

# Dairy Green Ltd

Practical Engineering Solutions  
Consents, Effluent, Stock water, Irrigation  
Design through to Installation  
Irrigation NZ Accredited Designer

Stephen West  
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Dear Stephen,

## **APP 2017 1483, GJH and GI Amtink**

As requested I have enclosed an additional application for the discharge of fill material to the bed of a stream.

Also the original application has been edited to use the term "reclamation of the tributary" as requested.

### **Request For Additional Information**

#### **Management of newly filled areas.**

The placement of fill in the Higham Tributary (HT) bed will happen in an ordered way to create a soil profile not dissimilar to existing profiles along the HT margins. The topsoil will overlay subsoil comprising local material and material previously removed from the tributary, overlying filter gravel.

The disturbed area will be sown to new pasture and grazed judiciously particularly during pasture establishment. This will limit contaminant loadings and assist rapid pasture establishment. The subsoil placed over the filter gravel will have an inherently low contaminant loading and will act as a filter for contaminants that may leach below the topsoil.

Because the topsoil will have been disturbed during removal and placement as will the subsoil the roots of pasture plants can be expected to explore the soil profile very readily, more so than in a typical regrassing situation. This will help recover nutrients which will be used for growth. This will also help with the prevention of excess nutrient loss through the fill material.

The reclamation of the HT will allow refencing of the area into more suitable paddocks with a better layout which will facilitate improved grazing.

### **Assessment of cumulative effects of the proposed reclamation**

The HT is just one tributary of the Waituna Creek which itself is one creek of 3 major creeks that drain to the Waituna lagoon. They drain a catchment of approximately 20,000 ha.

Land development within the catchment has been ongoing, particularly during the 20<sup>th</sup> Century and especially since the advent of draglines and more recently hydraulic excavations. Initially development involved conversion of better and drier soils from native vegetation to pasture and as drainage improved the wetter soil types including wetland areas have been converted to improved species.

In the 1950's in response to government policies and to improve the drainage of more marginal areas many small tributaries and even parts of the main tributaries were straightened. The predominant land use was sheep and beef farming but since the late 1980's the prevalence of dairying has increased to now cover approx 35 % of the lagoon catchment.

The 57ha catchment of the HT above Drakes Hill Road has all been fully developed to improved pasture with the soils drained by subsurface drainage.

The effects of the development in the wider catchment have been to increase the flow of nutrients, sediment and bacteria to the Waituna Lagoon. There has also been the loss of indigenous vegetation to pasture.

There has been a loss of aquatic habitat and the degrading of habitat with the installation of subsurface drainage and the straightening of waterways to create better drainage channels.

The specific effects of reclaiming the bed of HT will be:

The loss of 800 m of low value aquatic habitat.

The loss of the grass dominant riparian vegetation along the HT margins.

A reduction in sediment loads reaching the Waituna Creek and therefore Waituna Lagoon.

The removal of several critical source areas and their replacement with improved pasture. There is likely to be a reduction in nutrient losses, primarily from critical source areas, to the tributary.

There will be no change in the drainage effect of the HT.

The wider effects of the proposed reclamation will be a direct small loss of habitat. Within the 20,000 ha Waituna Lagoon Catchment Environment Southland manages the maintenance of the Waituna Creek which involves a length of waterway of 76,361 meters. 800 m is 1 % of this distance.

The effect of reclaiming the bed of the HT also needs to consider the mitigation proposed within the catchment. Apart from the 800m length of tributary there is a further approx 2,200m length of waterway within the property, ie the balance of the HT and the Waituna Creek. Currently the riparian margins are grass based, but in places flax and woody weeds such as gorse and broom are establishing.

The riparian zone will be enhanced by widening in some areas, refencing and planting specific riparian plants. Because both waterways are mechanically cleaned, planting on both sides of the waterway is not practical. Planting on the "northern side" of each water way will improve shading and contribute to the aquatic habitat for invertebrates and fish through the contribution of leaf and woody material. It will also aid bank stabilisation.

A Riparian Management Plan has been prepared to cover the full length of the HT that is not proposed to be reclaimed and the full length of the Waituna Creek that runs through the property. In total 10 planting zones have been identified as well as three critical source areas, which could be suitable for the development of a nitrogen filter in the future. Currently the applicants are committed to implementing the planting programme. They will consider installing nitrogen filters in the future.

To implement the planting plan will require re-fencing to ensure a 4.5 m riparian width and the planting of 5,645 plants. Included are 1,840 *Carex Secta*, 450 swamp flax, 225 Black Matipo, 300 toetoe, with the balance made up of Chatham Is Akeake, Manuka, Cabbage trees and broad leaf. The planting plan will be modified to take into account the comments made by the Land Sustainability team.

## Pipe Size

The decision as to which pipe diameter to select for drainage purposes is based on several factors including rainfall intensity, catchment characteristics, the gradient available, the land use and economics.

The Higham Tributary catchment is characterised by relatively flat land, good soil depth and a combination of sheep and beef and dairy farming.

For sheep and beef farms a typical rainfall coefficient is 9 mm depth over 24 hours for pipe design. For dairy farms this is typically increased to 12 mm per 24 hours. This is based on all the rainfall having to be drained through the drainage pipes.

It is generally not economic to cater for higher rainfall intensities.

In practice the rainfall catered for is greater than any given 24 hour rain event by more than 30 %. Not all rainfall flows to a subsurface drainage system, even for a soil at field capacity, as some drainage water will flow below the subsurface drain depth.

Secondly the soil has the effect of delaying the flow of soil water to the drainage system. This is clearly demonstrated on the accompanying graph showing rainfall and tile drain flow for a monitored site just below Drakes Hill Road. This site is managed by NIWA and is for the removal of nitrate in subsurface drain water. 10 mm of rain fell over and 18 hour period on the 25<sup>th</sup> and 26<sup>th</sup> January 2017. The tile drain flow didn't start to increase until 15 hours after the rain started and the peak flow occurred 8 hours after the rainfall stopped.

In the event that there is a significant rainfall event on a saturated catchment that exceeds the carrying capacity of the pipe, there is provision for overland flow, as happens in nearly all piped catchments under such circumstances.

It is proposed to have the finished ground surface along the reclaimed tributary slightly proud of the surrounding ground so that stormwater doesn't channel down the line of the tributary. This will prevent soil wash particularly during pasture establishment.

Riparian vegetation just above the outlet of the proposed piped section will help filter sediment and protect the tributary banks from scouring.

### **Perched Culverts**

I note your comments about perched culverts. I find it ironic that land owners pay for a service including the management and cleaning of the HT and Waituna Creek, provided by Environment Southland, and when Council contractors don't follow best practice it is the land owners responsibility!

Yours sincerely



John Scandrett.

# **GJH & GI Amtink**

## **Application For The Discharge of Fill Material to the Bed of a Stream**

### **Purpose**

This application is for the discharge of clean fill and soil to the bed of a tributary such that it can be reclaimed.

### **Duration**

It is proposed to complete the work within a 2 year period.

### **Description of Activity**

The activity forms part of a process to reclaim an 800 m section of the Higham Tributary (HT).

The topsoil will be stripped from either side of the HT and stock piled so it can be replaced later.

The tributary bed will be cleaned and a trinket formed to lay the pipe in. 330 mm diameter PVC pipes will be used. Branch tile drains will be connected directly to the PVC pipe.

Filter gravel will be placed around and over the pipe to support it to a depth of 500 mm.

The filter gravel will be covered with subsoil and ditch cleanings and then topsoil.

The backfill will be left slightly proud of the surrounding ground to allow for settlement. This will also ensure flood flows don't scour the fill.

### **Fill description**

The filter gravel is screened washed gravel in the size range of 10 mm to 25 mm. It is inert in a chemical sense and will be used to physically support the pipe.

The subsoil will be local material from on site as well as soil that has been removed from the tributary in the past.

The topsoil that will be used to cover the subsoil will be local material.

### **Site investigation**

Ryder Consulting Limited were commissioned to prepare an ecological assessment of the HT and the Waituna Creek for comparison. The study concluded the aquatic ecology values of the upper 800 m of the HT were limited by the modified uniform nature of the channel and regular disturbance to maintain its drainage function.

The original proposal was to pipe 900 m of the HT, this report recommended only 800 m be piped. Below the 800 m mark the quality of the habitat improved due to an improvement of the physical features of the HT.

In the 2 years Mr Amtink has owned this property he has regularly inspected the HT and noted the ongoing slumping and erosion of the material from the HT banks down to bed level. Flows are such particularly in summer when the tributary is virtually dry that the bed is dominated by grass.

### **Assessment of Effects**

#### **Water Quality**

Water quality will improve as a consequence of reclaiming 800 m of the Higham Tributary (HT) for the following reasons.

1) The HT is generally deeply incised with near vertical banks from years of mechanical excavation by the Regional Council's contractors. As a consequence silt slips and washes off the banks into the watercourse bed, particularly during wetter periods when higher flows occur. This provides an ongoing source of sediment, which is carried downstream to receiving waters. Sediment has a

negative effect on the habitat and water quality of receiving waters such as the Waituna Creek and Waituna Lagoon. Reclaiming 800 m of the Higham Tributary will reduce sediment loss from bank erosion to receiving waters.

2) The HT is currently fenced off with dairy cows grazed in the paddocks on either side. The nature of the topography is such that despite the presence of riparian fencing there are times during severe rain storms when sediment and faecal coliforms can reach the HT at critical source areas via overland flow. There are three paddocks on the south side of the HT that are quite narrow due to the proximity of the southern boundary fence for the property. Long narrow paddocks are not ideal with a propensity to cause cows to track along their length, increasing the risk of soil compaction and increasing the risk of run-off and subsequent adverse effects on water quality. Reclaiming 800 m of the Higham Tributary will allow for better paddock layout, which will reduce the tendency for cows to track along the HT. This should reduce soil compaction and the risk of contaminant loss via overland flow to the HT at critical source areas, which will improve water quality of receiving waters.

3) There are several culverts providing access across the HT and as noted in the Ryder report, their outlets are above the stream bed, i.e. perched. As a consequence plunge pools have formed from the scouring velocity of the water exiting the culvert. Furthermore, storm water flowing downhill to these stock crossing culverts is likely to discharge directly to the HT as there is no nib and no easy means of redirecting stormwater without "reconstructing" the culvert. At present the culverts are the lowest point in the crossing and act as critical source areas; at times contaminants can reach the HT via overland flow from culvert areas. Reclamation of the tributary will eliminate these issues, resulting in the discharge of filtered water.

In summary, reclaiming 800 m of the Higham Tributary will prevent scouring of banks and consequent sediment loss, since the ditch-line will be backfilled and sown to pasture. This will allow improved paddock shape and improved cow behaviour, with an associated reduction in soil compaction and run-off to receiving waterways. Culvert areas, which currently act as critical source areas that can lose contaminants to the waterway via overland flow, will be removed when reclamation work is carried out. Reclaiming 800 m of the HT will reduce sediment, microbial contaminant and nutrient loss, which will improve water quality of receiving waters. The adverse effect on water quality from reclaiming 800 m of the HT will be less than minor.

Further the proposal will not compromise the potential of physical and natural resources to meet the reasonable foreseeable needs of the community. The HT is not used for food gathering. The landscape is currently highly modified and a change to pasture will not detract from the landscape aesthetically. The proposal does require a significant financial investment, both for the piping and reclamation activity and the mitigation by refencing and riparian planting and culvert improvement.

The benefits will be significant in terms of improved water quality and farm management, with an improved fencing layout allowing better use of the land with less risk of contaminants being lost directly to water at critical source areas.

The proposed reclamation will have a one off effect during the installation activity. This effect can be minimised through prudent management including the appropriate timing of the work in relation to flow rates, relocating fish prior to work starting and the installation of a silt trap at the end of the works.

### **Term**

A term of 2 years is sought to complete the works in as this allows two summers within which to select an appropriate low flow period to complete the work.

This also gives adequate time to complete the associated mitigation work.

### **Alternatives**

Reclamation of the tributary requires the placement of backfill over the pipe. There is no alternative to this other than not to complete the reclamation. Filter gravel backfill around the pipe is deemed to be highly desirable to support the pipe and allow the movement of seepage flow water so that it can be drained away.

On site subsoil and local subsoil fill is the most cost effective option for sourcing the remainder of the backfill needed.

**Consultation**

Adjoining land owners have been consulted and have given their approval for this work. DOC, Fish and Game and Te Ao Marama will be consulted once the application and RFI's have been fully accepted and deemed to be complete by Environment Southland.

**Statutory Considerations**

The proposal as a whole, for the reclamation of 800 m of the HT, which includes the placement of fill to the bed, was assessed against statutory considerations in the main application. This assessment adequately covers the placement of fill in the bed of the HT.

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**GJH & GJ Amtink**

**Proposal to Reclaim 800 m of the Higham Tributary**

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## 1. Background

GJH and GJ Amtink purchased an existing dairy farm at 70 Drakes Hill Road on 1 June 2015.

Hennie Amtink is an experienced and successful dairy farmer who has regard for good environmental management. This has been well demonstrated at his home property at 717 Rimu Seaward Downs Road.

Upon purchase of the property a number of issues related to the Higham Tributary (HT)\* that flows through the property and joins the Waituna Creek were noted. Particularly in the upper reaches the HT banks are deep, near vertical and frequently slump and have silt wash off, which then deposits on the watercourse bed. The vertical banks are as a result of mechanical cleaning of the HT by Council contractors. Bank slumping also undermines the existing riparian fences. The HT is fully reclaimed upstream of Drakes Hill Road.

The culverts across the HT were poorly designed and allow direct run off into the channel at times. The culverts also have plunge pools below them, which increases the risk of culvert failure as well as impeding fish passage.

The HT is parallel and close to the southern boundary of the farm, which gives three of the paddocks between the HT and boundary a long and narrow shape. This is not ideal for stock management purposes. Cows tend to track along their length, increasing the risk of soil compaction and surface run off into the HT.

An aquatic ecological assessment carried out by Ryder Consulting Limited has reported that the first 800 m of HT has low habitat value, with low to nil flows during dry periods and a dominant grass bed overlying silt. In contrast, the main stem of the Waituna Creek also flows through the property and has significantly greater water flows and much better habit values. These could be further enhanced with planting inputs into the riparian margin.

As a consequence, it is proposed to reclaim the first 800 m of the HT to resolve ongoing maintenance, fencing, paddock utilisation, culvert and run-off issues. To mitigate the loss of a limited amount of low quality habitat it is proposed to adopt a riparian planting programme for the remaining 600 m of the HT and the 1600 m of Waituna Creek that runs through the property. A Riparian Management Plan detailing the programme of work has been developed with the support of Fonterra. This will require c.5,700 plants and re-fencing to provide a 4.5 m wide riparian margin on the north side of each waterway. The applicants are committed to implementing the programme as soon as regulatory approval for reclamation work has been granted. An additional benefit will be the elimination of potential fish passage issues at two culverts on the Waituna Creek. Currently the culverts have their invert well above water level on the downstream side, which impedes fish passage. It is proposed to use rocks to build up the bed level of the downstream areas so that the water level on the downstream side is not below the culvert invert level and fish passage is ensured.

\* The acronym "HT" is hereafter used to refer to the Higham Tributary watercourse.

## 2. Statutory Considerations

Schedule 4 of the RMA requires that an assessment of the activity against the matters set out in Part 2 and any documents referred to Section 104. Sections 104B and 104D of the Act set out the matters that, subject to Part 2, the Consent Authority must have regard to when considering an application for discretionary and non-complying activities. An assessment of each of these matters follows:

### Part 2 of the RMA

#### Section 5

Under Part 2 of the Act, Section 5 sets out the purpose of the Act as follows:

- (1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
- (2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while*
  - (a) *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
  - (b) *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
  - (c) *avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

In order to achieve the purpose of the Act, the proposed development must be considered in the context of Section 5 above. Paragraphs (a), (b) and (c) of Section 5(2) are to be afforded full significance and applied accordingly in the circumstances of the particular case so that promotion of the Act's purpose is effectively achieved.

The proposed development will not compromise the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations, and will have no more than minor adverse effects on the life-supporting capacity of air, water, soil and/or ecosystems. In fact reclamation of the waterway will lead to an outcome whereby the applicant will be better able to utilise the land resource comprised in their farming operation in a much more effective and efficient way without having undue detrimental effects on the remainder of the HT and Waituna Creek downstream. This will enable the applicant to provide for their own ongoing economic wellbeing, with positive flow on effects to wider regional economy also.

Both existing and future users of the resource alike will not be materially affected by reclamation of an 800 m section of the HT on the applicant's property. Indeed, the proposed mitigation activities will enhance the waterway downstream of the reclamation reach, enabling resource users in these areas, including recreational users, to better provide for their social and economic wellbeing.

As has been demonstrated in the Assessment of Environmental Effects section of this application, any potential adverse effects of the proposed development, including any detrimental impacts on the life-supporting capacity of the watercourse and the ecosystem within it, will be minor and can be appropriately avoided, remedied and mitigated. It is therefore considered that the proposed development is in keeping with the primary purpose of the Act.

#### Section 6

Section 6 of the RMA lists the matters of national importance that a Consent Authority shall recognise and provide for when considering applications for resource consent. The Section 6 matters that are considered to be relevant to this proposal are:

- (a) *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
- (b) *the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*
- (c) *the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
- (d) *the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
- (e) *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*

It is considered that the proposed activity does not impact directly on the coastal environment, wetlands, and lakes and their margins. It is also considered that the proposed development will not adversely affect the natural character of any river. The HT is already a highly modified waterway and continues to be subject to regular human interventions and influences. Therefore the natural character values of the waterbody are very low and the proposed development is considered to be an appropriate use of the resource in terms of the marginal impacts it may have on these values.

In addition the proposed development will not adversely affect any outstanding natural feature or landscape. The Aquatic Ecology Assessment undertaken by Ryder Consulting did not identify the site as being significant in terms of habitats for indigenous fauna, nor is any significant indigenous vegetation identified on the site.

There is currently no established public access to the HT or Waituna Creek maintained through the applicant's property. Therefore the proposal will not adversely affect public access and is considered to accord with the provisions of Te Tangi o Tauria.

Having regard to the above, it is considered that the proposed development adequately provides for the matters of national importance set out in Section 6 of the Act.

#### Section 7

Section 7 of the Act sets out other matters that must be taken into consideration in achieving the purpose of the Act. The relevant other matters set out in Section 7 are as follows:

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—*

- (a) *kaitiakitanga:*
- (aa) *the ethic of stewardship:*
- (b) *the efficient use and development of natural and physical resources:*
- (d) *intrinsic values of ecosystems:*
- (f) *maintenance and enhancement of the quality of the environment:*
- (g) *any finite characteristics of natural and physical resources:*
- (h) *the protection of the habitat of trout and salmon:*

The activity is considered to represent an efficient use of a natural resource that will give rise to significant positive benefits in terms of providing for the social and economic wellbeing of the applicants and the wider regional economy. There is, however, the potential for adverse effects on the environment to arise, including the loss of instream ecosystems and habitat for fish (trout and native fish species) and other aquatic species. However, it is considered that the effects of the activities have been adequately identified and assessed in the Assessment of Environmental Effects section of this application, and any effects will be no more than minor. Moreover, some of the mitigation measures proposed, such as riparian planting and stream enhancement, will lead to positive outcomes in terms of the quality of the riparian and instream environment further downstream, and an improved habitat for aquatic life and enhanced water quality.

#### Section 8

Section 8 sets out a Consent Authority's responsibilities in relation to the Treaty of Waitangi. As is discussed in further detail below, the proposal is considered consistent with the provisions of all regional planning documents, including Te Tangi o Tauria, and Sections 6(c) and 7(a) of the Act. Therefore, the proposal can also be considered consistent with Section 8 of the Act.

Having had regard to the matters outlined above it is considered that the proposed development achieves the purpose of the Resource Management Act 1991.

## **Section 104 Assessment**

Section 104(1)(b) of the Act requires the Consent Authority to have regard to the relevant provisions of the following documents which are assessed in further detail below:

- National Policy Statement for Freshwater Management
- Regional Policy Statement for Southland 1997
- Proposed Southland Regional Policy Statement 2012
- Regional Water Plan for Southland 2010
- Proposed Southland Water and Land Plan 2016
- Te Tangi a Tauira (Ngai Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008)

### **National Policy Statement for Freshwater Management (NPSFM):**

The following objectives and policies of the NPSFM have been considered:

#### Objective A.1

This objective seeks to safeguard the life-supporting capacity, ecosystems and indigenous species of freshwater in sustainably managing the use and development of land and the discharge of contaminants. The Aquatic Ecology Assessment undertaken on behalf of the applicant concluded that riparian enhancement of approximately 1300 m of channel and modifications to two culverts to improve fish passage will mitigate the adverse effects of reclamation of 800 m of the HT. Therefore the proposal is considered to safeguard, and indeed enhance, the life-supporting capacity of the river, and the instream ecosystems. The applicant also proposes to transfer any fish life from the reclaimed section to an unaffected area downstream, ensuring any indigenous fish species are safeguarded. The proposal is also not considered to have any detrimental impact on the health of any people or communities downstream of the new reclaimed section of waterway.

#### Objective A.2

This objective seeks to maintain or improve water quality in the region while protecting the significant values of outstanding freshwater bodies and wetlands, and improving the water quality in waterbodies already significantly degraded. The HT is not considered an outstanding waterbody. While the Waituna Creek and associated wetlands downstream are considered outstanding and the water quality within these features has already been significantly degraded by human activity, the proposed reclamation of an 800 m reach of the HT will not result in any additional adverse impacts on the water quality of these features, and indeed will likely have a positive effect on them through the riparian planting and stream enhancement being proposed as mitigation.

#### Policies A1 – A3

These policies seek to give effect to the above objectives by requiring regional councils to make certain changes to their Plans to introduce provisions relating to the establishment of freshwater management units and the freshwater objectives and limits set to manage water quality and quantity within them. As is discussed further below, the proposed activity is considered to align with the provisions in the operative Regional Water Plan, and the changes being introduced through the provisions of the Proposed Southland Water and Land Plan 2016. The application is therefore not considered inconsistent with these policies.

#### Objectives B1-B4

These objectives establish a goal of safeguarding the life-supporting capacity, ecosystems and indigenous species of freshwater in sustainably managing the taking and use of water, including through avoiding any further over-allocation and phasing out existing over-allocation of freshwater; improving and maximising the efficient allocation and use of water; and protecting the significant values of wetlands and outstanding waterbodies. As discussed under Objective A.1 above, the Aquatic Ecology Assessment undertaken on behalf of the applicant concluded that overall the proposal is considered to

safeguard, and indeed enhance, the life-supporting capacity of the river, and the instream ecosystems. The proposal is not considered to have any significant impact on the flows and availability of freshwater to any other resource users further down the catchment.

#### Policies B1-B6

Similar to the assessment of Policies A1-A3 above, the policies in the water quantity section of the NPSFM seek to give effect to the water quality objectives by requiring regional councils to make certain changes to their Plans to introduce provisions relating to the establishment of freshwater objectives and limits, and providing for the efficient allocation and efficient use of the resource in a way that gives effects to those objectives and limits. As is discussed further below, the proposed activity is considered to align with the provisions in the operative Regional Water Plan, and the changes being introduced through the provisions of the Proposed Southland Water and Land Plan 2016.

Policy B5 also requires that regional councils ensure that no decision will result in future over-allocation of all freshwater in an FMU. As discussed above, the proposed activity will not have any significant impact on the availability or allocation of freshwater within the wider catchment.

#### Objective C1 and Policies C1 and C2

These provisions relate to the need to improve the integrated management of freshwater, and the use and development of land, on a catchment wide basis. This is proposed to be achieved by regional councils making policy changes where necessary to ensure that they manage freshwater and land use and development in an integrated and sustainable way. The proposed reclamation work is considered to achieve this integrated management by ensuring that the effects of the adjoining land use, i.e. the dairy farm operation, are reduced by providing for riparian planting along a significant stretch of waterway further downstream, further limiting the risk of contaminants being discharged into the waterbody. Furthermore, the proposed riparian planting will provide and enhanced instream habitat for aquatic species as well. Overall the proposed activity is considered to have a positive impact on the freshwater resource and is thereby considered to achieve good integration between the freshwater and rural land resources.

#### Objective D1 and Policy D1

Tangata whenua values and interests in relation to freshwater are to be identified through the involvement of iwi and hapu in the management of freshwater and decision-making on freshwater planning. As is discussed in further detail below, the proposed activity is considered to accord with the provisions of the Iwi Management Plan, Te Tangi a Tauira, and is therefore consistent with this objective and policy.

### **Regional Policy Statement for Southland 1997 (Operative RPS):**

#### 5.5 Water Quality

The objectives and policies of the Water Quality chapter of the Operative Southland RPS are aspirationally very similarly to those in the NPSFM discussed above. In general, the objectives seek to sustain the water quality of the region's water resources in order to meet the ongoing needs of the community and resource users, while also recognising the relationship of Maori to water, and safeguarding the life-supporting capacity of the resource and associated ecosystems. Objective 5.3 in particular seeks to ensure that the diverting of water and discharge of contaminants does not compromise water standards. This is notably similar to Objective 5.2 which seeks to ensure that water quality is maintained and enhanced when water and land resources are used and developed, and when contaminants are discharged. These objectives are given effect to by Policy 5.5 which requires the Council to assess the effects of land use and development activities on water quality, and provide for the avoidance, mitigation and remedying of these effects as necessary.

As has already been discussed above, the proposed activity is not considered to present any significant risks in terms of adverse impacts on water quality, and the mitigation measures proposed by the applicant will ensure that any effects that may arise are appropriately managed.

### 5.6 Lakes, Rivers and Wetlands

The objectives and policies of this section of the Operative RPS set out the need to protect the natural character, heritage values and outstanding natural features of lakes, rivers and wetlands in the region, while also recognising and providing for the relationship Maori have with these resources; maintaining and enhancing public access; and avoiding wherever practicable, remedying and mitigating the adverse effects of activities on the beds of these features.

The policies that give effect to these objectives and that are most relevant to this particular development are Policy 6.5, which seeks to encourage the provision and enhancement of public access; Policy 6.6, which seeks to enhance water quality, amenity, in stream values and bank stability; and Policy 6.9, which seeks to provide for the continued maintenance of community drains.

As has been discussed elsewhere, the waterway has been extensively and repeatedly modified overtime to the point that it is no longer considered to hold natural character values of any great significance. Similarly, there are no significant heritage values identified in the HT, nor is it, or any of the surrounding landscapes, considered to be an outstanding natural feature.

In terms of public access, no formal public access arrangements currently exist and none are proposed. The waterway is considered to be of little value recreationally and, given is not known as a mahinga kai site. Therefore, the enhancement of public access to the area is not considered necessary, and the proposal is considered not to be in any conflict with this policy.

The proposal will obviously remove the need for any ongoing mechanical cleaning in that section of the waterway moving. It is expected that the riparian planting proposed by the applicant along the downstream reach may potentially impede the ability to access the waterway for mechanical cleaning purposes in these areas. However, this planting will likely reduce the need for such intervention in the future by stabilising the streams banks and reducing the amount of sediment entering the water. So while the proposed activity may not give full effect to Policy 6.9 of the Operative RPS, it is considered inappropriate to do so as it would incur a high opportunity cost in terms of missing out on a chance to enhance the waterbody and reduce any drainage issues.

### 5.1 Takata Whenua

The objectives of the Operative RPS in relation to tangata whenua are to protect wahi tapu from adverse effects; recognise the importance of wahi tapu, wahi toanga, mahinga kai and the customary use of water to iwi; incorporate these Maori cultural and spiritual values in resource management decisions; and have particular regard to the principle of kaitiakitanga.

Recognition of the relationship of tangata whenua with their ancestral lands, water sites, waahi tapu and other taonga has been provided for through the direction set in the Ngai Tahu ki Murihiku Natural Resource and Environmental Management Plan Te Tangi a Taurira (2008). An assessment of this document is included below.

## **Proposed Southland Regional Policy Statement 2012 (PSRPS):**

### Chapter 3 – Tangata Whenua

The objectives and policies of the PSRPS are similarly focused to the corresponding provisions of the Operative RPS in that they seek to involve tangata whenua in resource management decision making processes, and ensure that the interests of tangata whenua are taken into account and given due consideration. Again, this has largely been done through consideration of the direction set out in Te Tangi a Taurira, an assessment of which follows below.

### Chapter 4 – Water Quality

Similar to the provisions of the Operative RPS, the objectives of the water quality section of the PSRPS seek to safeguard the life-supporting capacity of water and related ecosystems, and the health of people

and communities by maintaining or enhancing the region's water quality, while at the same time ensuring the ongoing social, cultural and economic needs of the community are provided for. Particular emphasis is placed on halting the decline of, and indeed improving, water quality in lowland water bodies. To achieve these objectives the policies provide for the development of freshwater objectives, and the subsequent management of discharges to meet those objectives.

While the freshwater objective setting process is yet to occur for the Maitua Freshwater Management Unit, within which the Waituna Freshwater Sub Unit is located, the proposed activity is not considered to present any significant risks in terms of adverse impacts on water quality, and the mitigation measures proposed by the applicant will ensure that any effects that may arise are appropriately managed.

#### Chapter 4 – Water Quantity

The two objectives of the water quantity section of the PSRPS seek to ensure that the allocation and use of water in the region is efficient, and that water quantity limits are developed in a way that safeguards the life-supporting capacity of water and related ecosystems, including by supporting the maintenance or enhancement of water quality. At the same time, the objectives also seek to ensure the ongoing social, cultural and economic needs of the community are provided for. The most relevant policy in terms of this particular development proposal is Policy WQUAN.1, which directs that the instream values of surface water are maintained.

Again, while the freshwater objective setting process for this catchment is yet to occur, overall the proposal is considered to safeguard, and indeed enhance, the life-supporting capacity of the river, and the instream ecosystems. The proposal is not considered to have any significant impact on the flows and availability of freshwater to any other resource users further down the catchment.

#### Chapter 4 – Beds of Rivers and Lakes

The objectives and policies of the PSRPS that relate to the management of the beds of rivers and lakes provide for the maintenance and enhancement of all significant values of lakes and rivers, and the maintenance and enhancement of public access to these features in a strategic and co-ordinated manner, in accordance with the values attributed to the area.

As is discussed above, the values associated with this particular waterway are not considered to be significant and therefore there appears to be little strategic benefit or necessity in requiring the enhancement of public access to the area. As such the proposal is considered not to be in any conflict with this policy.

#### Chapter 5 – Rural Land/Soils

The objectives and policies of the Rural Land/Soils section of the PSRPS are generally supportive of what the applicant is trying to achieve with the proposed works. The application is considered consistent with Objective 1, which seeks to achieve the sustainable use of Southland's rural land resource, in that it allows the development of land for agricultural purposes without adversely impacting on the life-supporting capacity of soil, which is what Objective 2 seeks to safeguard. It enables the development of the resource in a way that supports communities in providing for their social and economic wellbeing, as provided for by Policy 1, without having any significant adverse effect on the rural amenity and character protected by Policy 2. The proposed work will also be managed in a way that achieves the overall maintenance and likely enhancement of both water quality and indigenous biodiversity, as required by Policy 5, and safeguards the mauri of water and soils.

#### Chapter 6 – Biodiversity

The objectives of the Biodiversity section of the PSRPS are to understand the extent of indigenous ecosystem and habitat loss, maintain and protect those areas and habitats that are identified as being significant, and enhance the overall range, extent and condition of indigenous biodiversity in the region, particularly those areas considered most at risk. The policies that follow on from these objectives set the criteria to be used when assessing the significance of indigenous biodiversity, require the protection of biodiversity identified as being significant in accordance with those criteria, require the maintenance

of all other indigenous biodiversity, and ensure due consideration of tangata whenua values and interests in indigenous biodiversity, including actively involving them in the management of the issue. The policies commit the regional council to encouraging and supporting community biodiversity initiatives and active management methods, as well as recognising the value of biodiversity offsetting and the role of landowners in the management of indigenous biodiversity.

The affected section of the waterbody and its surrounding environments have not been identified as being significant in any regional or district plans, or in the ecological assessment undertaken on behalf of the applicant. While the presence of some indigenous and taonga species have been identified, that does not necessarily mean the location is a significant habitat for these species. Furthermore, the applicant is proposing to offset any loss of habitat and mitigate any impact on these species by providing an improved habitat downstream and undertaking relocation of the fish into these areas prior to the work being commenced. Overall the application is not considered to be inconsistent with any of the biodiversity provisions of the PSRPS, and should in fact lead to positive biodiversity outcomes.

#### Chapter 10 – Natural Features and Landscapes

The provisions of the Natural Features and Landscapes chapter of the PSRPS are focused with protecting as a matter of national significance, those natural features and landscapes that are considered “outstanding” from inappropriate land use and development. The provisions also seek to manage the adverse effects of land use and development on other identified landscapes and natural features of local significance. The HT is reasonably typical of the small tributaries to the regions waterways that drain the rural lowlands of Southland. Furthermore, the waterway has been subject to ongoing mechanical cleaning and as such is now highly modified with limited aesthetic value, and more or less resembles an unremarkable farm drain in appearance. The waterway is not considered to hold any significant landscape or geomorphological value, and as such the proposed works are not considered to result in any adverse effects that are more than minor. The application is therefore considered consistent with these particular PSRPS provisions.

#### **Regional Water Plan for Southland 2010:**

##### Water Quality

Objective 2 of the Regional Water Plan seeks to maintain water quality in such a way as to ensure that there is no reduction in quality beyond the zone of reasonable mixing for discharges. Objective 3 seeks to maintain and enhance the quality of surface water bodies so that the values associated with them are sustained, which for lowland surface water bodies such as Waituna Creek includes bathing, fish life (trout and native species), stock drinking water, cultural values and natural character (including aesthetics). Where these goals are not met, Objective 4 seeks to manage discharges to achieve a 10 percent improvement in selected water quality parameters over 10 years.

The proposal is likely to result in an overall enhancement of water quality of the waterbody through in stream improvements and riparian planting. It is therefore considered consistent with the water quality provisions of the Regional Water Plan.

##### Water Quantity

Like the other documents referred to above, the water quality provisions of the Regional Water Plan focus on ensuring protection of the life-supporting capacity of water and associated ecosystems, natural character, heritage and cultural values, while at the same time supporting people and communities in meeting their social, cultural and economic needs, and maximising the efficient use of water.

The stretch of water affected is not identified as having particularly significant values. Where there are values that may be affected, these effects are appropriately mitigated, including through the movement of any potentially affected fish stocks to an appropriate location downstream.

##### River Bed Use and Development



Objective 10 seeks to maintain or enhance the diversity and integrity of aquatic and riverine habitats and ecosystems, while Objective 12 seeks to maintain and enhance public access. The objectives also seek to protect significant historic heritage values (Objective 11) and the natural character and outstanding natural features of rivers (Objective 13).

As discussed above, the affected section of the Higham tributary does not hold any significant value in terms of historic heritage or natural character and landscape features. Habitat and ecosystem values will be impacted in the location of the proposed works, but these impacts will be mitigated through the translocation of affected fish stocks, and offset by habitat enhancement downstream.

### **Proposed Southland Water and Land Plan 2016:**

#### Region Wide Provisions

The Proposed Water and Land Plan includes a set of region-wide objectives that provide direction very similar in nature to the other documents assessed above. In general, the objectives seek to manage freshwater and its associated ecosystems as an integrated natural resource, while at the same time recognising the social, cultural (including access to and use of mahinga kai sites) and economic values associated with them.

Objective 6 is highly aspirational in its requirement that there be no reduction in the quality of freshwater. This is to be achieved by ensuring that water quality is maintained where it has not already been degraded, and is enhanced where it has been.

Objective 9 requires that the quantity of water in surface waterbodies is managed so that aquatic ecosystem health, life-supporting capacity, outstanding natural features and landscapes, recreational values, natural character, and historic heritage values of surface waterbodies and their margins are safeguarded, and water is available both instream and out-of-stream to support the reasonable needs of people and communities to provide for their social, economic and cultural wellbeing.

Similarly, Objective 13 enables the use and development of land and soils, provided (among other things) the discharge of contaminants to land or water that have significant or cumulative effects on human health are avoided, and any adverse effects on ecosystems, amenity values, cultural values and historic heritage values are avoided, remedied or mitigated and these values are maintained or enhanced.

Objectives 14-17 reiterate the need to maintain and enhance indigenous biodiversity, recognise and provide for the identified taonga species, maintain public access to river and lake beds, and protect natural character values of surface water bodies.

Objective 18 concludes with an overall direction that all activities operate at “good (environmental) management practice” or better to optimise efficient resource use and protect the region’s land, soils, and water from quality and quantity degradation.

The region wide policies that have been developed in response to these objectives, generally speaking, provide for the recognition and management of iwi interests, and the management of the effects of contaminants in each of the identified physiographic zones. For this property the policies relating to the Gleyed and Oxidising physiographic zones are the most relevant. Policy 6 requires the avoidance, remedying and mitigation of adverse effects in the Gleyed physiographic zone through good management practices in relation to the transportation of contaminants via artificial drainage and overland flow, with particular regard to be had to these effects when assessing resource consent applications and management plans. Policy 10 requires the similar management of adverse effects in the Oxidising physiographic zone, with the addition of a consideration of contaminants transported via deep drainage.

The proposed activity is considered to be generally well aligned with the region wide objectives and policies of the PSWLP. Any adverse effects on water quality are likely to be minor only, and temporary in nature during the installation period. Adverse effects on water quantity are also only likely to be minor at most with no significant change in the quantity of water available downstream for any recreational, cultural, commercial and community users. The proposed activity is also not considered to have any significant impact on the environment in terms of indigenous biodiversity, natural character and landscapes, historic heritage, amenity, public access and tangata whenua values.

#### Water Quality

Policy A4 relates to the freshwater objectives established by the NPSFM and as such is considered to have been adequately assessed above. For the sake of completeness, it is considered that the proposed activity is consistent with this policy. While there is the potential for the discharge of sediment associated with the proposed installation works, these effects will be temporary in nature, and no more than minor in terms of their impact on the life-supporting capacity of freshwater and any associated ecosystems.

Policy 13 requires that land use activities and discharges are managed so that water quality, human health and health of domestic animals and aquatic life is protected. Policy 15 requires that water quality is maintained or improved by managing discharges and land use activities in accordance with the water quality standards specified, insuring water quality is maintained where it is better than the standards, is improved where it does not meet the standards, and that it also meets drinking water standards and sediment guidelines.

The proposed activity is considered consistent with these policies. Human and domestic livestock health and aquatic life will be protected, including through the translocation of any fish species found in the affected stretch of water at the time of installation. The overall water quality of the waterbody will be enhanced through stream improvements and riparian planting.

#### Water Quantity

Policy B7 relates to the freshwater objectives established by the NPSFM and as such is considered to have been adequately assessed above. For the sake of completeness, it is considered that the proposed activity is consistent with this policy. While there will be adverse effects in terms of the impact the activity will have on the life-supporting capacity of freshwater and any associated ecosystems within the section of the water way to be reclaimed, these effects will be adequately offset by riparian planting and stream improvements further downstream, meaning that on balance the activity will have positive environmental effects and any adverse effects are considered to be minor in nature.

Policy 20 sets out how the taking and use of both surface water and groundwater will be managed. The policy consists of four different limbs which:

- list the matters on which adverse effects of taking and using surface water must be avoided, remedied or mitigated;
- list the matters on which significant adverse effects on groundwater must be avoided, remedied or mitigated;
- ensure that water is used efficiently and at a volume and rate that is appropriate for the intended end use; and
- recognise the positive benefits of water use.

Water quantity effects will be no more than minor. The proposal is not anticipated to result in any significant impacts on any of the matter listed in the policy and is therefore considered to be in keeping with the direction it provides.

#### Other Policies

Policy 28 requires structures and bed disturbance activities to be managed in a way that avoids, remedies or mitigates adverse effects on, among other things, water quality and quantity; habitats, ecosystems and fish passage; indigenous biodiversity; historic heritage; tangata whenua values; public access; amenity values; natural character and landscape values; and river morphology and dynamics.

Each of these matters have been covered previously under the above assessments of other policy documents. In line with those assessments the proposed activity is considered to be consistent with this policy also. While the proposed activity will have some adverse effects, particularly in terms of habitat disturbance, these effects are considered to be well mitigated.

Policy 30 requires that drainage maintenance activities within the beds of modified watercourses are managed in a way that either avoids, remedies or mitigates significant adverse effects on the aquatic environment, or maintains or enhances habitat value. The proposed activity is designed to be of sufficient capacity to effectively deal with the anticipated quantities of water during high rainfall events. It will also remove the need for the continuation of current drainage maintenance activities undertaken within the waterway. While the work will have some adverse effects on the aquatic environment in the vicinity of the section being reclaimed, these effects are not considered to be significant and given the level of mitigation proposed, the habitat value of the overall waterway is expected to be enhanced.

Policy 32 requires the protection of significant indigenous vegetation and significant habitats of indigenous fauna. The applicant's ecological assessment did not consider the waterway to contain any vegetation or habitats of particular significance, although it was noted that indigenous fish species were present in the affected section. While the proposed activity will impact upon the habitat within which these fish were found, habitat enhancements downstream will mean that overall the effect of the activity, ecologically speaking, is positive.

#### Resource Consent Applications

Policies 39-43 form a suite of overarching policies that are to be applied to the consideration of all applications for resource consent applications. Policy 39A refers to the integrated management of freshwater and land use development across whole catchments. This policy is particularly relevant to this application given the direct impact the adjoining land use activity (i.e. dairy farming) will have on the waterway (i.e. reclamation will allow the development of pasture and a more practical, efficient and economic paddock layout), and the downstream effects in terms of enhancement of the waterway and its riparian margins. Overall the application is considered to demonstrate an integrated approach to resource management, with the overall outcome being an improvement in the farming operation that achieves better economic and community outcomes, and positive ecological effects as a result of the enhancement work to be undertaken as mitigation.

Policy 40 sets out the matters to be considered in determining the term of a resource consent. As the proposed reclamation activity will result in a permanent physical change to the property and the way the farming activity operates, the land use aspect of the proposal is an ongoing activity for which an indefinite term is appropriate. Any discharge activities are anticipated to be temporary in nature during the course of the installation period.

Policy 44 lists the Te Mana o Te Wai values that particular regard will be given to in making decisions under the PSWLP. The proposed activity is considered consistent with these values in that the adverse effects on the health and mauri of water, people and the environment will only be minor at most, and the Higham tributary is not noted as a site of cultural significance in terms of mahinga kai or wai tapu. Nor does it hold any significance from a water supply or navigational point of view. Furthermore, the proposed activity will allow for the applicant to better provide their own economic wellbeing, which will serve the wider regional economy better also.

#### **Te Tangi a Tauira – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008:**

Section 3.5 sets out the environmental management issues of importance to iwi within the Southland Plains environment, as well as the policy approach to addressing these issues. The maintenance of water quality and water quantity, and the protection of the mauri and wairua of rivers, mahinga kai, wahi tapu, wahi taonga are all listed as important issues for iwi. The Plan also lists the issues and policies specific to the management of rivers, water quality, water quantity, activities in the beds and margins of

rivers, mahinga kai, biodiversity and freshwater fisheries, among others. These policies generally build on the more general provisions mentioned above, but add more detail and specificity in their direction. It is noted that the provisions specific to activities in the beds and margins of rivers appear to be largely focused on gravel extraction activities and are noticeably silent on any particular concerns with the type of activity being proposed. However, it is considered the provisions relating to culverts and floodworks may provide some guidance on how such activities are to be approached.

The proposed reclamation works are considered to be generally consistent with the provisions of Te Tangi a Tauria. Any adverse effects on the life-supporting capacity, ecosystems and habitats can be adequately mitigated, through sediment management techniques during the installation period, ensuring installation occurs in a phased manner at times of low flows so as to minimise impacts on water quality and quantity, and offset any habitat loss through downstream enhancements and riparian planting which should lead to an overall improvement in water quality and the condition of instream ecosystems and habitats. Any fish life present, including identified taonga species, would be translocated from the affected part of the waterway to a more appropriate area downstream, and this would then enable them to take advantage of these enhancements, and provide improved access to mahinga kai.

### 3. Consultation

Affected neighbours have been consulted and have given their approval for the proposal. Affected party forms are attached to this application.

Mr. Amtink has had a preliminary discussion with Fish and Game and Te Ao Marama Inc. regarding the proposal. They have not seen the full application including the level of mitigation proposed. Some concerns were raised by Fish and Game regarding the effects of the proposal. These concerns are responded to as follows:

1. The RMA requires that alternatives are considered only where it is likely the activity will result in a significant adverse effect on the environment. It is our assessment, informed in part by the Ryder Consulting ecological assessment, that the proposal will not have any more than minor effects on the environment, and therefore extensive consideration of alternatives is not needed. Despite this the applicant has revisited the potential alternative actions, including those proposed in your letter and the accompanying report, and comments as follows.
  - (a) The potential for the future enhancement of instream habitat is slight. The lack of/low flow in the upper 800 m reach severely limits the value of the instream habitat of this part of the tributary. As the stream is strictly rainfall fed, this is always likely to be the case, making the value to be gained by any enhancement projects minimal. Focusing enhancement efforts further downstream where flows are more extensive and more consistent will result in greater ecological gains. Furthermore, enhancement works will likely have the unintended consequence of opening up the waterway and making it more prone to grass growth, further reducing flow rates and the potential for any meaningful habitat enhancement.
  - (b)
    - i. The existing state of the tributary is predominantly the result of regular and repeated mechanical ditch cleaning processes, which have created the near vertical profile of the banks. While you have described the riparian setback as 'inadequate', we consider there is sufficient separation provided to ensure that the grazing of animals is likely to have no more than minor effects on bank stability. Mechanical ditch cleaning is likely to continue to have the most significant impact on bank stability and sediment erosion, and will probably remain doing so until either the upper reaches of the tributary are reclaimed, or an alternative land drainage management regime is adopted by the regional council.
    - ii. Gravel removal is again ostensibly a result of the regular mechanical cleaning processes employed by the regional council.
2. The hydrological and land use contexts on which the Henry Hudson rehabilitation examples are based are quite distinct from what is encountered in within the section of the HT that is proposed to be reclaimed, and therefore we do not consider that they are directly transferable as potential rehabilitation alternatives. The sections of waterway that have been used in the Hudson report appear to be permanently flowing waterways, within which the aquatic habitat is likely to be better established and more developed. It is also quite likely that the adjoining land use patterns allowed for extensive rehabilitation work without detrimental impacts on farm management practices and economic viability. This means that the rehabilitation undertaken will indeed likely have substantial and tangible ecological benefits with only minor operational and economic costs, and would therefore represent a good return on investment. The enduring issue with this part of the HT is that it is solely rainfall fed and therefore regularly suffers from a lack of flow, or indeed no flow at all. This lack of flow means that the ecological value of this section of the tributary is not significant, and therefore, when also taking into account the implications for farm management practices, the returns on investment from instream or riparian rehabilitation or enhancement cannot be readily justified. In this case, not only would the rebattering, recontouring and increased sinuosity suggested by the examples used in the Hudson report result in a significant financial outlay in terms of earthworks, but it also has a cost in terms of further reducing the practical grazing areas of the farm, potentially resulting in

an increased grazing density and more soil compaction and overland flow of sediment and other contaminants. Further to this, applying the rehabilitation and enhancement techniques recommended by the Hudson report to this part of the HT would possibly mean the removal of the existing culverts, and with them the loss of their associated drop pools. Based on the findings of the Ryder Consulting report, these drop pools provide perhaps the best habitat for aquatic species within this section of the tributary, meaning that not only would the suggested rehabilitation or enhancement work have significant negative financial and farm management implications, but it would also have the same, if not greater ecological implications (further taking into account also that the opening up of the waterway will likely lead to more prolific grass and weed growth in the channel).

3. It is acknowledged that the original application could have provided more detail on the proposed riparian planting programme on the Waituna Creek tributary that was offered as mitigation of the proposed reclamation work. The applicant will endeavour to provide this further detail to you in the very near future, but in the meantime you should note that the applicant has undertaken extensive and successful riparian planting projects on another property under the advice and guidance of regional council staff, and in this case sees much greater value in investing in the enhancement of the more ecologically significant areas further downstream.

It is clear from the findings of the Ryder report that the habitat quality of the top 800 m of the tributary is not significant and that habitat quality increases markedly below the 800 m mark. As discussed above, the low and intermittent flows that are typical in this section of waterway mean that the net loss of habitat in the HT is not likely to be significant, and indeed could be higher as result of employing the ideas included in the Hudson report. It stands to reason that focusing investment on riparian and instream enhancements further downstream would add much more value overall to the catchment in terms of water quality, aquatic ecosystems and biodiversity. Given the implications enhancement works in the upper 800 m of the waterway would have in terms of potentially exacerbating ongoing farm management difficulties, it is likely that the only feasible alternative to reclamation of the watercourse is that the status quo remains and a chance for downstream enhancements is forgone.

Note: Fish and Game, the Department of Conservation and Te Ao Marama Inc. will be consulted regarding the proposal once the application has been accepted as complete by Council. Given that the application has been returned as incomplete on two previous occasions, the priority has been to address and write the application to a standard that it is accepted as complete by Council.

#### **4. Assessment of Effects**

##### **Water Quality**

Water quality will improve as a consequence of reclaiming 800 m of the Higham Tributary (HT) for the following reasons.

- 1) The HT is generally deeply incised with near vertical banks from years of mechanical excavation by the Regional Council's contractors. As a consequence silt slips and washes off the banks into the watercourse bottom, particularly during wetter periods when higher flows occur. This provides an ongoing source of sediment, which is carried downstream to receiving waters. Sediment has a negative effect on the habitat and water quality of receiving waters such as the Waituna Creek and Waituna Lagoon. Reclaiming 800 m of the Higham Tributary will reduce sediment loss from bank erosion to receiving waters.

2) The HT is currently fenced off with dairy cows grazed in the paddocks on either side. The nature of the topography is such that despite the presence of riparian fencing there are times during severe rain storms when sediment and faecal coliforms can reach the HT at critical source areas via overland flow. There are three paddocks on the south side of the HT that are quite narrow due to the proximity of the southern boundary fence for the property. Long narrow paddocks are not ideal with a propensity to cause cows to track along their length, increasing the risk of soil compaction and increasing the risk of run-off and subsequent adverse effects on water quality. Reclaiming 800 m of the Higham Tributary will allow for better paddock layout, which will reduce the tendency for cows to track along the HT. This should reduce soil compaction and the risk of contaminant loss via overland flow to the HT at critical source areas, which will improve water quality of receiving waters.

3) There are several culverts providing access across the HT and as noted in the Ryder report, their outlets are above the stream bed, i.e. perched. As a consequence plunge pools have formed from the scouring velocity of the water exiting the culvert. Furthermore, storm water flowing downhill to these stock crossing culverts is likely to discharge directly to the HT as there is no nib and no easy means of redirecting stormwater without "reconstructing" the culvert. At present the culverts are the lowest point in the crossing and act as critical source areas; at times contaminants can reach the HT via overland flow from culvert areas. Reclamation of the tributary will eliminate these issues, resulting in the discharge of filtered water.

In summary, reclaiming 800 m of the Higham Tributary will prevent scouring of banks and consequent sediment loss, since the ditch-line will be backfilled and sown to pasture. This will allow improved paddock shape and improved cow behaviour, with an associated reduction in soil compaction and run-off to receiving waterways. Culvert areas, which currently act as critical source areas that can lose contaminants to the waterway via overland flow, will be removed when reclamation work is carried out. Reclaiming 800 m of the HT will reduce sediment, microbial contaminant and nutrient loss, which will improve water quality of receiving waters. The adverse effect on water quality from reclaiming 800 m of the HT will be less than minor.

## **Ecological Values**

The Ryder report was based on a the Stream Ecological Method (SEV), which involves an assessment of 14 stream ecological functions and 28 variables describing the physical, chemical and biological functions of the stream. The study looked at an initial proposal to reclaim 900 m of the Higham Tributary. The report discusses findings at three sites within the HT, two of which were originally in the proposed reclamation reach (i.e. H1 and H2). Following the assessment, only one site is within the proposed reclamation reach as the reclamation reach is reduced by 100 m; H2 will not be reclaimed. The report indicated that the upper 400 m does not provide either a good quality or permanent aquatic habitat due to it being dry for periods of the year. This part of the stream had the lowest overall mean SEV score. The effect on ecological values of losing the upper 400 m of the Higham Tributary will be less than minor due to the poor aquatic habitat it currently provides; in the Ryder study electric fishing of the 100 m reach upstream of site H1 found no fish.

The next 400 m was reported to have limited habitat diversity due to the channelised nature of the tributary. Fish are mostly limited to scour pools downstream of culverts. As is described above, the culverts are poorly designed by current standards. Should the proposed reclamation not go ahead, the culverts will need to be reconstructed. If Environment Southland guidelines for culvert installation are followed, the plunge pools will be lost as the culvert invert will be below bed level. This will remove the scour pool habitat, which is where fish are currently found in this reach of the stream. This section of

tributary has marginally better aquatic ecology values due to a slightly better low flow regime (1 L/sec flow during the Ryder survey), and the presence of culvert plunge pools.

The loss of this limited amount of habitat will be minor and will be more than mitigated by the implementation of a riparian enhancement programme for the remaining unreclaimed reach of the Higham Tributary and the section of the Waituna Creek that passes through the property. For two culverts on the Waituna Creek, it is proposed to use rocks to build up the bed level of their downstream areas so that the water level on the downstream side is not below the culvert invert level and fish passage is ensured. Enhancing the vegetation in the riparian zone by new plantings of appropriate species will reduce nutrient and sediment load from overland flow and help shade the channel, reducing algal growth. Vegetation losses from riparian plants, particularly leaf and woody material, to surface waters provides habitat for invertebrates and a food source for aquatic invertebrates. This enhancement, where there is a significantly greater flow on the downstream section of the HT and the Waituna Creek, more than compensates for the loss of low quality habitat on the upper 800 m reach of the HT.

### **Cumulative effects on the receiving environment of reclaiming 800m of the waterway**

Existing modification of the HT relates to upstream reclaiming of the entire waterway, extensive drainage in the catchment and ongoing implementation of a mechanical cleaning programme by Council. Further modification is proposed; a further 800 m of the waterway is to be reclaimed by piping. The effect of further modification in the context of existing modification is minor.

The Waituna Creek has a total catchment of c.105 km<sup>2</sup> and c.76 km of waterway is maintained by mechanical cleaning under Environment Southland's management. Natural channels have been straightened and deepened to improve surface drainage within the catchment. This has had a significant effect on channel morphology and habitat, sediment and nutrient movement and continues to do so. The improved surface drainage has facilitated significant subsurface drainage in low lying areas. The maintenance programme is ongoing. The HT and Waituna Creek will be maintained as highly modified waterways in the future. Existing cumulative effects on the wider waterway from ongoing cleaning maintenance include habitat loss, stream bank erosion and related sediment loss. Other existing effects are from critical source areas such as culverts, which lose contaminants to waterways by overland flow.

The entire length of the HT upstream of the property is reclaimed. Further modification through reclamation of the adjoining 800 m on the property will not have any greater effect than the existing situation (which includes the cleaning programme). It will in fact reduce erosion and sedimentation of the wider waterway and reduce contaminant loss to the wider waterway by overland flow. When carried out in parallel with the riparian enhancement programme, the effect of reclamation on the wider waterway will be beneficial; increased habitat, less bank erosion and sediment loss will be some of the effects.

A significant area within the catchment has been intensively drained with tiles and on the better soils, mole drainage. For instance in the HT catchment the entire area above Drakes Hill Road and the Amtink property has been tiled. This equates to 57 hectares. Drainage has resulted in the loss of low lying 'wetlands' where no defined channel existed. The consequences have included reduced "surface" storage, increased flow rates and increased effective soil water holding capacity of the soils.

The margin of the HT along the proposed section to be reclaimed is fully developed farm land. Reclaiming this section will not have any effect on existing drainage and there will be no observable drainage effect on the rest of the catchment. The catchment size is not changing and neither is the gradient of the tributary so there will be no change in water flow rate. The effect of reclamation on drainage properties of the catchment will be less than minor compared to the current situation.



The cumulative effect of the loss of habitat from reclamation of 800 m of low grade habitat on the wider waterway will be more than offset by the proposed riparian improvements in the lower Higham Tributary and in the Waituna Creek. The enhanced habitat in these areas will more than offset the loss of ecology within the proposed section to be reclaimed.

Reclaiming the section will improve water quality by eliminating sediment flow. It will also reduce overland flow directly into the waterway and paddocks will be able to be re-fenced to reduce cow movement and soil compaction. The issue of contaminant loss to the stream by overland flow, which is created by culverts in poor condition, will be resolved.

As a consequence at a catchment level there will be no negative cumulative effects due to the proposed reclamation, but rather a net gain of improved habitat over a waterway length of approximately 2,200 m. This length of waterway has sufficient flow to provide better habitat all year round, unlike the first 800 m of the Higham Tributary which suffers from very low to nil flows during dry periods.

### **Fish and Aquatic Habitat**

The effect of reclamation on fish and the aquatic habitat in the 400 meters of the waterway that provides the most habitat of the stretch of waterway to be reclaimed will be minor. All fish present in this stretch of waterway will be moved downstream prior to reclamation work. This stretch of the waterway currently provides a low level of habitat.

Stream Ecological Valuation (SEV) methodology was used to assess 6 sites on the property by Ryder Consulting Limited. Site H1 is approximately 500 m downstream of Drakes Hill Road and reasonably central in the section to be reclaimed. This site had the lowest overall mean SEV score, and scored slightly lower than the other sites for hydraulic biogeochemical and habitat provision functions.

Macroinvertebrate community index (MCI) scores were also calculated for each site. This index uses the occurrence of specific taxa to determine the level of organic enrichment in a stream. MCI scores for the H1 and H2 sites on the HT were classified as having 'fair' habitat quality while H3 was assessed as having 'poor' habitat. Overall the macroinvertebrate communities in the HT were as expected for the type of habitat present, i.e. small, lowland, agricultural stream, and the taxa found are both common and widespread in similar habitats throughout New Zealand.

A fish survey was undertaken by Ryder Consulting Ltd. One fish (banded kokopu) was found at site H1, in a scour pond below a culvert. No fish were found above site H1, although the flow at the time of approximately 1 L/sec severely limits fish habitat. A banded kokopu and longfin eel were found at site H2 and a banded kokopu and brown trout were found at site H3.

It can be reasonably expected that reclaiming the first 400 m of HT below Drakes Hill Road will have less than minor effects on fish and aquatic habitat, because of the low flow regime which at times is dry. The highly modified nature of the watercourse to allow effective drainage coupled with low to nil flow means reclaiming this section will only result in the loss of what is already poor habitat.

The next 500 m of HT was shown to support three fish species. The effects of reclaiming this section can be considered to be minor. The Ryder report states "Fish were recorded in this reach (i.e. between H1 and H2), however they were sparsely distributed and mostly limited to places where the channel was deeper (e.g. in scour pools below culverts)." It should be noted that the proposed 800 m reclamation reach ends upstream of site H2; it does not include sites H2 or H3. The reach containing H2 and H3 will not be reclaimed.

Prior to work commencing any fish will be moved to the lower section and a temporary fish barrier installed. This will be effected by installing a silt fence of hay bales or similar during the reclamation

work. The work will be done at a period of low flow, which again will reduce the likely number of fish in this section.

The Ryder report also states “The riparian enhancement of approximately 1,300 m of channel and modifications to two culverts to improve fish passage, will mitigate the effects of reclamation of 800 m of the HT.” In fact a riparian planting plan for 2,200 m of the Higham Tributary and Waituna Creek water course length has been prepared so the mitigation available will be much greater than required to offset the loss in low grade habitat from reclaiming 800 m of the tributary.

## **Mitigation**

As outlined in the Ryder report, measures will be implemented to mitigate any potential adverse effects from reclaiming of the Higham Tributary. The measures collectively will avoid, remedy or mitigate any significant adverse effects due to reclamation.

- The Ryder report identified increasing aquatic habitat abundance and fish abundance in the most downstream section (c.100 m) of the Higham Tributary originally proposed to be reclaimed. Based on this finding, this section will not be reclaimed. The proposed reclamation reach is reduced from 900 m to 800 m; it will not occur downstream of point NZTM E1262040 N4849750.
  - Consent for this activity is hereby applied for.
- A riparian planting programme will be implemented. This will include the additional un-reclaimed 100 m reach of the HT, the remaining reach of HT and the Waituna Creek that flows through the property.
  - This activity is permitted under Rule 76 (a) of the pSWLP and resource consent is not required.
  - Rule 44 of the Regional Water Plan (2010) states that the planting of the bed of a modified water course is a restricted discretionary activity. The bed is defined as the space of land which the waters of the river cover at its fullest flow without overtopping its banks.” In this instance, planting will be outside the bed of the water course; the planting activity is a permitted activity and resource consent is not required.
    - Note: If there is conflict between regulatory conditions governing planting and the Riparian Management Plan, regulatory conditions will be followed.
- The Ryder report recommended that potential fish passage issues should be eliminated by improving two existing culverts on the Waituna Creek. Currently the culverts have their inverts well above water level on the downstream side, which impedes fish passage. It is proposed to use rocks to build up the bed level of the downstream areas so that the water level on the downstream side is not below the culvert invert level and fish passage is ensured.
  - Consent is not required for this activity.

### *Mitigation notes:*

The HT and Waituna Creek are both fully riparian fenced, although bank erosion means some maintenance is required on the HT fences. Currently the main vegetation within the riparian margins is grass, although there are gorse and broom plants establishing in places.

The riparian zone will be enhanced by widening in some areas and planting. Because both waterways are mechanically cleaned, planting on both sides of the waterway is not practical. Planting on the “northern side” of each water way will improve shading and contribute to the aquatic habitat for

invertebrates and fish through the contribution of leaf and woody material. It will also aid bank stabilisation.

A Riparian Management Plan has been prepared to cover the full length of the HT that is not proposed to be reclaimed and the full length of the Waituna Creek that runs through the property. In total 10 planting zones have been identified as well as three critical source areas, which could be suitable for the development of a nitrogen filter in the future. Currently the applicants are committed to implementing the planting programme. They will consider installing nitrogen filters in the future.

To implement the planting plan will require re-fencing to ensure a 4.5 m riparian width and the planting of 5,645 plants. Included are 1,840 *Carex Secta*, 450 swamp flax, 225 Black Matipo, 300 toetoe, with the balance made up of Chatham Is Akeake, Manuka, Cabbage trees and broad leaf.

A copy of the Riparian Management Plan is appended which details the planting zones and plant layout. Assuming that a consent is granted to allow the reclamation of 800 m of the HT, planting will get underway in spring 2017.

### **Clarification regarding consent requirements for excavation work**

The removal of aquatic plants, weeds and sediment will occur as part of the proposed reclamation work. There is the potential for stream disturbance and the loss of sediment to water as a consequence of the earth works.

It will be unnecessary to dam or divert water away from the work area when reclamation work commences and minimal sediment will be discharged to water as a consequence of the reclamation work. The work will only be carried out when conditions are dry; much of the upper reach of the water course will have minimal flow or no flow whatsoever. The downstream section will have very low flow. There will be minimal water present to dam or divert. The work involved in reclamation is similar in nature, scale and effect as the mechanical cleaning process that is undertaken every three years as a permitted activity (outlined below). The schedule of reclamation work is described in the following section.

Given the dry nature of much of the stream bed, the very low water level and flow of the downstream section and the efficient pipe laying process, which is similar in nature, scale and effect to the existing drainage maintenance programme, there will be minimal disturbance that could result in the loss of sediment to water or that would necessitate the diverting or damming of the water course prior to the earth works. As such applications for resource consent to dam or divert water, or to discharge to water are deemed unnecessary.

The proposed work is similar in nature, scale and effect to the existing drain cleaning programme carried out every three years by Council. This meets Rule 78 (a) of the pSWLP, which permits the removal of aquatic weeds, plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall and any associated bed disturbance and discharge resulting from the carrying out of the activity provided a number of conditions are met. In this instance Rule 78 (a) conditions are met; the removal of aquatic plants and sediment is a permitted activity and resource consent is not required.

Similarly Rule 46 (a) of the operative Regional Water Plan permits the removal of aquatic weeds, plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall and any associated bed disturbance and discharge resulting from the carrying out of the activity provided a number of conditions are met. In this instance all Rule 46 (a) conditions are met; the removal of aquatic plants and sediment is a permitted activity and resource consent is not required.

**Bylaw approval for reclaiming part of a waterway that undergoes Council drainage maintenance**

An "Appendix 1 – Bylaw Approval Application Form" for approval for reclamation work has been submitted with the consent application. This relates to the Southland Flood Control Management Bylaw (2010).

**5. Application for Land Use Consent for works in the beds or margins of watercourses or lakes**

**Application for Land Use Consent for works in the beds or margins of watercourses or lakes**

**(PART B)**

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

Reclamation the bed of a water course

**2. What duration of resource consent is sought?**

2 years

**3. What is the name of the water body within which these works will take place?**

Higham Tributary (HT), Waituna Creek.

**4. Please describe how the works will be carried out.**

The process of reclamation of 800 m of the HT includes the following:

Stripping the topsoil from either side of the HT for replacement later.

Removing silt from the tributary bed and ensuring an even grade for pipe installation.

Cutting a trinket in the tributary bed to lay the pipe on and lay the pipe, 330 mm diameter.

Connecting any branch tiles to the pipe.

Backfilling with filter gravel, ie 10 mm to 25 mm in size to a depth of 500 mm.

Backfill with subsoil and cover with topsoil.

Resow in pasture.

An inlet structure will be created at the property boundary with Drakes Hill Road.

Inspection points will be installed at fence lines.

Reclamation will be from the top end down so that aquatic life can move downstream ahead of the work. Fish will be physically relocated out of the work zone to a downstream location.

Work will be undertaken during low flow periods, the upper reach, 400 m or more, is virtually dry during low flow periods.

**5. Is any damming or diversion of water required as part of the proposed works?**

No

**6. Please state the proposed date of commencement and completion of works, and described the hours of operation.**

---

*Dairy Green Limited, 10 Kinloch Street, PO Box 5003, Waikiwi, Invercargill 9843*

*Phone 03 215 4381*

*Email: dairygreenltd@xtra.co.nz*

The work will take place during normal rural contracting hours, typically 7.00 am to 6.00 pm, up to 6 days a week. The work will start as soon as the consent is granted and upon arrival of the PVC pipes, subject to suitable low flow conditions.

**7. Are any of the following features found within the existing environment of the proposed activity?**

(a) Yes, there is some in-stream life. (b – f) no See Ryder aquatic ecology assessment for further details.

**8. In addition to the above description of the existing environment, please provide details on the following.**

Also see Ryder aquatic ecology assessment.

**Higham Tributary form.**

The tributary was excavated last century and straightened to its present location.

The tributary is deeply incised with near vertical banks from years of mechanical excavation.



The bed is predominantly silt and is aggrading from bank erosion and weed growth. Currently this is removed 3 yearly, the spoil from the last cleaning is shown below.



The tributary banks are prone to erosion because of their near vertical profile. The following photo shows a section of bank that has slumped.



**9. How will the proposed works / structures alter river flows during flood or low flow events?**

Tributary flows will not be changed as a consequence of this work. The PVC pipe will cater for in excess of 13 mm rain in 24 hours on the upstream catchment which is more than the upstream tile network will cater for.

**10. How will the proposed works affect river form? How will the proposed works affect the overall river catchment?**

There will be no change to the flow regime downstream of the piped section. Therefore there will be no change in hydrology. Water quality will be better since there will be no sediment movement from banks slumping.

**11. Are there any structures in / over / next to the water body in the vicinity of the proposed works?**

There are four culverts to allow stock access across the tributary. These will be removed as part of the pipe installation. The invert of 2 of the culverts is higher than desirable so this problem will be rectified at the same time.

Two culverts are predominately used. The topography means it is not easy diverting stormwater away from the tributary at these culverts. This problem will be eliminated with the reclamation of the tributary.

**12. Pursuant to Schedule 4 of the Resource Management Act, 1991, there are a number of matters that must be addressed by an assessment of environmental effects. Please discuss what effects the proposed activity will have on the following:**

- (a) There will be not be negative effects on neighbours or the community. The pipe design will ensure no less outfall for upstream neighbours.  
The tributary is not used for food gathering and has limited aesthetic value in its present state. Water quality will be improved with reduced silting. The transport of nutrients by overland flow into the waterway or by transport on clay particles will be dramatically reduced.
- (b) The current tributary line will be replaced with pasture. This will be compensated for by the planting of the lower reach of the Higham tributary and the Waituna Creek with riparian planting.
- (c) The Ryder report describes the ecosystems involved. The upper 400 m of the tributary is of very low habitat value because it virtually dries up during summer. The next 400 m has limited habitat value, primarily limited to plunge pools below culverts.
- (d) Reclamation of the tributary 800 m of the tributary will have minimal effect on the natural and physical resources that the tributary provides. This will be more than compensated for by the proposed riparian work on the lower section and the Waituna Creek.
- (e) The reclamation work will be done during a low flow period to limit sediment movement. A silt trap can be excavated in advance of the work being done to catch silt at the end of the pipe section.

The noise of the machinery involved will have minimal effect on others. It is machinery commonly used in the rural environment and has to meet reasonable noise standards for operator comfort.

- (f) No hazardous substances are involved

**13. Please include a description of the monitoring or mitigation (including safeguards and contingency plans where relevant).**

The flow of the Higham Tributary will be monitored so that the proposed works takes place during a low flow period. If heavy rain causing a rise in flow rates occurs, work will stop until low flows return, a silt trap will be excavated at the end of the proposed work to reduce the risk of silt flowing downstream.

The work will happen progressively with the PVC pipe backfilled as soon as practical after installation to provide a filter around the pipe. This will limit silt movement, particularly if there are rain events during the work.

Likewise the subsoil and topsoil backfill will be placed as soon as practical after the pipe is installed to allow rapid reinstatement of the site. The site will be regressed as soon as possible to the lower the risk of overland sediment movement.

The site will be temporarily fenced with electric fencing to keep stock off while the grass is establishing.

**14. Please describe how you will minimise the release of silt, sediment, concrete and other contaminants into water.**



The work will be undertaken when tributary flows are as low as possible. A silt trap will be installed to reduce the risk of silt loss downstream. The work will take place during periods of fine weather. This is necessary since vehicle access is required to the site. This will reduce the risk of sediment loss downstream.

**15. Please include a description of any possible alternative location or methods for undertaking the activity and why these alternatives have not been selected.**

A potential alternative to reclamation of the tributary would be to re-batter the banks. Because of the depth of the tributary a large volume of spoil would be involved. The process would require the stripping of top soil several metres back from the proposed tributary bank edge, excavating the bank and spreading of spoil, cultivation and levelling and then topsoiling and resowing.

Assuming the spoil wasn't carted away a strip in the order of 30 m wide would be involved, and an area in the order of 2.5 ha. Approximately 0.64 ha of land would be lost and no longer be available for farming. The difference between re-battering the tributary and reclamation of the tributary is in the order of 1.0 ha of land permanently lost for the 800 m involved.

Re-battering the tributary does not solve the problem of a relatively narrow strip of land on the south side of the tributary, which is more prone to compaction from the grazing cows because of its shape. At its narrowest from the tributary bank to the south boundary fence, the paddock is only 40 m wide. Long narrow paddocks result in more cow traffic up and down the paddock, compared to square paddocks. Reclamation of the tributary will allow refencing and better shaped paddocks.



environment  
SOUTHLAND

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

Telephone (03) 211 5115  
Fax No. (03) 211 5252  
Southland Freephone No. 0800 76 88 45

### WRITTEN APPROVAL FORM

To: Environment Southland  
Private Bag 90116  
Invercargill 9840

**Affected person's written approval to an activity that is the subject of a resource consent application**

**To be completed by the person requesting approval**

Applicant: Hennie + Johanna Amtrik

Application Number: \_\_\_\_\_ Officer in Charge: \_\_\_\_\_

Type of Resource Consent: Land use consent to tile a waterway

Proposed Activity(ies): Tiling a section of the Higham tributary, Waituna Creek

Location: Waituna Creek

**To be completed by the person giving approval:**

Name: Bevan Pirie

and/or Organisation: for Drakes Hill Farming

Street/Road Address: 206 Drakes Hill Road R.D.1 Invercargill

\*I am the owner/occupier of the following property and have authority to sign on behalf of all other owners/occupiers of the property: \_\_\_\_\_ \*Delete if not applicable

I/we have studied the application for resource consent and give my/our written approval to the proposed activity/activities.

In signing this written approval, I/we understand that the consent authority must decide that I/we am/are no longer an affected person(s), and the consent authority must not have regard to any adverse effects on me/us.

[Signature]  
(Signature)

7/3/16  
(Date)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**Notes: If you do not understand this form and/or any details regarding the application for resource consent, then you should not provide your written approval.**



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Private Bag 90116  
Invercargill 9840

**Affected person's written approval to an activity that is the subject of a resource consent application**

**To be completed by the person requesting approval**

Applicant: Henrie + Johanna Amrich

Application Number: \_\_\_\_\_ Officer in Charge: \_\_\_\_\_

Type of Resource Consent: Land use consent to file a veterinary

Proposed Activity(ies): Tiling a section of the Highham tributary, Waituna Creek

Location: Waituna Creek

**To be completed by the person giving approval:**

Name: Peter + Yuana Phiske

and/or Organisation: Hillview Trust

Street/Road Address: 160 Hills Road Waituna RDI Ingl

\*I am the owner/occupier of the following property and have authority to sign on behalf of all other owners/occupiers of the property: \_\_\_\_\_ *\*Delete if not applicable*

I/we have studied the application for resource consent and give my/our written approval to the proposed activity/activities.

In signing this written approval, I/we understand that the consent authority must decide that I/we am/are no longer an affected person(s), and the consent authority must not have regard to any adverse effects on me/us.

P.H. Phiske 11/3/16  
(Signature) (Date)

Phiske 11/3/16  
(Signature) (Date)

**Notes: If you do not understand this form and/or any details regarding the application for resource consent, then you should not provide your written approval.**



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### WRITTEN APPROVAL FORM

To: Environment Southland  
Private Bag 90116  
Invercargill 9840

**Affected person's written approval to an activity that is the subject of a resource consent application**

**To be completed by the person requesting approval**

Applicant: Hennie + Johanna AMTINK

Application Number: \_\_\_\_\_ Officer in Charge: \_\_\_\_\_

Type of Resource Consent: Land use consent to tile a waterway

Proposed Activity(ies): Tiling a section of the Higham tributary Waituna Creek

Location: Waituna Creek

**To be completed by the person giving approval:**

Name: Bobby Woodcock

and/or Organisation: Inglisbrook FARMS LTD

Street/Road Address: 53 MOKOTIA ROAD

\*I am the owner/occupier of the following property and have authority to sign on behalf of all other owners/occupiers of the property: \_\_\_\_\_ \*Delete if not applicable

I/we have studied the application for resource consent and give my/our written approval to the proposed activity/activities.

In signing this written approval, I/we understand that the consent authority must decide that I/we am/are no longer an affected person(s), and the consent authority must not have regard to any adverse effects on me/us.

[Signature] 7/3/2016  
(Signature) (Date)

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
(Signature) (Date)

**Notes: If you do not understand this form and/or any details regarding the application for resource consent, then you should not provide your written approval.**

## Scandrett Rural

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**From:** Gary Morgan <gary.morgan@es.govt.nz>  
**Sent:** Monday, 27 March 2017 4:02 p.m.  
**To:** Danielle Petricevich  
**Cc:** 'scandrettrural@xtra.co.nz'  
**Subject:** Amtink-proposal to pipe Highams Trib.

Hi Danielle,

Thanks for the opportunity to accompany you to Hennie Amtink's on Thursday 23/3 and view the proposed piping of the Higham tributary. My comments follow:

- the location of the tributary from Drakes Hill Road through the first 4 paddocks makes efficient and practical farming difficult. These paddocks are bisected by the tributary and on the south side of the tributary are quite narrow. Unless the milking herd is split the number of cows in these narrow paddocks is likely to increase soil compaction and reduce infiltration rates resulting in the possibility of increased overland flow into the tributary.

-the stock crossings over this reach are in poor condition and would need upgrading. There are perched culverts and unless nibs are installed a high risk of contaminants flowing off the crossing directly into the tributary

-the tributary from Drakes Hill Road for a distance downstream of around 800m is narrow and over deepened through repeated cleaning events. There are repeated examples of bank slumping which will generate sediment that will be transported downstream. There is no riparian vegetation other than pasture grasses.

-At the recommended downstream limit of piping shown in Fig 7 of the Ryder Consulting report the channel morphology changes from a narrow, deep, incised drain with a grass covered bed to a wider, more gently battered drain with a monkey musk/water cress covered bed. It seems to be the obvious point where piping stops and the drain is left open. This coincides with increased habitat values as described in the Ryder report.

-Planting riparian vegetation on the true right bank of the open section of the Higham Tributary to provide shading and filter overland flow will improve habitat within the tributary.

-Further riparian planting on the Waituna Creek will also improve in-stream habitat. The Amtinks and their staff are doing a great job in managing pest plants and ensuring good vegetative cover on all stream banks across the property.

-A riparian planting plan detailing species, planting design, establishment techniques and time frame needs to be drawn up and the implementation of same be a condition of any consent approval. ES Land Sustainability can coordinate the preparation of this planting plan.

- It is noted that sediment traps would be used to mitigate sediment loss from the piping operation if approved. My recommendation is to utilize silt fence and pegged hay bales in conjunction with the sediment traps

Cheers

Gary Morgan

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**[ No Subject ]**

Monday, 4 April, 2016 2:59 PM

**From:** "Gunther Family" <highfieldbj@ruralinzone.net>

**To:** amtinknz@xtra.co.nz

To Whom it may concern,

I would like to voice my opinion on the section of the upper Waituna tributary which Mr Hennie Amtink would like to pipe in.

I feel this would benefit water quality downstream as the first 900 metres was very silty, and prone to slumping of the drain banks.

Also I noticed from here down in the 900 metres of the drain bed slowly changed to a combination of silt, clay and some gravel (as you may see by the piles I left if they re still there). When cleaning I make a concerted effort to return as many native species and trout back to their habitat as possible. However, I did notice this section contained almost no fish.

I feel piping this section would be a great benefit to the future wellbeing of the Waituna Upper Tributary.

I can be contacted on 0272289371

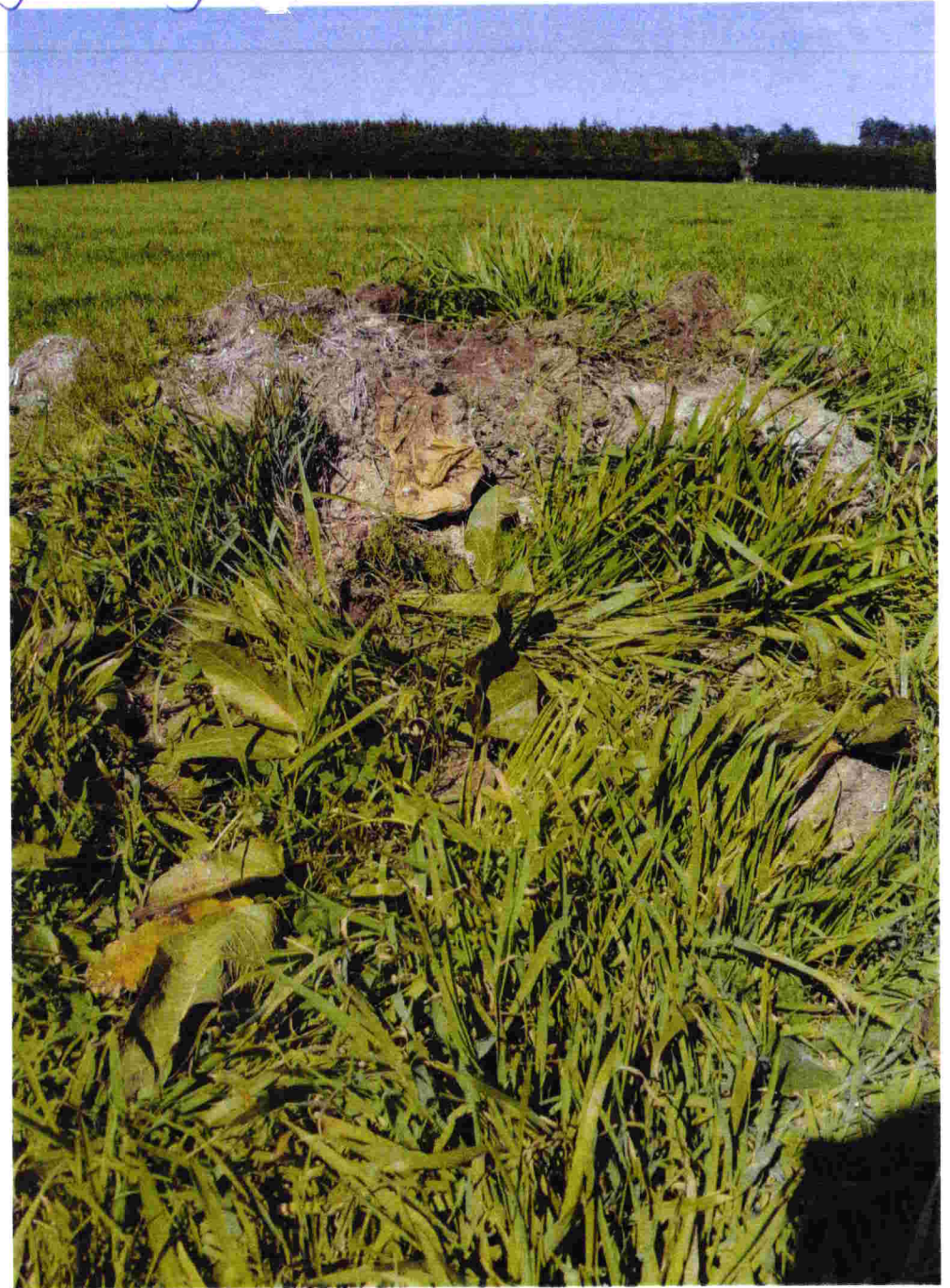
Regards,

Brent Gunther  
Gunther Excavating Limited.

Sediment /s removed during cleaning as per Brent Gunther's email



Sediment/s. removed during cleaning - as per Brent Gunther's email







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



R. W. Muir  
Registrar-General  
of Land

**Identifier** SL199/113  
**Land Registration District** Southland  
**Date Issued** 10 June 1958

**Prior References**

SL22/63

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**Estate** Fee Simple  
**Area** 52.4473 hectares more or less  
**Legal Description** Section 27 Block I Oteramika Hundred

**Proprietors**

Gerrit Jan Hendrik Amtink and Gerritje Johanna Amtink

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**Interests**

10081686.6 Mortgage to Westpac New Zealand Limited - 2.6.2015 at 3:12 pm

Identifier

SL199/113

