



Recommendation and decision on notification of resource consent application(s) under sections 95-95G of the Resource Management Act 1991 (RMA)

The application

Particulars

Applicant:	South Pro Maitland Limited
Consents sought:	Dairy effluent discharge and land use consent to use land for farming
Application reference:	APP-20181917
Site address or location:	131 Garden Gully Road, Gore
New consent(s) for new activity(ies) (s88)	<input checked="" type="checkbox"/>
New consent(s) for existing activity(ies) (s88)	<input checked="" type="checkbox"/>
Change to conditions of existing consent(s) (s127)	<input type="checkbox"/>
Activity status	Non Complying

The key issues to be considered for the decision on notification relate to the land use consent, specifically in relation to Policies 10, 16 and 39 of the proposed Southland Water and Land Plan. Specifically, we must consider whether effects resulting from the proposed expansion, by way of increased cow numbers will be more than minor, including in relation to the effect of modelled increased P losses from the proposed use of land for farming.

Recommendation and decision

Officer's recommendation

I recommend the application is processed with public notification. This is because:

- When considering the activity through the lens of Policy 39, especially in relation to Cumulative Effects it is anticipated that the effects will be more than minor especially when considering the off-site effects, noting that the off-site effects are all in the same parent catchment;
- The inconsistencies within the overseer budget in relation to the discharge area, and the level of nutrient inputs proposed to be put on the "non-effluent" block, especially when combined with the uncertainties of the overseer model;
- The topography of the land when considering the contaminant pathways and the proposed activities to occur on the site; and
- It is hard to quantify the effectiveness of the mitigations provided, and in relation to Policy 16, where the adverse effects of a farming activity are not avoided or mitigated, direction is to generally not grant these consents.

10.1 The application be processed non-notified

10.2 Public notification is required/recommended

10.3 The application be placed on hold while the applicant tries to obtain written approvals from the affected persons

10.4 Limited notification is required. Persons to be served notice are those listed in 8.2



Alex Erceg
Consents Officer

Date: 10 April 2019

Decision under Delegated Authority

11.1 I agree with the recommendation

11.2 The application will be processed non-notified

11.3 The application will be publicly notified

11.4 The application shall be placed on hold while the applicant tries to obtain written approvals from the affected persons

11.5 The application will be limited notified. The parties to be served notice are those listed in section 8.2

This decision is made under delegated authority by:



Michael Durand
Consents Manager

Date: 11 April 2019



Processing Officer's Notification Assessment

The Proposal

The applicant currently holds a discharge permit (AUTH-20146428) which permits the discharge of agricultural effluent from 550 cows. This was granted on 30 March 2016. Prior to this the applicant held discharge a discharge permit (AUTH-202666) which allowed the discharge of agricultural effluent from up to 599 cows. The applicant had never intended to reduce the cow numbers from 599 to 550, and as such have applied for a discharge permit that would authorise the discharge of agricultural effluent from 600 cows.

The proposal includes;

1. The discharge of agricultural effluent from milking up to 600 cows twice per day;
2. The discharge via a low rate larral system;
3. The discharge via high rate slurry tanker ad umbilical system; and
4. The use of land for farming where cow numbers are increasing above what was authorised in a discharge permit at 3 June 2016.

FDE discharge permit	
Relevant rule(s)	<ul style="list-style-type: none"> • Non Complying Activity under Rule 50(d) of the <u>Regional Water Plan</u> • Discretionary Activity under Rule 35(c) of the <u>proposed Southland Water and Land Plan</u>
Cow numbers	600
Stocking rate (cows/ha)	3.1
Winter milking proposed?	No
Other sources of effluent?	No
Effluent disposal area (ha)	180
Irrigation method	Umbilical, slurry tanker and Larall system
Application rate and depth	Umbilical/slurry = 5mm depth Larall= 10mm rate and depth
Storage available (m ³)	2,412
Massey pond calculator 90% storage requirement (m ³)	1,946

Land Use Consent	
Relevant rule(s)	<ul style="list-style-type: none"> • Restricted Discretionary Activity under Rule 20(d) of the <u>proposed Southland Water and Land Plan</u>
Cow numbers	Increase from 550 to 600
Stocking rate (cows/ha)	3.1
Milking Platform	No Increase

Overall the application is a Non-Complying Activity.

Effluent Storage

The effluent storage system consists of a concrete sump, clay lined weeping wall and synthetically lined effluent pond.

A visual assessment was carried out on the ancillary structures and demonstrated that the structures had no cracks, holes or defects that would allow effluent to escape from the facility. The pond and the weeping wall and sludge beds have also been drop tested. The structures passed the pond drop tests and the tests were carried out in line with Appendix P of the proposed Southland Water and Land Plan.

It is noted that the visual assessments undertaken were not adequate as the structures were not completely empty and the entire structure could not be fully inspected, however the pond drop tests have shown the structures were not leaking beyond the authorised incidental discharge.

The ongoing maintenance and use of the existing agricultural effluent storage, treatment and ancillary structures are in accordance with the Permitted Activity criteria of Rule 32D of the proposed Southland Water and Land Plan.

3.3 Reasons adverse effects on the environment are less than minor / minor / more than minor

The existing environment

The site is an existing dairy farm where the discharge of effluent from up to 550 cows is authorised by a resource consent. The site sits on the boundary between Southland and Otago.

The applicant has described the existing environment in detail in the application. This description is not in dispute and is therefore adopted. The following sections will briefly summarise the existing environment and detail important features of the existing environment.

Soils and Physiographic Zones

Soils	Soil Type	Vulnerability Factors		
		Structural Compaction	Nutrient Leaching	Waterlogging
	Benio	Moderate	Severe	Slight
	Chatton	Moderate	Moderate	Slight
	Chatton + Waikoikoi	Moderate	Moderate	Slight
	Waikoikoi	Very Severe	Slight	Severe
	Jacobstown + Fleming	Severe	Slight	Severe
Physiographic Zones	Physiographic Zone	Variant Type		
		No Variant	Overland Flow	Artificial Drainage
	Oxidising		√	
	Gleyed	√	√	
FDE Land Classification (Discharge Area)	Category A – Artificial Drainage or Coarse Soils Structure Category C – Sloping Land			

The property sits on several soils types where there is a slight to severe risk of nutrient leaching. A large portion of the property has soil types where there is a slight to moderate risk of nutrient leaching. These areas overlap soil types where waterlogging is a severe risk, and where artificial drainage will be prevalent. The site sits on the oxidising physiographic zone. The oxidising physiographic zone is characterised by soil water and groundwater with high oxygen levels which

allows nitrogen to accumulate. The zone has an overland flow variant meaning the main contaminant pathway is overland flow which poses a risk to surface waterways. The oxidising zone also has a deep drainage contaminant pathway where the main risk is to groundwater. As mentioned there is a small portion of soils with severe risk to nutrient leaching, and this is located on the northern boundary of the property. The site also sits on the gleyed physiographic zone. The main contaminant pathway in this zone is artificial drainage, creating a risk to surface waterways. In the steeper areas, the gleyed zone has an overland flow variant. The gleyed zone has denitrifying potential, therefore there is a small risk to groundwater.

In summary the main contaminant pathways are artificial drainage and overland flow, posing the main risk to surface waterways. There is however still a small area where there is a risk posed to groundwater.

Groundwater

The site sits outside of mapped groundwater zones. There are three groundwater monitoring sites that are located approximately 5km away in North, West and South direction respectively. All three sites have nitrate levels classified as pristine/Pre-European. There is also a site 6km to the West where the nitrogen levels are classified as modern day background.

Surface Water

The property is located in the Mid Maitara surface water management zone and in the Maitara freshwater management unit. The property has a few small streams, and these flow into the Drowning Stream and subsequently the Waikaka Stream. The Waikaka Stream then flows into the Maitara River at Gore.

The closest SOE monitoring site is for the Waikaka Stream at Gore, which encompasses the entire Waikaka Stream and not just the East Branch where the site is located. The application describes water quality in the area as:

- The Waikaka Stream at Gore is in the E NOF band (worst 25% of like sites) for state, but is showing an overall improving trend in relation to E.Coli;
- The Waikaka Stream at Gore is in the A NOF band for Ammoniacal Nitrogen and B band for Total Oxidised Nitrogen for state and is showing a meaningful improvement in trend data;
- The Waikaka Stream at Gore is showing an improving trend for Phosphorus, but is still in the worst 25% of like sites for state;
- There has been no significant deterioration in water quality in the Maitara River; and
- Toetoes Estuary is showing signs of nutrient enrichment including sedimentation and eutrophication. However, it is still classified as being in good condition.

Registered Drinking Water Site

The Otikimera Drinking Water Site which supplies 101 to 500 people sits adjacent to the Maitara River more than 21km from the site.

Sensitive Surface Waterbodies

The Maitara River flows through the Toetoes and Awarua Plain at Fortrose Harbour Regionally Significant Wetlands. The Maitara also flows into Fortrose Harbour. These waterbodies show

evidence of land use impacts, with elevated levels of nutrients, sediment and algal blooms/slime at times. These are located at least 70km south of the property.

Off Site Locations

The applicant utilises third party graziers to winter graze dairy cows as well as to graze young stock. These locations are in Eastern Southland, as well as Otago. The sites within Otago are not considered as part of this application. The Southland sites largely all sit within areas within the Mataura River parent catchment, as well as the dairy platform itself.

Effects to be considered (Section 104(1)(a))

Consideration of the following effects is required:

- effects on water quality, including potential for contamination of groundwater and surface water, and effects on sources of human drinking water;
- cumulative effects;
- soil health; and
- odour.

Effects not in contention

The assessment of environmental effects provided with the application has provided an assessment of the following effects. The applicant has provided a number of good management practices and mitigations to mitigate the below effects, and they are not in dispute.

Effects on Ground Water

The soil types and physiographic zones located at the property indicate that effects on groundwater from the proposed activities will not be more than minor. The gleyed zone has denitrifying potential and the contaminant pathways on the property are overland flow and artificial drainage. The applicant has also proposed a number of good management practices such as deferred irrigation, only applying effluent when there is a soil moisture deficit and predominant using low rate irrigation. The applicant has provided application rates which match the level of risk. It is considered there is some risk to groundwater, however this is significant less than the risk to surface water for this location.

Odour

As long as the effluent is applied in accordance with the specified application rates and depths, and the buffers specified by recommended consent conditions are maintained, then there should little risk of adverse effects from odour and spray drift on surrounding land owners and occupiers.

Effluent storage facilities can cause problems with odour, however, the closest dwelling on another property is located well over 500 metres from the effluent storage facility and the facility is located more than 500 metres from the property boundary. A recommended condition of consent requires that there are no significant adverse effects on surrounding landowners and occupiers as a result of odour from the storage facility.

Issues

Policy direction in the proposed Southland Water and Land Plan directs me to consider that water quality is being maintained or improved. An increase in cow numbers results in an increase in contaminants entering the immediate environment. How these contaminants are effectively managed will result in the level of contaminant loss beyond the landholding and therefore entering surface waterbodies.

The following section will address the issues relating to the proposed activities and the adverse effects.

Overseer Modelling

Modelling nutrient losses through Overseer is a helpful tool that aims to quantify the nutrient losses from a farming activity. A model however, comes with a level of uncertainties, and when modelling a proposed a scenario is based on proposed inputs and assumptions. Overseer, although it quantifies the losses, this does not necessarily correlate to what the actual environmental effect of those losses will be, nor does it actually identify what those effects will be¹. Also Overseer assumes that good management practices are being undertaken on farm, and therefore mitigation measures that go beyond this must be employed in order to mitigate the effects of the proposed losses.

Overseer only models nutrient losses and not sediment or microbial loss. The applicant has used P loss as a proxy for sediment and microbial loss. Although, they all share similar contaminant loss pathways, I would be hesitant to accept that the same level of loss for all contaminants occurs.

The applicant has proposed a discharge area of 180 hectares, however they have only stated that 68 hectares will receive effluent in the nutrient budgets. If more than that 68 hectares was to receive effluent then the nutrient losses may change, especially as the areas identified as non-effluent blocks are proposed to receive greater fertiliser inputs and solid effluent will also be discharged to these areas.

¹ Overseer and regulatory oversight; Models, uncertainty and cleaning up our waterways, parliamentary Commissioner for The Environment (December 2018).

Increased losses – issue

When assessing the effects for an expansion application I am required to consider the total losses over the entire landholding, but to also have regard to specific areas within the landholding where the activity may result in an increase in effects from one location. This approach is taken to ensure all effects are being considered from a proposed activity, including cumulative effects. It is important to assess if mitigations offered by the applicant are specific for the area where losses will be more likely to occur. By choosing to expand the Applicant is required to assess the effect of all losses from their farming activity and describe what that will mean for the receiving environment.

The landholding is located on the Gleyed and Oxidising (overland flow variant) Physiographic Zones. In these zones the primary pathways for contaminants to move through the environment is via artificial drainage and overland flow. This means that the main risk to the receiving environment is to surface water quality via event driven losses of contaminants to waterways resulting in the mobilisation of sediment which may result in increased levels of P and microbial's in the waterways. There is some risk to groundwater via deep drainage on the Oxidising Physiographic Zone, especially when it is dry, however the risk to groundwater over the property is low. This is accompanied with the denitrifying potential of the gleyed physiographic zone.

The site is of rolling topography and has tile drains so this supports the classification of the site and the risks to water quality. The location of these artificial drains have been mapped and a tile drain map has been included in the application. The use of high rate irrigators especially, but even low rate stationary pods, on this type of landscape (Category C – Sloping Land) also has inherent risk, especially with the contaminant pathways on this property including overland flow.

The receiving environment for surface water is initially Drowning Creek, then the east branch of the Waikaka Stream, the Mataura River and eventually Toetoes Estuary. This includes the third party and young stock graziers which are also located in the Waikaka Stream, Mataura River and Toetoes Estuary catchments.

The applicant, although considering the existing environment of the off-site locations has not modelled the losses of these locations as the activities occurring there are in the control of the third party. However, these losses and the subsequent effects are to be considered as part of this application and are therefore unknown.

Increased losses – effects

The above gives an indication of the issue and where the site is located, the next step is to determine what the activity in that site means for the environment. The application includes an assessment of the likely adverse effects that may occur that as a result of the land use activity (before the use of mitigation measures). The significance of these effects results from the policy context and also the state of the receiving environment. Likely effects as a result of the land use are:

- Sediment (e.g. mud and silt) – accumulates on the bottom of rivers, lakes and estuaries. It is a problem because it can make the water murky, block fish gills, smother the habitat that macroinvertebrates and fish live in and promote slime algae growth. Sediment in streams can be generated from heavy rainfall on vulnerable soils, disturbance of the riverbed or bank by heavy machinery or stock or through direct discharges.
- Nutrients – particularly Nitrogen (N) and Phosphorus (P), which are needed by all plants to grow. The majority of nutrients come from stock urine/dung or fertiliser. However, too much N and/or P in our waterways causes problems with excess slime algae and aquatic plant growth.

- Bacteria (e.g. E.coli) – faecal bacteria including E.coli are an indication of potentially disease-causing organisms that can make humans and animals sick.

The assessment of environmental effects contains in-depth detail on the nutrient budgets for the landholding and explains that the overall N losses over the landholding will decrease under the proposal, however P was said to be increasing, however as mentioned it is accepted that P loss has been over exaggerated. Mitigations have been offered to address the increase of P.

The effectiveness of these mitigations has not however been addressed, and this would also be hard to quantify. The off-site losses are not managed by the applicant, and are also therefore hard to address as part of the proposed activity.

Soil health

The effluent disposal field as per the application is stated to be 180 hectares. This figure is more than the area needed to meet the minimum requirement of 4 hectares per 100 cows, which is calculated to achieve a maximum loading of 150 kg of nitrogen/hectare/year from effluent irrigation and more than the 8 hectares per 100 cows as recommended in the Best Practice Guidelines Booklet².

There are several different soils in the disposal area. The predominant risk for these soils types is artificial drainage and overland flow. The main risk factor for the property for the discharge of effluent is artificial drainage to surface waterways and overland flow to surface waterways.

The application details ways in which these effects will be mitigated through the use of good management practices such as deferred irrigation and only applying effluent when there is a soil moisture deficit.

Provided the effluent is applied at the appropriate rate and depth effluent can act as a fertiliser providing nutrients to aid pasture growth and therefore soil health and available nutrients should be maintained and enhanced.

The effects on soil health have not been considered however from intensive winter grazing activities. The soil types on-site have a moderate to very severe risk of structural compaction. Due to the topography of the property this is also of concern as structural compaction of soils can result in increased overland flow of contaminants which is already a major risk for this property. The applicant has also not adequately addressed what the actual adverse effects of winter grazing.

Topography

The property has some very steep topography, with the application stating there are areas in excess of a 26° slope. These areas are largely characterised as having the overland flow variant. The risk of run-off and overland flow increases as the slope increases, with certain soil types being at greater risk. The applicant has applied for the discharge area to cover the entire the property without identifying the suitability of the entire property for receiving effluent. The effects of grazing these steeper slopes, especially over the winter periods has also not been addressed.

Cumulative Effects

The entire farming activity occurs over multiple sub catchments, however all feed the same parent catchment (Mataura River). It is important to consider the cumulative effects of the activity.

² Farm Dairy Effluent, Best Practice Guidelines (2007), Environment Southland

Currently, the applicant's property has 550 milking cows (peak) of the 3,421 milking cows (16%) in the Waikaka Stream East Branch sub catchment where it is located. The water quality in the immediate receiving environment (Waikaka Stream) is degraded. The ToeToes estuary is showing signs of increased nutrients and sedimentation, however this is still labelled as being in good condition.

Contaminant losses to surface waterbodies can have ecological health implications, result in nuisance plant growth and lead to eutrophication. Diffuse, non-point discharges from agricultural land use is a major contributor to nutrient loadings in Southland³. It is difficult to quantify the contaminant load from a property and determine how much the site will contribute to the cumulative effects within the receiving environment.

The cumulative effects on the Maitara catchment will include the effects from the entire farming activity, including the intensive winter grazing, as currently the third party graziers are located in the Maitara parent catchment. The effects from the third party grazer has not been addressed, and although mitigations have been provided for the dairy farm site, it is hard to quantify the effectiveness of these.

Adverse effects that have been disregarded

N/A

Planning provisions (policies and objectives) relevant to adverse effects

Currently the Southland Regional Council is working under three regional plans, the operative Southland Water Plan, the Regional Effluent Land Application Plan and the proposed Southland Water and Land Plan (decisions version). Please note that I have only included the policies and objectives below that the proposal is not consistent with. There are other relevant policies that relate to this proposal but I have omitted them from this report as they do not relate to potential adverse effects.

There is clear policy direction in the pSWLP that water quality should be maintained and improved. This is particularly relevant to the land use component of the application. The main relevant policy is **Policy 16**, which requires that applications to intensify dairy farming are generally not granted where the adverse effects cannot be avoided or mitigated. **Policies 13** and **15A-C** require that land use is managed to maintain or improve water quality. **Policy 6** is specific to the Gleyed physiographic zones on the property and requires that good management practices are implemented to manage adverse effects on water quality from contaminants transported via artificial drainage and overland flow, and that Council have particular regard to contaminants transported via artificial drainage and overland flow. **Policy 10** is specific to the Oxidising Zone on site and is similar to **Policy 6** in its intent. However, direction is provided to decision makers that consents shall generally not be granted where contaminant losses will increase as a result of the proposed activity. **Policy 39** states that when considering any application for Resource Consent for the use of land for a farming activity, all adverse effects should be considered of the proposed activity on water quality, whether or not this Plan permits an activity with that effects.

³ Aqualinc, Assessment of form mitigation options and land use change on catchment nutrient contamination loads in the Southland region,2014

Conclusion: significance of adverse effects on the environment

The above policies have been used to inform and determine the level of adverse effects associated with the proposed activity, as the direction of the policies help establish what effects are acceptable and therefore whether the adverse effects of the proposed activities are less than minor, minor or more than minor.

When considering all effects of the proposed activity, I do not consider that the adverse effects will be less than minor, especially when considering the cumulative effects. The off-site effects have also not been adequately addressed therefore a full understanding as to the level of effects from the entire activity has not been gained.

Overall, I consider that adverse effects of the proposed activities on the environment will be more than minor.

Special circumstances and public notification

Do special circumstances exist in relation to the application that warrant the application being publicly notified?	<input type="checkbox"/> Yes	Application must be publicly notified.
	<input checked="" type="checkbox"/> No	

4.2 Reasons why special circumstances do or do not exist

N/A

Affected Parties and Limited Notification

Protected Customary Rights Group or Customary Marine Title group

Is the activity in the coastal environment, within an area where it may adversely affect a protected customary rights group(s) or a customary marine title group(s) (see s95G)?	<input type="checkbox"/> Yes	
	<input checked="" type="checkbox"/> No	
May the activity have adverse effects on a protected customary right carried out in accordance with the requirements of Part 3 of the Marine and Coastal Area (Takutai Moana) Act 2011?	<input type="checkbox"/> Yes	The customary rights group(s) is an affected customary rights group(s). Application must be limited notified on them.
	<input checked="" type="checkbox"/> No	

Statutory Acknowledgement Areas

Is the activity on or adjacent to, or may it affect, a statutory acknowledgement area?	<input type="checkbox"/> Yes	
	<input checked="" type="checkbox"/> No	
Are the adverse effects on Te Rūnanga o Ngāi Tahu minor or more than minor?	<input type="checkbox"/> Yes	

No

Reasons why adverse effects on Te Rūnanga o Ngāi Tahu are less than minor, minor or more than minor:

N/A

Is limited notification precluded?

Is each activity subject to a rule, NES or regulation that precludes limited notification? Yes

No

Are any people adversely affected?

Are the adverse effects on a person minor or more than minor (but not less than minor)? Yes

No

Note: In forming this opinion (a) to (c) apply:

- (a) We may disregard an adverse effect of the activity on the person if a rule or an NES permits an activity with that effect; and
- (b) We must, if the activity is a controlled activity or a restricted discretionary activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control or restricts discretion; and
- (c) Must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11.

Special Circumstances – Limited Notification

Are there special circumstances that warrant limited notification of any other persons? Yes

Application must be limited notified to those persons and any other affected persons. Go

No
