farm Plan attached as Appendix B.

### **3.5 Water Permit**

Water is to be taken from a groundwater bore for dairy shed and stock water purposes. It is proposed that a volume of 36,720 litres per day (36.72m<sup>3</sup>) at a rate no greater than 2 litres/second be abstracted for shed and stock water purposes. It is proposed that two groundwater bores will be used for this take, one of which is an existing bore located near to the applicant's house and the second bore is to be constructed close to the milking shed. As shown on the Farm Plan attached as Attachment B.

The volume required has been calculated using the standard figures of 50 litres per cow per day for shed water and 70 litres per cow stock drinking water.

### **3.6 Effluent Pond Construction**

The proposed effluent storage pond is to be designed and the construction overseen by RDAgritech Limited, the plans are attached as Attachment C. The pond is to be lined with a synthetic liner and has been located on soils with low permeability. The effluent pond is to be sited within the vicinity of the dairy shed, as shown on the Farm Plan as Attachment B, with the following buffers being applied:

- 50 metres from any surface water body, artificial watercourse or coastal marine area;
- 200 metres from any dwelling not on the same property;
- 50 metres from the boundary of any other property; and
- 100 metres from any water abstraction point.

Soil testing has been undertaken by RDAgritech to ensure that the proposed site is appropriate for effluent storage.

The construction of the pond itself will be undertaken by contractors and overseen by RDAgritech.

### **3.7 Bore Construction**

The applicant wishes to construct a groundwater bore to abstract groundwater for the purpose of stock and shed water in conjunction with an existing groundwater bore already located on the property. The bore is to be located close to the proposed dairy shed site, albeit the exact location of this bore is yet to be confirmed, shown on Farm Plan attached as Attachment B.

The bore itself will be constructed in accordance with the NZS 4411:2001 Environment Standard for Drilling of Soil and Rock.

### **3.8 Proposed Timeframes and Duration**

It is intended that the property is to be converted to dairying within the next five years, and therefore it is requested that a lapse period of five years is placed on the consent.

A period of 15 years is sought for the resource consent to discharge FDE and abstraction of groundwater which reflects the need for security and the substantial investment whilst recognizing that the environment is subject to change.

The application for land use consent is sought pursuant to Section 9 of the RMA and is therefore subject to Section 123(b) of the RMA with the period of consent being unlimited.

A period of 5 years is applied for the land use consent to construct an in-ground effluent pond to allow sufficient time for the applicant to undertake these works.

## **4. Consultation and Notification**

Consultation has been undertaken with adjoining and adjacent landowners regarding the proposed dairy conversion and the associated activities. Affected parties approvals have been obtained from all adjoining and adjacent landowners and the respective signed approval forms are attached as Attachment F.

The resource consent application has been sent to Te Runanga o Ngai Tahu (TRONT), Te Ao Marama Inc (TAMI), Fish & Game and Department of Conservation (DOC).

### **4.1 Section 95 of the RMA**

A consent authority has the discretion whether to publicly notify an application unless a rule or National Environmental Standard (NES) precludes public notification (in which case the consent authority must not publicly notify) or section 95A(2) applies, which states that an application must be publicly notified if;

- *the activity will have, or is likely to have, adverse effects on the environment that are more than minor;*
- *the applicant requests public notification of the application; or*
- *a rule in a plan or a national environment standard requires public notification.*

In determining whether an activity will have, or is likely to have, adverse effects on the environment that are more than minor, the consent authority must, in accordance with Section 95D of the RMA disregard the following matters:

- *effects on persons who own or occupy the land in, on or over which the application relates, or land adjacent to that land;*
- *any effect on a person who has given written approval to the application;*
- *trade competition and the effects of trade competition;*
- *an adverse effect of the activity on the environment if a rule or NES permits an activity with that effect;*



- any effect on a person who has given written approval to the relevant application.

Notwithstanding all the above, including whether a rule or national environmental standard precludes public notification or the applicant has not requested notification, a consent authority has the discretion to publicly notify an application if it decides there are special circumstances in relation to the application.

The applications for consent do not, in our view, meet the criteria for notification set out in Section 95A as the effects of the activities will be no more than minor, the applicant does not request public notification and there are no rules or NES' which require the public notification of the applications. In addition, there are no special circumstances relating to the applications. However, in regards to a similar application being notified within this catchment being notified we accept that Environment Southland may consider special circumstances exist which warrant notification

## 5. Assessment of Environmental Effects

Subject to Section 104 of the RMA, when considering an application for resource consent, the consent authority must, subject to Part 2, have regard to any actual and potential effects on the environment of allowing the activity. There are also matters included in Section 104 of the RMA for which Council's assessment must not have regard to.

**Table 11:** Overview of consents required and activity status

Consent	Activity Status
Land use to convert land to dairying	Discretionary
Discharge consent to discharge farm dairy effluent to land	Restricted Discretionary
Water Permit to abstract and use groundwater for shed and stock purposes	Discretionary
Land use consent to construct an effluent pond	Restricted Discretionary
Land use consent to construct a groundwater bore	Controlled Activity

### 5.1 Effects of Converting Land to New Dairy Farming

Intensive dairying can have an environmental impact. Using Council versatility ratings, the property is assessed to be suitable for dairying provided that appropriate farm management techniques are employed.

Expansion of the dairy industry in Southland through the establishment of new dairy farming will continue to be a significant contributor to the regional economy. However, the environmental effects of new dairy farming are a matter of general public interest, and effects on water quality require management for the sustainability of the industry in the region.

The development and intensification of land use within the Waituna catchment is believed to be having an adverse effect on water quality, which in turn is degrading the Waituna Lagoon. In the past few years heightened concerns as to the effects that land use within the catchment is having on water quality has brought both public and political attention. There are a number of different land uses within the catchment which have varied farm management systems. Through education and greater awareness many changes have been made to improve water quality. Dairying in the catchment is considered to be one of the main land uses currently undertaken. In 2011 AgResearch released a report looking at potential nitrogen and phosphorus losses from example farms in the Waituna Lagoon Catchment, sources and mitigation. The following management practices were recommended to mitigate nitrogen and phosphorus losses in regard to dairying:

- Increasing soil Olsen P increases modelled P losses. Soil Olsen P concentrations should therefore not exceed agronomic optimums.
- A significant portion of the non-block N and P losses arose from stock access to waterways, which suggests that direct access to waterways, even those that do not fall under the dairy clean streams accord, should be prevented by fencing
- The rate and timing of effluent application were important factors in determining P losses, meaning that a strategy of applying little and often (when soil moisture is in deficit) would help decrease losses
- Storage of effluent is an important factor in determining P losses by preventing the need to apply effluent when soil is wet and likely to result in surface runoff or sub-surface flow.
- Wintering-off is effective for decreasing nitrogen and phosphorus losses if stock are transported out of the catchment
- Use of a winter herd shelter may be effective in decreasing nitrogen, phosphorus and possibly sediment losses, but only if effluent is captured and applied according to good practice as identified above<sup>20</sup>.

The applicant has prepared nutrient budgets for the proposed dairying operation and the current land use. The nutrient budget for the proposed dairy operation predicts nitrogen loss over the whole farm of 29 kg/ha/year and a phosphorus loss of 0.6 kg/ha/year, for a 306 cow herd, which is within the average range for NZ Dairy Farms (24-42kg N/ha/yr). This figure does not represent an excessive amount of potential leaching. The overall phosphorus loss for the property is 0.6 kg/ha/yr which is considered to be low. The main source of phosphorus is through surface water runoff.

To allow comparison the nitrogen and phosphorus losses associated with the current land use (dairy grazing and beef) and the proposed land use the applicant has completed a nutrient budget for the current farming system. The existing farming operation has a loss of 35kg/ha/year of nitrogen and 0.4kg/ha/year of phosphorus.

In terms of nitrogen losses, the losses from the existing farming system are greater than that of the proposed land use, whereas there is an increase in phosphorus losses from the proposed land use compared to the current land use. The Overseer results are summarised in Table 6 below:

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<sup>20</sup> Source: AgResearch Potential Nitrogen and Phosphorus Losses from Example Farms in the Waituna Catchment: Sources and Mitigation (June 2011) <http://www.es.govt.nz/media/13683/potential-nitrogen-and-phosphorus-losses-from-example-farms-in-the-waituna-catchment.pdf>

**Table 12: Summary of Estimated Losses via Land Use Types**

Land Use	Nitrogen Losses (kg/ha/year)	Phosphorus Losses (kg/ha/year)
Existing Land Use (Dairying grazing and beef unit)	35	0.4
Dairying (306 cows, 60% wintered off, production 123,600 kg ms)	29	0.6

Nutrient modelling suggests nitrogen loss will be reduced by 17% under the proposed activity and phosphorous loss will increase by 50%. Published reports show current nutrient loads to the Waituna Lagoon are compromising ecological health within the lagoon (particularly in relation to the keystone species *ruppia*). Therefore any reduction in nutrient loads will assist in improving water quality and ecological health in the lagoon and any increase in nutrients is likely to be detrimental.

Overseer predicts that the proposed change in land use will result in an increase of phosphorus losses. The loss of phosphorus from land to surface water is a function of the availability of phosphorus source to loss and transport pathways to get from their source to streams and rivers. Overseer has been used to model nutrient losses at a farm level and a number of assumptions have been used. The critical source areas for phosphorus losses on this property have been identified by the applicant as the swales, runoff from lanes and water crossing. In terms of addressing these issues the applicant proposes to undertake the following:

- Laneways are to be constructed to camber to allow runoff is into vegetative areas;
- Stock crossings are to have nib walls along the side and runoff is directed into vegetative areas;
- Buffer zones from waterways in terms of effluent application and riparian margins;
- Wintering of 60% of stock off the property during these critical months;
- Deferred effluent storage and low rate irrigation system; and
- Swales that could flow into a creek are to be fenced with a wider buffer zone to act as an additional filter.

The scale of increase associated with the proposed change in land use is considered to be small. The Overseer model that has been used makes a number of assumption, one of which is that it cannot include the mitigation measures proposed by the applicant, in particular around critical source area management. In terms of the effects associated with the nutrient losses from the proposed land use is considered to be less than minor. A report regarding water quality and the receiving environments is appended as Attached D.

The potential effects and risks from new conversions are required to be addressed by the applicant by adopting a management plan approach. This approach involves the implementation of a CEMP which includes a management plans relating to nutrients, soil, waterway, effluent system and biodiversity. The CEMP aims to identify the specific risks of new dairy farming on the subject property and measures to address those risks including stocking rates, wet weather contingency plans, exclusion of stock from waterways and riparian planting. The Nutrient Management Plan includes a nutrient budget which describes all of the sources of nutrient on the property and how they will be managed in an overall system. Examples of nutrient sources include discharges from farm dairy effluent systems, animal discharges and atmospheric nitrogen fixation.

All applications for a conversion are required to calculate a soil versatility rating based on the soils present on the milking platform. The soil versatility rating determines how the application for a conversion should be considered, and the scale of the CEMP. In this case the versatility rating of the applicant's property was assessed by Council and given a rating of 10 (see Table 2 above) which requires a Category 1 Farm Plan to be prepared that includes standard farm management practices plus any site specific standards.

A CEMP has been prepared as if it were for a Category 3 farm as the applicant wishes to take a conservative approach. The Nutrient, Riparian and Effluent Management strategies set out in the CEMP attached as Appendix E go over and above the management practices of the dairying activity that has been conducted as an existing lawfully established activity.

Dairying, like other forms of intensive farming, can have effects on surface water as a result of stock having access to waterways. In order to avoid nutrient runoff and point source discharges, waterways will be fenced to prevent stock access and a Nutrient Management Plan will be followed along with management of effluent disposal, including the implementation of buffer zones around surface waterways. To mitigate nitrogen and phosphorus losses to surface water and groundwater riparian margins have been planted and effluent is to be applied at a low rate when a soil moisture deficit is present.

Majority of stock are to be wintered off the property, however the applicant has allowed approximately 90 cows to stay on the property over the months of June and July. All other stock are to be wintered off the property. A concrete pad is to be adapted and is to be used in conjunction with the milking shed yards for the purpose of standing stock off wet paddocks as well as feeding.

Overall, the use of the land for dairy farming is not expected to have an adverse effect on the environment during the milking season because of the use of low rate irrigation and deferred storage (see Section 5.2 of this report). The predicted nutrient losses to water are not excessive, and the low stocking rate and design of the milking platform should mitigate the effects of discharging effluent onto soils which are vulnerable to nutrient leaching.

## **5.2 Effects of Effluent Discharge**

A number of parameters are used to assess actual or potential adverse effects of the discharge of FDE to land. These generally relate to the sensitivities and assimilative capacities of receiving environments as well as risk factors associated with farm management practices. The following assessment addresses the parameters of the discharge within this context and refers to standards and best practices where these are relevant.

### Stocking Rate

The applicant's landholding in Waituna has a total area of 110 hectares. The proposed platform will have an effective area of 103 hectares. Based on the maximum peak milking herd of 306 cows the property will have a stocking rate of 2.97 cows/hectare (effective area) or 2.78 cows/hectare whole farm. This is considered to be within the regional average for dairy farming.

### Disposal Area

The proposed disposal area of 93 ha provides a disposal area to stock ratio of 30 ha/100 cows. This ratio is greater than the nationally recognized minimum recommendation of 4 ha/100 cows and the Council's Best Practice Guideline of 8 ha/100 cows to achieve a nitrogen loading of no more than 150 N/kg/ha for the effluent discharge. The applicant's property will have a loss of approximately 87 N/ha/year which is much less than this.

Spreading of effluent over a larger area has a number of advantages:

- a) Maximise nutrient utilization.
- b) Limit runoff and potential adverse effects of this.
- c) Provide operational flexibility when soil moisture levels are high.

### Storage

The effluent system will consist of an in-ground storage pond with an operational storage capacity of 930m<sup>3</sup>. This volume equates to around 60 days of effluent storage for 306 cows at 50 litres/cow/day. This calculation has included provisions for the use of a concrete pad and milking shed yard areas to be used as a stand-off/feeding area if needed. This exceeds the Council's Best Practise Guidelines for low rate irrigation systems and is consistent with the computations of the Dairy Effluent Storage Pond Calculator.

The proposed system incorporates both low rate irrigation and substantial deferred storage to ensure that irrigation only occurs when soil moisture deficit exists. This combination should result in little adverse effect on the environment.

### Separation Distances to Sensitive Environments

Buffer zones have been proposed in accordance with the standards and terms of Rule 50 of the RWPS. There are no other sensitive receiving environments that require any further separation measures to be implemented at this location.

### Cumulative Effects

The discharge activity should not cause point source contamination of nutrients to surface waterbodies. The effluent discharge is to land, and buffer zones have been proposed to mitigate nutrient runoff from the disposal area. Effluent application is to be applied using low rate pods which will apply effluent at a rate of 2mm/hour. Maximum application rates have been proposed that are at a level that should mitigate nutrient losses through the soil profile into the underlying groundwater. A report regarding water quality and the receiving environments is attached as Attachment D.

When viewed in isolation, the nutrient losses are not considered excessive for a Southland Dairy Farm and the land practices proposed as part of the CEMP seek to mitigate the effects of non-point source discharges from dairying. The Waituna catchment has water quality issues, increased intensive land uses

within the catchment may result in cumulative effects and contribute further to water quality issues. Nutrient budgets have been completed to allow the comparison of the existing activity and the proposed dairy conversion. From these nutrient budgets it can be seen that the change in land use from the existing land use reduces nitrogen losses and increases phosphorus losses. On an individual basis the proposed increase in phosphorus losses within the Waituna Catchment is argued to be unmeasurable. However, it is important to recognise that the Catchment is currently suffering from water quality issues associated with nutrient losses. Even if the applicant's losses are considered to be very minor in scale as a cumulative effect it will be adding to the current water quality issue. The applicant proposes to undertake the following mitigation measures into the proposed farming system to reduce nutrient losses are as follows:

- Buffer zones will be observed from open waterways and groundwater bores on the property where contamination may arise as a result of effluent discharge to land.
- The applicant has proposed to adapt a concrete area which can be used in conjunction with the milking shed yard area for standing stock off paddocks as well as feeding stock. These areas will be used when soil conditions are too wet. Majority of stock are to be wintered off the property, as this is the time when phosphorus losses are at its greatest, with approximately 29% of the herd remaining on the property for the months of June and July. Effluent will be applied at a low rate and application depth to avoid losses to groundwater.
- Application of FDE will be delayed until soil moisture conditions are suitable and does not occur when the risk of surface runoff is elevated (i.e. during rainfall events).
- Effluent application will not occur on soils that are at or above field capacity.
- Laneways will be constructed and managed to ensure that a camber is present to allow runoff into vegetative areas;
- Stock crossing over waterways will have nibbed walls along the sides and runoff will be directed towards vegetative areas; and
- Swales that run into the creek will have fencing and a wider buffer zone to provide an additional filter. This was discussed with the Environment Southland Land Sustainability Officer, Katrina Robertson.

Additionally, it is important to note that the applicant has fenced the waterway that flows through the property and undertaken extensive riparian planting. Preventing stock access to waterways prevents treading which can destabilise banks and contribute to phosphorus loads. The planting of the riparian margins further aid to stabilising banks and acts as a buffer for potential runoff into the streams.

The property is located in the Waihopai Groundwater Zone. Within this zone nitrate can accumulate relatively quickly within the underlying unconfined aquifer. As the proposed activity will reduce N loss, the environmental effect represents a beneficial change in respect of the permitted baseline.

The soil versatility ranking indicates that the main soil type on the property does not have elevated risks associated with intensive grazing.

The proposed management practices further outlined in the CEMP (i.e., fencing, riparian planting, installation of laneways etc) will ensure the proposed dairy conversion should not result in more than minor adverse effects on the environment.

Further effluent discharge within the Waituna catchment poses a threat to water quality due to the current sensitivities associated with the catchment. The proposed management practices and suitability of the property to dairying reduces the potential cumulative effects of this activity.

#### Monitoring

Water quality monitoring will be undertaken by Council's monitoring team who will sample water quality from a waterway that traverses the effluent disposal area. This sampling will occur upstream and downstream locations to detect any effects on water quality from effluent discharge. Additionally, background water sampling will be completed by the applicant prior to the discharge of effluent on the property which will provide a baseline for the property. Baseline samples will be undertaken by the applicant before effluent is discharged to land.

### **5.3 Conversion Environmental Management Plan (CEMP)**

The potential adverse effects and risks from new conversions are required to be addressed by the applicant by adopting a management plan approach. This approach involves the implementation of a CEMP and a Nutrient Management Plan. The CEMP aims to identify the specific risks of new dairy farming on the subject property and measures to address those risks including stocking rates, wet weather contingency plans, exclusion of stock from waterways and riparian planting. The Nutrient Management Plan includes a nutrient budget which describes all of the sources of nutrient on the property and how they will be managed in an overall system. Examples of nutrient sources include discharges from dairy effluent systems, animal discharges and atmospheric nitrogen fixation.

As discussed previously soil versatility rating of the applicant's property was assessed by Council and given a rating of 10 (see Table 2 above) which requires a Category 1 Farm Plan to be prepared that includes standard farm management practices plus any site specific standards.

A more comprehensive CEMP has been prepared for this property because of the sensitivity of the catchment. The CEMP, in combination with the Nutrient Management Plan, details nutrient management practices to be implemented on farm. The CEMP also sets out Effluent Management strategies. The strategies go beyond accepted best practice standards. The CEMP incorporating the Nutrient Management Plan and Effluent Management Plan is attached as Attachment E.

### **5.4 Effects of Water Permit**

The applicant wishes to apply to take 36,720 litres per day of groundwater for shed and stock water.

The proposed abstraction of groundwater is considered to have no more than a minor effect on aquifer storage volumes, existing bore or well yields, river and stream flows, wetland and water lake levels and groundwater quality.

The volume and rate of take is relatively low and there are no bores located in the vicinity of the bore from which water is to be taken. An existing bore and new bore, to be constructed, will be used to abstract groundwater, approximate location are shown on the Farm Map attached as Attachment B.

The volume of water to be abstracted has been calculated at 50 litres per day for shed wash water in accordance with Environment Southland recommendations. It is noted for completeness that a standard volume of 70 litres per cow per day for stock water drinking water will also be abstracted. The volume of water to be abstracted is considered to be efficient and in line with industry best practice. Strategies for achieving optimal water use efficiency are set out in the Conversion Environmental Management Plan attached as Attachment E.

Section 4 of the Resource Management (Measuring and Reporting of water takes) Act 2010 notes that the regulations only apply to water takes greater than 5 litres per second. However, it appears that Environment Southland require the monitoring of all water takes as standard practice, and the take will be monitored in accordance with Environment Southland's Standards.

The Environment Southland factsheet on aquifer pump tests indicates that takes less than 230m<sup>3</sup> do not require an aquifer pump test.

A baseline water quality test taken at the commencement of consent followed by annual monitoring of the bore is considered to be appropriate to monitor water quality in the bore. The establishment of a baseline reading will enable any impacts on groundwater quality to be measurable.

Overall the proposed water abstraction will have effects that are no more than minor and the use of the water is considered to be efficient.

### **5.5 Effects of Pond Construction**

The construction of the effluent pond is to be overseen by RDAgritech Limited who also undertook the design of the pond. The effects associated with the installation of the pond are considered to be less than minor as a result of the scale and duration of the proposed works.

### **5.6 Effects of Groundwater Bore**

The proposed bore is to be constructed for the purpose of abstracting groundwater for shed and stock water. The bore is to be used in conjunction with an existing bore located on the property. Overall, the construction of the subject bore is considered to be less than minor.

## **6. Statutory Considerations**

Section 104 of the RMA sets out the statutory matters to be considered when assessing an application for resource consent. Those matters which should be considered for these applications are discussed in the following sections.

### **6.1 Section 104 (1) of the RMA**

#### **6.1.1 Part 2 of the RMA**

The proposals are consistent with the purpose and principles of the RMA, as outlined in Section 5. The proposed activities will have no more than minor effects on the abilities of waterways to meet the



reasonably foreseeable needs of future generations, or on the life-supporting capacity of waterways or any ecosystems associated with them. Assessment of the activities demonstrates that adverse effects will be avoided, remedied or mitigated.

There are no matters of national importance that may be affected by the proposed activities under Section 6 of the RMA. The applications are also consistent with the requirements of Section 7 of the RMA, and particular regard has been given to the maintenance and enhancement of the quality of the environment and the efficient use and development of natural and physical resources. With regard to Section 8 of the RMA, the proposed activities are not inconsistent with the principles of the Treaty of Waitangi.

Overall, the applications are considered to be consistent with Part 2 of the RMA, given the proposed avoidance, remediation and mitigation measures.

### **6.1.2 Environmental Effects on the Environment**

The actual and potential environmental effects of the proposed activities were considered in Section 5 of this report. Given the nature of the activities, any adverse environmental effects should be avoided, remedied or mitigated.

### **6.1.3 Notional Environmental Standards and Policies**

#### National Policy Statement for Freshwater 2014

The National Policy Statement for Freshwater 2014 (NPS) sets out both water quantity and quality objectives as well as objectives regarding integrated management and provision of reasonable opportunity for Iwi and hapu involvement in overall freshwater management.

The objectives and policies of the National Policy Statement for Freshwater Management (NPSFM) that are relevant to the applications are:

- Objectives A1, A2, B3, B4, C1 and D1;
- Policies A2, A3, A4, B5, B7, C1 and D1.

With regard to Policies A3 and A4, the Council has set objectives and limits for freshwater under the Regional Water Plan. The discharge in this instance is to land, and the parameters associated with the discharge will avoid or minimise effects on water quality.

Policy C1 requires integrated management of freshwater and land use. The land use practices as proposed in the CEMP gives effect to this policy.

Consideration of Te Tangi a Taurira and existing agreements with Te Ao Marama Inc address Objective D1 and Policy D1.

Policy A4 has been inserted in the RWPS and further consideration is given.

#### Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007

Regulations 6, 7 and 8 of the Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 (NES) apply to water and discharge permits issued by Regional Councils. The discharge is not in the vicinity/upstream of a registered drinking-water supply.

The discharge is not directly to water and it is accepted that a 100 m buffer zone from potable water abstraction points will apply. This buffer distance was developed with involvement of the public health authority to avoid effects on drinking water supplies. Overall, the proposals offer sufficient mitigating factors that they avoid affecting any registered drinking water supplies that provide 501 or more people with drinking water for 60 or more calendar days each year. Furthermore, the emergency provisions of the NES need not apply as the effects of the activity will not be significantly adverse (Regulations 11 and 12).

#### **6.1.4 Plans and Policies**

The operative Southland Regional Policy Statement 1997 (RPS1997), proposed Southland Regional Policy Statement 2012 (RPS2012) and RWPS are the planning documents which are relevant to the proposal.

The relevant provisions of these plans given regard to as follows:

##### Regional Policy Statement

The Southland Regional Policy Statement (SRPS) became operative in December 1997. A Proposed Southland Regional Policy Statement (PSRPS) to replace the SRPS was publicly notified on 19 May 2012. Submissions from this initial notification closed on 18 July 2012. A period for further submissions closed 9 April 2013.

The following gives regard to the relevant matters of the SRPS and, while matters as contained in the PSRPS are not operative, they have some legal effect and for this reason have been given regard to also.

(MANA WHENUA PERSPECTIVE)

*SRPS Objectives 1.1, 1.2, 1.4, 4.5, 5.4 and 8.5; Policies 4.6, 5.8 and 8.4*

*PSRPS Objectives TW.2, TW.3 and TW.4; Policies TW.1, TW.3 and TW.4*

Recognition of the relationship of mana whenua with their ancestral lands, water sites, waahi tapu and other taonga has been provided for, the extent of which has been determined largely by the direction set in the Ngai Tahu ki Murihiku Natural Resource and Environmental Management Plan, Te Tangi a Taurira (2008).

(WATER QUALITY)

*SRPS Objectives 5.1, 5.2, 5.3 and 5.4; Policies 5.1, 5.4, 5.5, 5.6*

*PSRPS Objectives WQUAL.1, WQUAL.2; Policies WQUAL.1, WQUAL.2, WQUAL.3, WQUAL.5, WQUAL.6, WQUAL.7, WQUAL.8.*

The proportions of the resources to be used or developed are efficient and in keeping with the primary productive nature of the area.

A precautionary approach is not a 'no-risk' approach as this is not the intention of the RMA (Aquamarine Limited v Southland Regional Council C126/97 at 145). There is no plausible evidence that the activities will have an irreversible effect on the environment as the parameters for each activity have been formulated in accordance with sustainable and best management practices. Furthermore, the actual or potential effects of the activities are capable of scientific measurement so in this instance application of a

'precautionary approach' would be inconsistent with the contemporary RMA setting (Sea-Tow v Auckland Regional Council A066/06 at [462]).

Overall, the proposed activities are not contrary to the relevant objectives and policies of the RPS.

(LAND)

*SRPS Objectives 8.1, 8.2 and 8.3; Policies 8.1, 8.2, 8.3 and 8.5*

*PSRPS Objectives RURAL.1; Policies RURAL.5*

The application of FDE is via a low-rate system and will continue to be managed according to specific application depths and return intervals. The proposed conversion has been carefully assessed, professional advice has been sought on a range of issues, and there is an understanding that on-going monitoring and adaptive management will be required to manage this property on a sustainable basis. This is considered to be particularly consistent with Objective RURAL.1 and Policy RURAL.5 of the PSRPS.

## **6.2 Other Matters**

### *Te Tangi a Tauira*

*Te Tangi a Tauira* is the Iwi Environmental Management Plan for the Murihiku area. This plan replaces *Te Whakatau Kaupapa O Murihiku* which is recognised in Policy 1.2 of the RPS.

The application is not contrary to the relevant policies of *Te Tangi a Tauira*, particularly as;

- Deferred application of FDE is provided for;
- Nutrient loading and stocking rates will be within industry best practice limits;
- The system and management practices are considered appropriate for the risks associated with the receiving environment;

Consultation has been initiated with Nagai Tahu and Te Ao Marama Inc.

With regard to Policies 3.5.14.17 and 3.5.1.17, the consent periods proposed are less than 25 years.

## **6.3 Section 105 of the RMA**

In addition to the matters in Section 104(1) of the RMA, a consent authority must have regard to following matters as specified in Section 105 of the RMA if an application is for a discharge permit:

- (a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
- (b) the applicant's reasons for the proposed choice; and
- (c) any possible alternative methods of discharge, including discharge into any other receiving environment.

The nature of the discharge is an organic product that when applied to soils in an appropriate manner can act as a soil conditioner. The sensitivity of the receiving environments have been accounted for when deciding on the application method, rate and scale. Furthermore, the receiving air environment is not particularly sensitive considering this activity is in keeping with the rural nature of the area. The applicant has carefully considered the sustainability of the activity in this locality and therefore has chosen the infrastructure and application areas in a manner that is consistent or better than best practice guidelines

and/or standards. Discharging to land if conducted appropriately enables the reuse of a waste product as a soil conditioner and discharging FDE to an alternative receiving environment (i.e., surface water or tinkered off-site) is considered unsustainable. The method of discharge is of a high quality specification.

## **7. Conclusions**

Hank and Sandra Schrader, on behalf of Schrader Mains Limited, propose to convert their property at Morton Mains to new dairy farming. In order to facilitate this, a number of resource consents are required to be obtained from Environment Southland including a Land Use Consent for New Dairy Farming, a Water Permit, and Discharge Permit to discharge Farm Dairy Effluent. The application includes an assessment of effects (AEE) and a Conversion Environmental Management Plan as is required by Environment Southland and the effects of the activities are considered to be no more than minor or less than minor.

**ATTACHMENT A – Certificate of Titles**



**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



**Search Copy**

  
R.W. Muir  
Registrar-General  
of Land

**Identifier** SL9C/678  
**Land Registration District** Southland  
**Date Issued** 20 August 1990

**Prior References**

SLA2/68                      SLB3/1376                      SLB3/1456

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**Estate** Fee Simple  
**Area** 77.2697 hectares more or less  
**Legal Description** Section 7 and Section 49 Block II  
Oteramika Hundred and Lot 1 Deposited  
Plan 12478

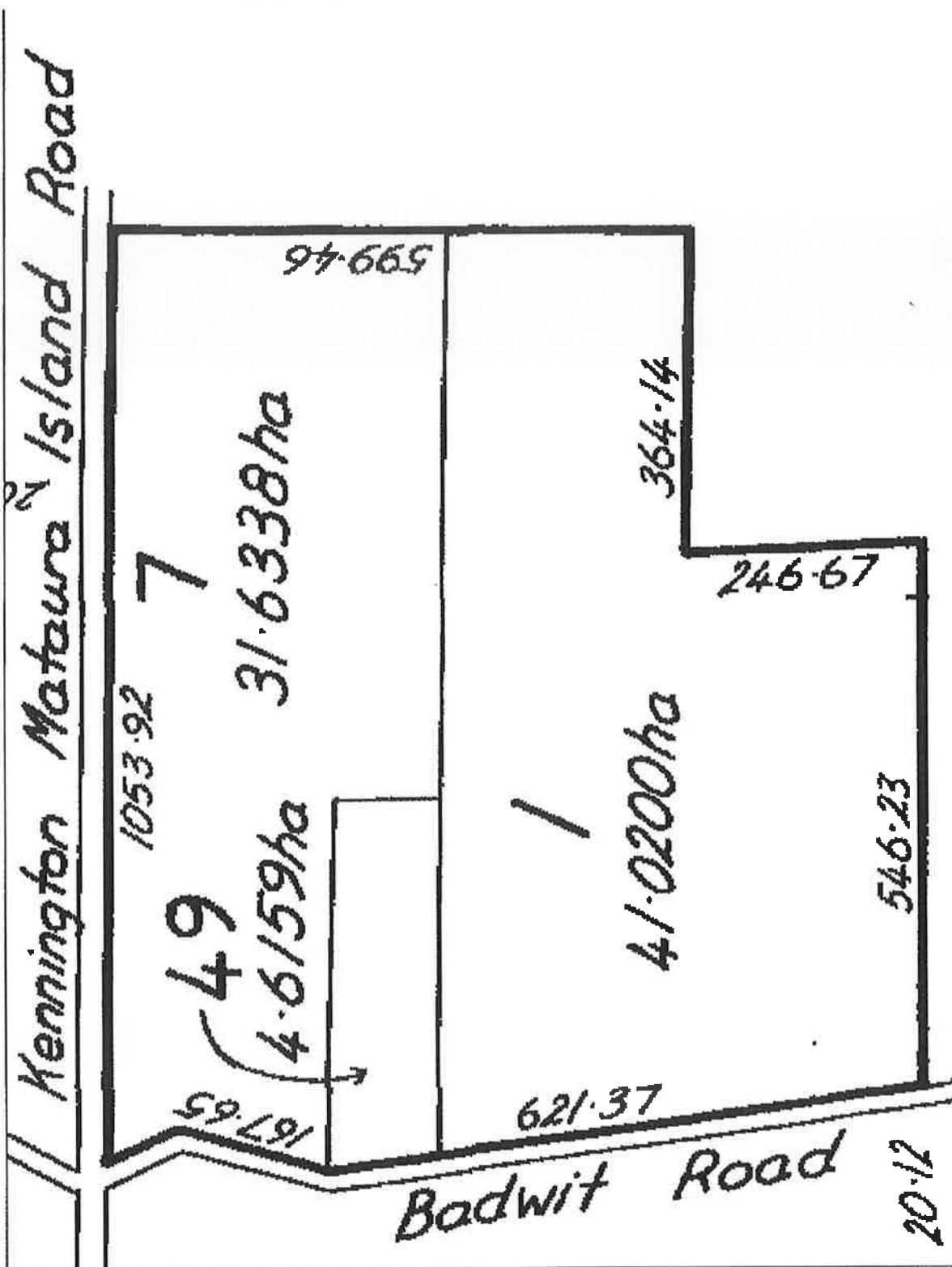
**Proprietors**

Schrader Mains Limited

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**Interests**

Subject to Section 308 (4) (5) Local Government Act 1974  
8887614.3 Mortgage to Rabobank New Zealand Limited - 1.11.2011 at 11:54 am





**COMPUTER FREEHOLD REGISTER  
UNDER LAND TRANSFER ACT 1952**



**Search Copy**

  
R.W. Muir  
Registrar-General  
of Land

**Identifier** SL9C/679  
**Land Registration District** Southland  
**Date Issued** 20 August 1990

**Prior References**  
SLB3/1456

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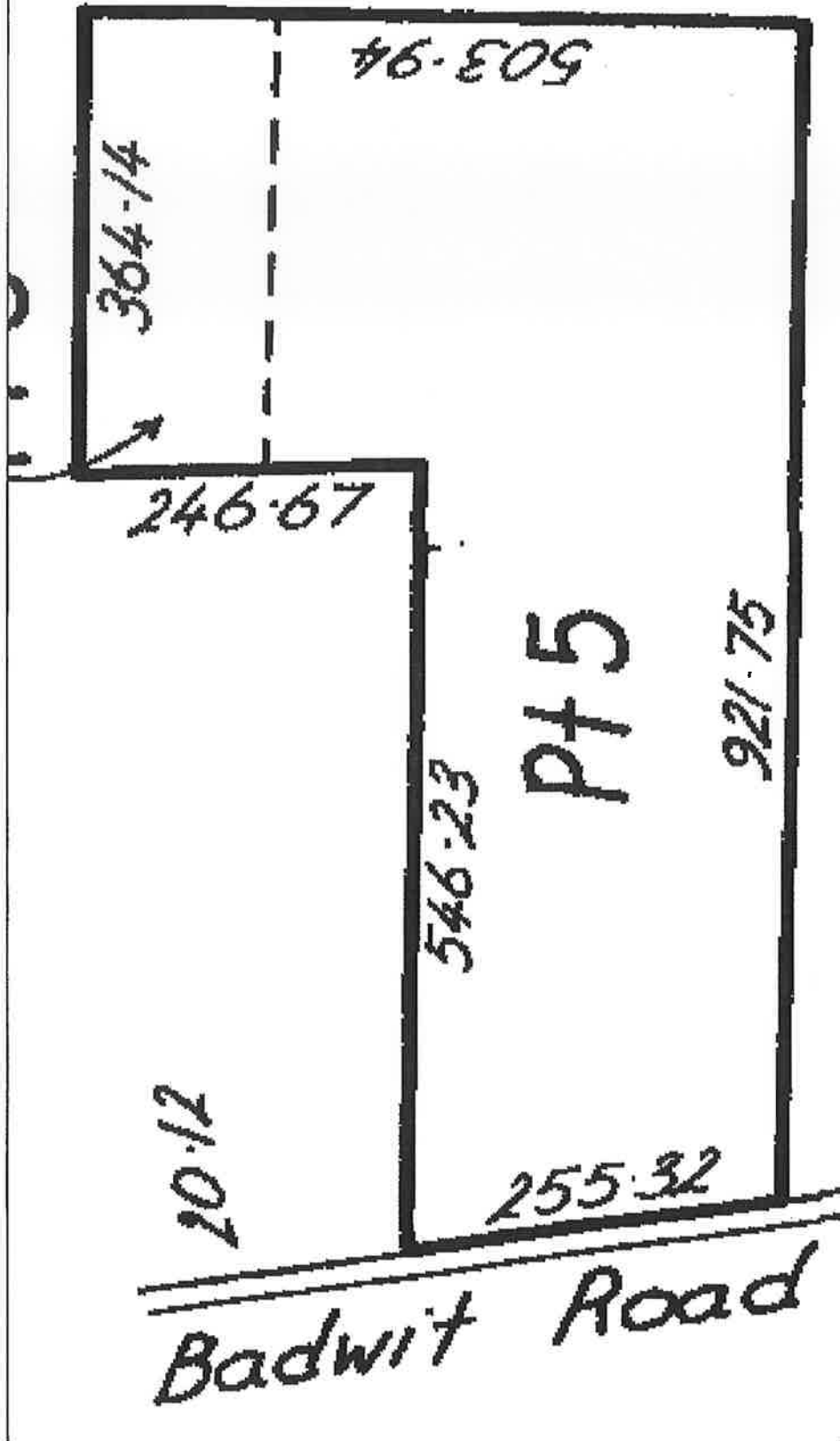
<b>Estate</b>	Fee Simple
<b>Area</b>	33.4876 hectares more or less
<b>Legal Description</b>	Part Section 5-6 Block II Oteramika Hundred

**Proprietors**  
Schrader Mains Limited

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**Interests**  
8755146.7 Mortgage to Rabobank New Zealand Limited - 12.5.2011 at 3:10 pm







## **ATTACHMENT B – Farm Plan**



**LEGEND**

 EFFLUENT DISPERSAL AREA (93.00Ha)

 PROPERTY BOUNDARY

Note. Buffers Zones of 20m apply to all Waterways and Boundaries  
 Buffer Zones of 100m apply to Water Bores and 200m from Residential Dwellings



**CLIENT**  
 100 T. Cowick  
 2 M. N. S. Road  
 7084 - 162, Gairloch 9792  
 New Zealand  
 08 888 5150, 08 888 9111

**CLIENT**  
 SCHRADER

**NOTES**  
 All dimensions shown are in metres unless otherwise stated.  
 1:5000 scale drawings are for reference only.  
 1:2500 scale drawings are for reference only.  
 1:1000 scale drawings are for reference only.  
 1:500 scale drawings are for reference only.  
 1:250 scale drawings are for reference only.  
 1:100 scale drawings are for reference only.  
 1:50 scale drawings are for reference only.  
 1:25 scale drawings are for reference only.  
 1:10 scale drawings are for reference only.  
 1:5 scale drawings are for reference only.  
 1:1 scale drawings are for reference only.

**EFFLUENT DISPERSAL AREA**  
**RIMU SEAWARD DOWNS ROAD, WAITUNA**

Rev.	Desc.	Revised Details	By	Checked	Signed	Date	Job No.	Drawing No.
							S14303	01
							Scale	1:2500 @ A1
							Scale	1:5000 @ A3
							Drawn by	
							Base	NZTM 2000 & AHSI
							Rev.	-

S:\14303 - Schraders\01\_15\_S14303\_01\_A1\_EF.dwg Plot Date: 20/06/2016



**LEGEND**  
 — PROPERTY BOUNDARY  
 — TILES/NOVAFLOW  
 — WATERWAYS  
 NOTE: PROPERTY BOUNDARIES SOURCED FROM DCDB AND ARE NOT SURVEY ACCURATE

L:\S14303 - Somerbyr\DCDB\0115 S14303\_01\_A Tile Drains.dwg Plotting: 20/06/2015



**LANDPRO**  
 Kaitiaki Road, Waituna  
 PO Box 100, Waituna 5113  
 04-577-1000  
 www.landpro.co.nz

**SCHRADER MAINS LTD**  
 277 New Zealand Road, Waituna  
 PO Box 100, Waituna 5113  
 04-577-1000  
 www.schrader.co.nz

**TILE DRAIN MAP**  
 RIMU SEAWARD DOWNS ROAD, WAITUNA

Rev	Date	Revision Details	By	Checked	Signed	Date	Job No	Drawing No
							S14303	01
							Scale	1:2500 @ A1
								1:5000 @ A3
							Project Client	
							NZTM 2000	