

Environmental Compliance Monitoring Report **2011-12**

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environment
SOUTHLAND



Environmental Compliance Monitoring Report

2011/12

Report by –
Environment Southland
Compliance Division

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Environment Southland is the brand name of
the Southland Regional Council



Foreword

This year's report has undergone a significant change in its format in an attempt to make it more user-friendly and easier to read and understand. There is less technical jargon and less information about the larger industries in Southland.

This smaller, simpler document places more emphasis on compliance performance, while still ensuring that the key information is included. Hopefully this will appeal to a broader audience.

There has been a significant improvement in compliance by the dairy industry over the past twelve months, which is very encouraging. When comparing around the same number of inspections with the previous year, the number of non-compliant inspections dropped by 281.

Several factors have contributed to this improved performance including the number of upgraded effluent systems, and the increase in support by industry stakeholders to individual farmers to improve the industry's environmental footprint. We look forward to a continuing improvement in the coming year. We also saw a significant improvement in the effluent spills on Southland's roads during the annual Gypsy Day movement of dairy cows around and out of the province for winter grazing. The Council thanks the transport industry, DairyNZ and Federated Farmers for their combined advertisements on standing stock before transporting them. The clear consistent messages obviously had an impact.

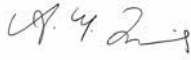
Our pollution hotline received 960 calls in the past year; a similar number to the previous two years, reflecting the public's continuing concern over activities they see as harmful to the environment. The resources needed to immediately respond to such a consistently high number of calls has made it necessary to prioritise calls into high, medium and low categories to ensure all high priority incidents are dealt with; 455 calls fell into this category last year.

On a less positive note, consent compliance by the territorial authorities has not yet reached the required level of compliance across their various sewage treatment systems. It is noted that there will be significant capital expenditure on a number of the non-compliant sewage treatment systems over the next few years. It is our expectation that councils will aim for 100 per cent compliance with all of their schemes.

Environment Southland has set an ambitious target of a 10 per cent improvement in water quality by 2020. This will require improved performance and commitment from the entire Southland community if we are to be successful.

The Council thanks Mark Hunter and the members of the Compliance Division for their commitment and dedication over the past year. They are the public face of Environment Southland for our consent holders and their role is not without its challenges; attempting to achieve our aim of improved

environmental outcomes while ensuring the standards Council has set are achieved in a fair and equitable manner.



A M Timms
Chairman
Environment Southland



N G Horrell
Chairman
Environmental Management Committee

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Part A

Inspection and Audit Activities

1.0 Agricultural Audits

1.1 Dairy Inspection Overview

The discharge of dairy farm effluent to land, for properties that milk more than 50 cows and less than 600 cows, is a controlled activity and needs a consent.

The Resource Management Act 1991 (RMA) Section 87A outlines the classes of activities and says:

a controlled activity, a resource consent is required for the activity

Properties that milk more than 600 cows fall into a different category. The application of effluent on a property of this size is a discretionary activity. The RMA 1991, Section 87A says:

a discretionary activity, a resource consent is required for the activity and—

- (a) the consent authority may decline the consent or grant the consent with or without conditions; and*
- (b) if granted, the activity must comply with the requirements, conditions, and permissions, if any, specified in the Act, regulations, plan, or proposed plan.*

This approach differs from some other regional authorities that have made the discharge of dairy effluent to land a permitted activity through Regional Plan rules.

An inspection can have five possible outcomes:

1. *Fully Compliant* – complies with all conditions of consent;
2. *Minor Non-compliance* – has not complied with ‘administrative’ conditions of consent;
3. *Marginal* – there is evidence that an incident is likely, or has happened, but the environmental effect does not warrant a significant non-compliant rating;
4. *Significant Non-compliance* – more than the consented number of cows;
5. *Significant Non-compliance* – requires re-inspection.

Two types of inspection are conducted by staff during the year to assess compliance with discharge permits. These are on-farm inspections and aerial inspections with ground follow up, if required.



1.1.1 Discharge Consent Inspections

During the 2011/12 year, 1,112 effluent discharge consent inspections were completed (Figure 2).

It is important to note that the majority of consent holders inspected were fully compliant with consent conditions and were given a rating of 1.

The introduction of new technologies has been driven by the combination of industry wanting better performance and consent requirements. Recently converted properties, and those renewing their consent, are expected to operate at a higher standard than those with a consent that still has a few more years to run. Renewed consents are resulting in an increase in workload as more inspections are applied to consents. It is expected that there will be a further increase in 2012/13. Early indications suggest that surface water sampling will increase by 250 samples in that year.



Figure 1 - Example of a typical travelling irrigator



Discharge Permit Inspection

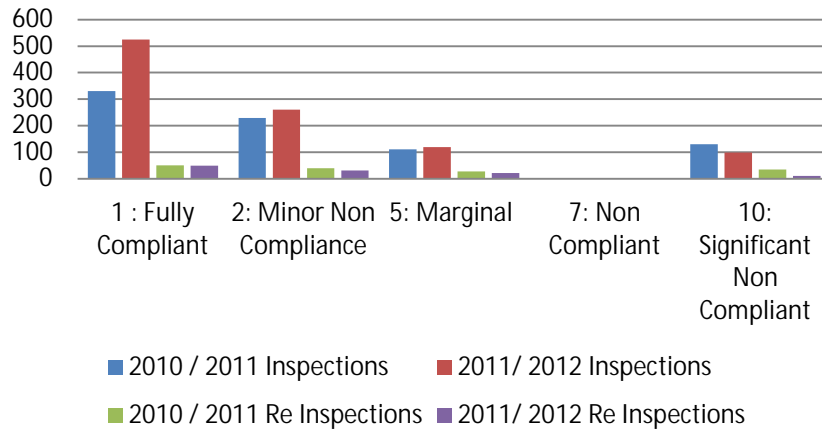


Figure 2 - Comparison of on-site dairy inspection outcomes over the last two years

1.1.2 Aerial Inspection

The aerial inspections provide a different perspective of the consent holders' activities.

Any issues identified during these inspections are followed up with an onsite inspection to confirm if there is any further action needed. Aerial inspections cover a lot of area in a very short time frame and are therefore a cost effective method of completing inspections (Figure 3).

Aerial Discharge Permit Inspections



Figure 3 - Comparison of aerial dairy inspection outcomes over the past two years



1.1.3 Wintering Pad Inspections

There are 87 current consented wintering pads in Southland. These are usually inspected annually, or as the consent requires (Figure 4).

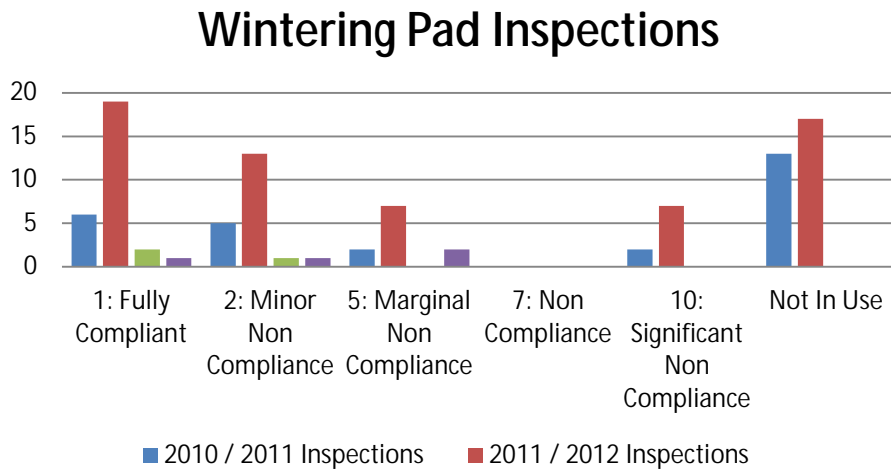


Figure 4 - Comparison of dairy wintering pad inspection outcomes during the past two years



1.2 Dairy Groundwater Quality Sampling

In very simple terms, the rain falls from the sky onto land. Some of this runs off directly into the waterways, some is taken up by plants, some evaporates back to the atmosphere and some percolates through the soils into the aquifer system.

It is the portion that percolates through the soils, combined with nutrients and effluent applied to the land, either directly from an animal or via an irrigation system that can carry contaminants into groundwater.

Groundwater sampling is a tool that is used to check compliance with dairy effluent discharge consents. The purpose is to look for and measure changes in the groundwater quality in the area where effluent is applied. Water samples are collected and analysed. The results from a three to five year period can give a reasonable indication of the effects effluent application is having on groundwater. If a deterioration is noted, further investigation will be required to try to identify the possible cause of the changes and whether the change is associated with land use activities in the area.

In Southland there are 196 dairy discharge consents where groundwater inspection is a requirement. Samples are collected from sampling bores located in the shallow aquifers under the effluent disposal fields. This sampling typically occurs twice a year, in November and April. Groundwater quality does not change as frequently or as rapidly as surface water quality, so does not need to be sampled as often. The results for each sampling period are shown in Figure 5.

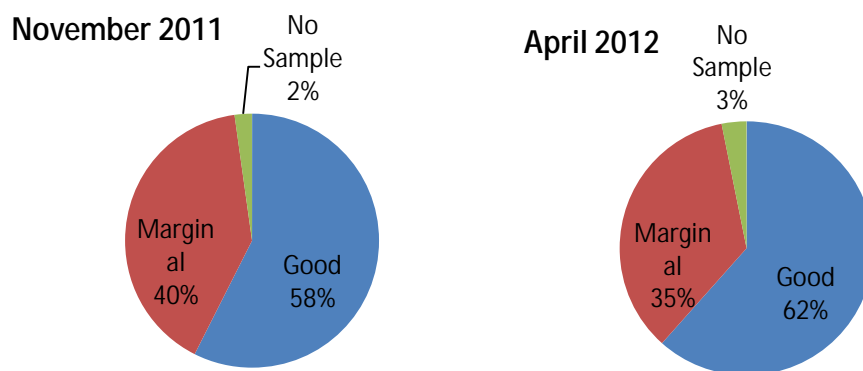


Figure 5 - Groundwater sampling results November 2011 and April 2012

Water samples containing *E. coli* levels less than 1MPN/100 mL, or Nitrate Nitrogen levels less than 9g/m³, or a series of results that do not show an increasing trend in the level of Nitrate (an increasing trend is defined as: an initial Nitrate Nitrogen concentration in the order of 6g/m³ and consistently increasing over a three to five year period) - results that do not comply with this are graded as marginal.



In November 2011 there were 27 samples with a high Nitrate Nitrogen result and eight with both high Nitrate Nitrogen and high *E. coli* results. In April 2012 there were 24 samples with high Nitrate Nitrogen, with five of these having a high level of *E. coli*. These results were discussed with Environment Southland groundwater scientists to determine which sites reflected the background aquifer levels and which required further investigation. All consent holders have been notified of their results and those with high Nitrate levels in groundwater have been advised that Nitrogen inputs on their property need to be carefully managed to avoid them having an impact on groundwater.

There were 41 samples in November and 30 in April with *E. coli* results measuring greater than 1 MPN/100 ml. Insufficient well-head protection is the most likely source of elevated *E. coli* levels and all consent holders with poor *E. coli* results from their bores have been requested to investigate this as a possible source of contamination. Should future groundwater results return elevated levels of *E. coli* from the same bore, staff will consider what action is required to ensure compliance with consent conditions. If well-head protection appears sufficient, and future samples continue to return unsatisfactory results, the source of contamination will need to be investigated further. Sampling from a large diameter well rather than a monitoring bore can also increase the likelihood of contamination. Consent holders with groundwater monitoring as a condition in their consents are encouraged to install monitoring bores.



1.3 Dairy Surface Water Quality Sampling

Surface water sampling is a requirement of 537 current effluent discharge consents in Southland. The location of the sampling is dependent on where the discharge is occurring and whether a waterway is likely to be at risk. Most discharge consents require sampling up to three times a year. Where possible, samples are collected in conjunction with a routine inspection to minimise costs to the consent holder.

Water Quality Results

There were 1,218 site visits made to properties for sampling purposes. Some properties are visited multiple times depending on consent conditions. The total number of consents requiring samples increased from 517 in 2010/11, to 537 in the 2011/12 season.

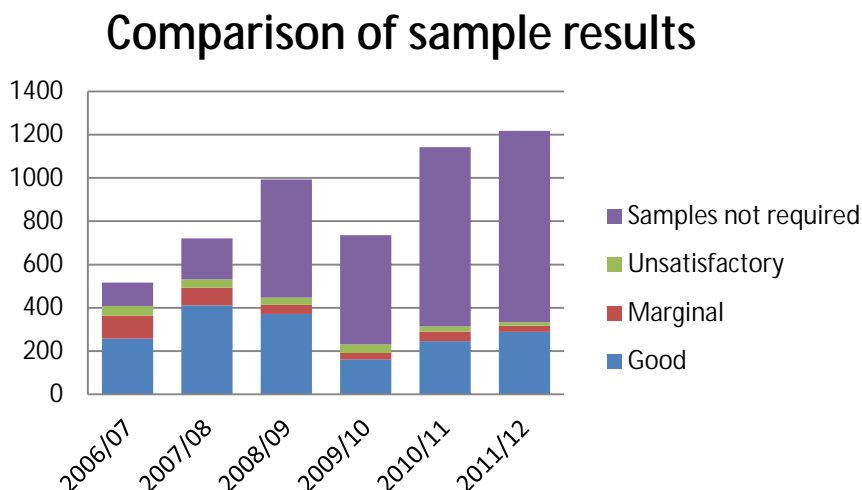


Figure 6 - Dairy surface water sample results

Of the 1,218 sites visited, 334 samples were taken, an increase of 20 compared to last year. The results are interpreted with reference to national standards and guidelines, trends over time for the property and the receiving waterway, soil, weather and other relevant factors. The samples are then graded as either 'good', 'marginal' or 'unsatisfactory' (Figure 6). It should be noted that these grades are based solely on water quality.



Surface water 2011/12

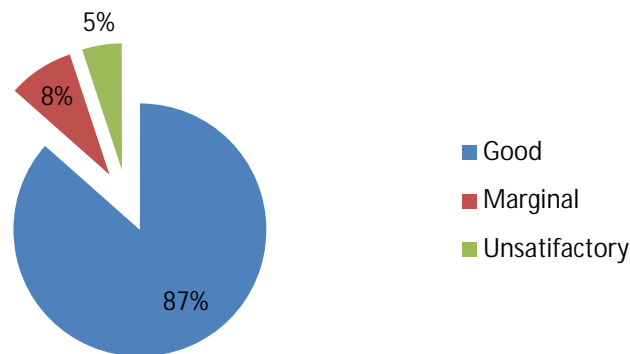


Figure 7 - Surface water results

Of the 314 samples taken, 87 per cent of those received a 'good' grade, indicating no or minimal impact on surface water quality, which is an improvement of 9 per cent on last year. Eight per cent received a 'marginal' grade, indicating there were some issues on the property, and 5 per cent received an 'unsatisfactory' grade, showing activities on the farm appeared to be impacting on surface water quality (Figure 7).

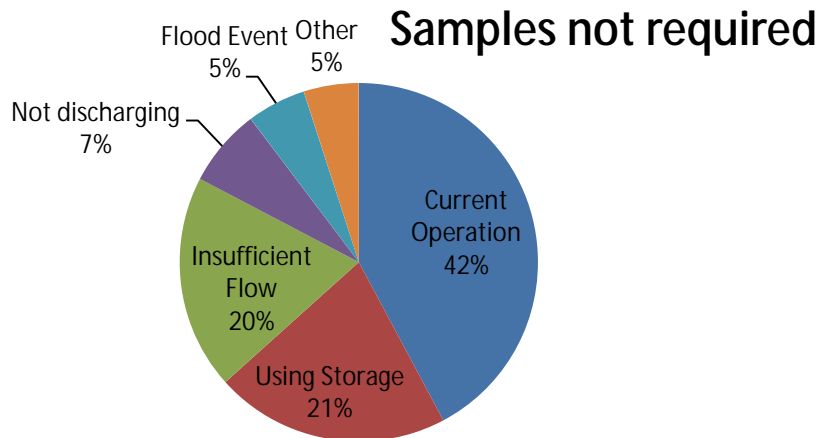


Figure 8 - Reasons why samples were not required

The number of properties where samples were not able to be collected this year (samples not required) was 73 per cent of the total properties visited. Almost half of these (373) were due to the irrigator being in a position where the sampler decided that the waterway was, or would not be impacted by any discharge from the effluent system (Figures 8 and 9).

Further factors that meant no sample was collected are:

- ∅ insufficient flow (171) to take a sample; or



Ø farmers were using storage facilities and had not irrigated for some time prior to the visit (187).

These are all indicators that the majority of properties requiring sampling have good management systems able to effectively dispose of effluent without adverse effect to the environment.

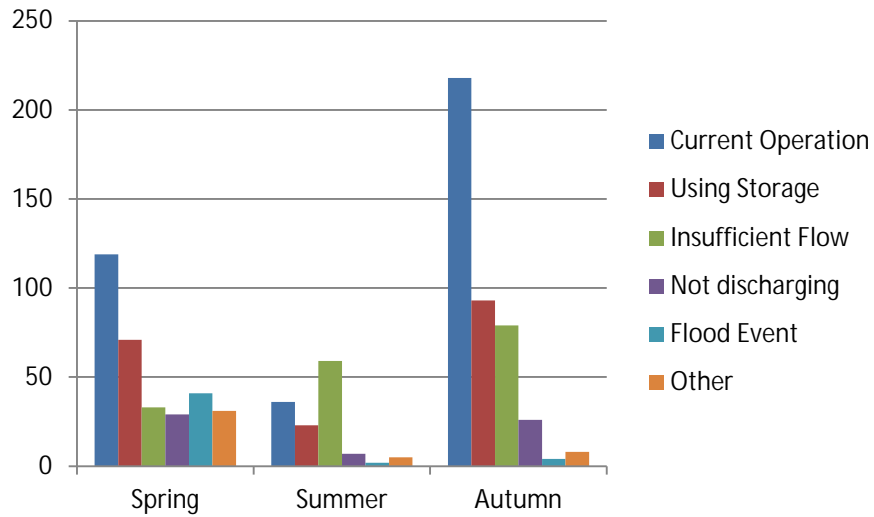


Figure 9 - Seasonal breakdown of the reasons why samples were not required



1.4 Irrigation Water Take Inspections

During the 2011/12 irrigation season there were 85 current irrigation consents in Southland. Of these consents, 74 were abstractions from groundwater and 11 from surface water takes. Consent holders were required to submit records specifying the volume of water taken each day to show that they were compliant with their daily abstraction limit. It was also a condition for consent holders to contact Environment Southland with their intention to commence irrigation.

Most of the irrigation in Southland is for pasture growth, however there were five new consents granted this year for crop irrigation (Figure 10).

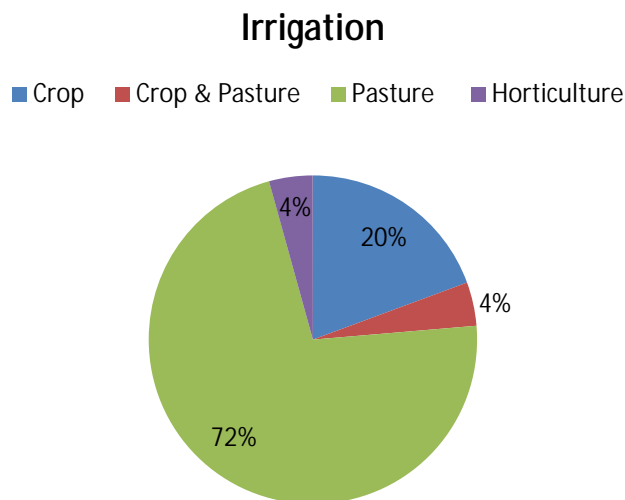


Figure 10 - Irrigation activities in Southland

Reporting Compliance

Environment Southland received notification of either commencement or that a consent would not be exercised from 39 per cent of consent holders. This is a considerable reduction on the previous year. Consent holders need to be aware that, as a consent condition, notification of commencement is still a requirement, even though irrigation data is telemetered.

Abstraction records were received from 82 per cent of consent holders, which is an increase on last year's return. A number of consent holders are now required to supply abstraction data electronically.

Of the data that was received, all but one of the consent holders with water consents for irrigation were compliant with their annual abstraction limits. However, there were a small number of consent holders that exceeded their daily limits.



Irrigation 2011/2012

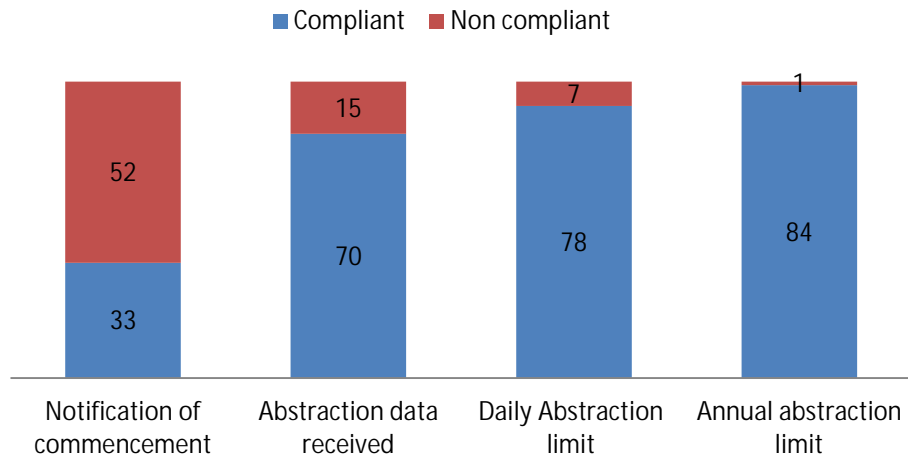


Figure 11 - Irrigation performance

Compliance with Consent Requirements

The supply of full and accurate data is essential for effective management of the region's water resources. The information provided by consent holders is used during the review, renewal and granting of new consents. A lack of data, or the existence of a poor performance history for a site during this time may impact on the flexibility of conditions within the consent.

Concern has been raised by the Environment Southland groundwater scientists that the quality of water abstraction data supplied by consent holders to Environment Southland does not meet the National Environmental Standard (NES) for water monitoring.

It is the intention of Environment Southland that all consent holders are made aware of the importance of ensuring their flow meters and monitoring systems meet their consent requirements, as well as the National Environmental Standard (NES) for water metering.

Environment Southland will require all consented irrigation takes to have their meters calibrated to standards required by their consent and the NES; and that the systems be recalibrated at five-year intervals. This will need to be conducted by an approved supplier.

All consented irrigation takes will be required to provide evidence that the meter and connecting systems are fully compliant with the NES, and are tamperproof.



2.0 Industrial Audits – Major Industries

2.1 Meat Industry

2.1.1 Alliance Group Limited

Alliance Group Ltd operates three meat processing plants in Southland at Lorneville, Makarewa and Matura. The compliance performance for the three plants during the 2011/12 year was assessed against the current resource consents.

What We Look At

The consents issued for the Alliance Group Limited's plants permit the discharge of nutrients or chemicals into nearby waterways. The quantity it can discharge is restricted by the consent and compliance with these requirements is audited.

Some key elements that are measured are:

- Ø **Dissolved Reactive Phosphorus (DRP):** a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.
- Ø **Carbonaceous Biological Oxygen Demand (CBOD₅):** a measure of the ability of contaminants to adversely remove oxygen from water.
- Ø **Water Clarity:** the distance that can be seen through the water. The higher the clarity the greater the visibility in the water.

Table 1 – Alliance Group Limited – consent performance summary

Plant locations	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Lorneville		ü		Six out of 21 samples breached clarity limits of the consent
Makarewa	ü			
Matura		ü		There was one DRP loading non-compliance; two CBOD ₅ loading events, one event where consent parameters were missed and two confirmed objectionable odours.



Lorneville

Consents

Alliance Group Limited holds eight resource consents for meat processing at its Lorneville plant.

They include:

- to discharge waste water to the Makarewa River;
- to take surface water from the Makarewa and Oreti River;
- to discharge sludge to land;
- to discharge contaminants to air.

The meat processing effluent quality at the Alliance Group’s Lorneville plant marginally exceeded the quality standards set out in the consent on six of 21 occasions.

Once identified, Alliance alerted Environment Southland and investigated the problem to address and eliminate the issues.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Lorneville plant.

Table 2 - Alliance Group Limited, Lorneville Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



Makarewa

Consents

Alliance Group Limited holds seven resource consents for meat processing at its Makarewa plant.

They include:

- to discharge waste water to the Makarewa River;
- to take groundwater from a bore;
- to take surface water from the Makarewa River;
- to discharge waste water and effluent to land;
- to discharge contaminants to air.

The meat processing effluent quality at the Alliance Group Limited's Makarewa plant met all consent requirements.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the plant at Makarewa.

Table 3 - Alliance Group Limited, Makarewa Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	N/A
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



Mataura

Consents – Mataura

Alliance Group Limited holds eight resource consents for the purpose of meat processing at its Mataura plant.

They include:

- to discharge wastewater to the Mataura River;
- to discharge cooling water to the Mataura River;
- to discharge sludge to land on selected properties;
- to divert water.

The meat processing effluent quality at the Alliance Group Limited’s Mataura plant marginally exceeded the quality standards set out in the consent on three occasions, in March, April and June 2012.

Once identified Alliance staff alerted Environment Southland and investigated the problem to address and eliminate these issues.

Complaints and Self-reported Incidents

Environment Southland staff investigated two incidents related to objectionable odours from the plant. Both incidents resulted in infringement notices being issued.

Table 4 - Alliance Group Limited, Mataura Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.1.2 Blue Sky Meats (NZ) Limited

Consents

Blue Sky Meats (NZ) Limited holds four resource consents for the purpose of meat processing at its Morton Mains plant.

They are:

- to discharge contaminants to the ground through the operation of offal pits;
- to take ground water from a bore;
- to discharge wastewater to land via a spray irrigator;
- to discharge contaminants to air.

Blue Sky Meats Limited operates a meat processing plant at Morton Mains, near Woodlands township. The compliance performance for the plant during the 2011/12 year was assessed against the current resource consents.

Complaints and Self-reported Incidents

Environment Southland investigated one incident related to an unauthorised discharge to land and water. Once identified, Blue Sky Meats investigated the problem to address and eliminate the issues. The incident resulted in an infringement notice being issued.

Table 5 - Blue Sky Meats (NZ) Limited – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Morton Mains			0	An incident that occurred on 8 March 2012 resulted in an unauthorised discharge to land and water.

Table 6 - Blue Sky Meats (NZ) Limited, Morton Mains Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.1.3 South Pacific Meats Limited

Consents

South Pacific Meats Limited holds two resource consents for the purpose of meat processing at its Awarua plant.

They are:

- to discharge stormwater containing contaminants into the New River estuary;
- to discharge contaminants to air from the rendering plant, wastewater treatment plant, boiler and associated processes

South Pacific Meats Limited operates a meat processing plant at Awarua, approximately 10 km south of Invercargill. The compliance performance during 2011/12 was assessed against the current resource consents.

The plant was fully compliant with all standards set out in its consents.

Table 7 - South Pacific Meats Limited, Awarua plant – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Awarua		0		Emission assessment of coal-fired boiler completed, but received late.

Complaints and Self-reported Incidents

Environment Southland investigated one significant incident relating to an unauthorised discharge to land in circumstances where it may enter water. This incident is currently before the District Court.

Table 8 - South Pacific Meats Limited, Awarua plant – issues

Issue	Score	Additional information
Provision of data/results	Good	Some delay in receipt of air quality monitoring results.
Responsiveness to issues	Marginal	
Keeping Environment Southland informed of intentions, changes, etc.	Good	



2.1.4 Prime Range Meats Limited

Consents

Prime Range Meats Limited is in the process of applying to renew its consent and is operating under Rights of Continuance under section 124 of the Resource Management Act (RMA) 1991.

The expired consent allowed:

- a discharge up to 1500 m³/day of treated wastewater to the Waikiwi Stream, approximately 500 metres downstream of the West Plains Road Bridge.

The company also holds the following air discharge consent:

- to discharge contaminants to air from a meatworks and rendering plant, including a wastewater treatment system.
site.

Prime Range Meats Limited (PRM) is a meat processing and rendering plant on the banks of the Waikiwi Stream, in Invercargill. The compliance performance during the 2011/12 year was assessed against the current resource consents.

PRM was fully compliant with all standards set out in its resource consent for the discharge of contaminants to water. However, it was non-compliant with the air consent on one occasion, in April 2012, when a discharge of particulate matter from the boiler exceeded the consent limit. PRM has put in place further measures that should make the particulate matter discharge compliant with the consent limits.

What We Look At

A key element that is measured is:

- Ø **Particulate Matter:** the unburnt material that is commonly discharged along with the gas or smoke from a fire or boiler.

Complaints and Self-reported Incidents

Environment Southland received three odour complaints from the public during February and May 2012. Only one of the odours was confirmed, however it was not determined to be objectionable.



Table 9 – Prime Range Meats Limited – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Invercargill		0		One breach of the air consent was recorded.

Table 10 – Prime Range Meats Limited – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



Figure 12 - Prime Range Meats Limited plant – looking south east from West Plains Road



2.2 Dairy Industry

2.2.1 Fonterra Co-operative Group Limited

Consents

Fonterra Co-op Group Limited holds eight resource consents related to dairy processing at its Edendale Plant.

They include:

- to discharge wastewater to land;
- to take ground water from bores;
- to discharge wastewater and stormwater to water;
- to discharge contaminants to air;
- to discharge sludge to land.

Fonterra Co-operative Group Limited operates a dairy processing facility in the Edendale township. The compliance performance for the plant during the 2011/12 year was assessed against the current resource consents.

The effluent from the dairy processing plant was found to have marginally exceeded the Total Suspended Solids (TSS) quality standards set out in the consents five times, during October and November 2011.

During this period the Edendale site was undergoing repairs to the treatment system. These repairs were to enable improvements to the environmental performance monitoring programme in the future.

What We Look At

A key element that is measured is:

- Ø **Total Suspended Solids:** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.

Complaints and Self-reported Incidents

Environment Southland recorded four incidents relating to the Edendale plant. All were self-reported by plant staff and resulted in no discharge of contaminants to waterways or other environmental impact.



Table 11 - Fonterra Co-operative Group Ltd – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Edendale		0		Some non-compliance events occurred where the discharge of plant effluent to the river exceeded TSS limits of the consent and the sludge applied to land exceeded the nutrient loading limitations.

Table 12 Fonterra Co-operative Group Ltd, Edendale Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

2.2.2 Open Country Dairy (NZ) Limited

Consents

Open Country Dairy holds two resource consents related to dairy processing at its Awarua Plant. They are:

- to discharge condensate to a farm drain;
- to discharge contaminants to the air from the milk processing plant and boiler.

Open Country Dairy (NZ) Limited operates a milk processing plant at Awarua, approximately 10 km south of Invercargill. The compliance performance during the 2011/12 year was assessed against the current resource consents.

The only exceedance reported at the plant was between 30 November and 11 December 2011, when Open Country Dairy Limited advised Environment Southland that it had detected an issue with the boiler tubes. This resulted in the bag-house having to be diverted for approximately one week and the boiler being shut down for 14 hours for repairs. Milk during this period was diverted to NZ Dairies in Waimate and Synlait Milk, in Dunsandel.



Table 13 - Open Country Dairy (NZ) Ltd, Awarua plant – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Awarua		0		The boiler tubes failed causing the bag-house to be bypassed for one week. To address this, the operation of the boiler was redesigned.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding operations at the Open Country Dairy plant.

Table 14 - Open Country Dairy, Awarua plant – issues

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.3 Energy Industry

2.3.1 Pioneer Generation Limited

Consents

Pioneer Generation Limited holds 18 resource consents for the Monowai station that require inspecting. They include:

- discharge to water – 11;
- discharge to land -1;
- water consents - 2
 - Ø to dam and divert;
 - Ø to take;
- land use - 4.

Pioneer Generation Limited (Pioneer) owns and operates the electricity generation station at Monowai.

The compliance performance during the 2011/12 year was assessed against the current resource consents, which are for the on-going operation and maintenance of the Monowai Power Station. They control the take, use and discharge of water for power generation, while maintaining minimum flows in waterways.

Pioneer breached the consent requirements, with the water flow in the river falling below the minimum flow for 21 days from the diversion weir, during October 2011, and for 128 of the 151 days during the period, February – June 2012.

Periodically, Pioneer contracted a specialist to measure the water flow in the river and water levels of the river at the same time. A relationship is delivered between these two measurements. Once this has been established the river flow is regularly monitored using the water level measurement. During the February – June 2012 period this relationship changed. This change was not applied to the recording systems. Consequently, the actual flow was lower than expected, resulting in the company being non-compliant at times when it believed it was complying with resource requirements.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Monowai Power Station.



Table 15 - Pioneer Generation Limited, Monowai Power Station – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Monowai		0		Minimum flow exceeded on 149 days out of 366.

Table 16 - Pioneer Generation Limited, Monowai Power Station – issues

Issue	Score	Additional Information
Provision of data/results	Good	At the time this report was prepared the Annual Report due on the 31 July 2012 had not been received – technical non-compliance.
Responsiveness to issues	Excellent	
Keeping Environment Southland informed of intentions, changes, etc.	Good	Still awaiting updates on the progress of the fish passages and the monitoring programmes.

2.3.2 Meridian Energy Limited

Consents

Meridian Energy Ltd holds 33 resource consents related to the operation of Manapouri Power Scheme.

They include:

- to dam and divert the waters for hydro- electric power generation
- to take and use water for hydro-electric production
- to discharge treated sewage to land
- to discharge storm water to land
- to carry out bed disturbance
- to discharge contaminants to air
- to discharge water and contaminants to the coastal marine area.

Meridian Energy Limited operates a power scheme to generate electricity using water stored in lakes Te Anau and Manapouri. The stored water from the lakes is controlled using structures at the outlet of Lake Te Anau and the Waiau River. The water used to generate electricity is discharged through two tunnels to Deep Cove, Doubtful Sound. The compliance performance during the 2011/12 year was assessed against the current resource consents.



There were five non-complying events. The first three events in February were related to flood gate precision and a flood event; the second set of non-compliant events was in March and was related to the servicing of the control gates. Meridian has adjusted its operational procedures to avoid this situation from occurring again.

No complaints or self-reported incidents were received regarding the Manapouri Power Scheme.

Table 17 - Meridian Energy Ltd – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Manapouri Power Scheme		0		Some non-complying events occurred which were outside the flow requirements of the consents.

Table 18 - Meridian Energy Limited – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.4 Manufacturing Industry

2.4.1 New Zealand Aluminium Smelters Limited

Consents

NZ Aluminium Smelters Ltd holds seven discharge consents that require inspecting.

They include:

- discharge and coastal permit for discharges from the north, south and west drains;
- discharge permit for treated sewage to land;
- coastal permit for the discharge of treated effluent;
- air discharge consent from the aluminium smelter and related activities;
- discharge consent to land at the smelter's landfill site.

The New Zealand Aluminium Smelters Limited (NZAS) is located on the Tiwai peninsular at Awarua, Invercargill and produces some of the purist aluminium in the world.

The compliance performance during the 2011/12 year was assessed against the current resource consents.

NZAS exceeded consent limits on two occasions, in July 2011 and February 2012. NZAS immediately informed Environment Southland of the breaches and remedial action, or measures were put in place.

Complaints and Self-reported Incidents

Environment Southland received a complaint from the public in May 2012 regarding dust emissions from ships unloading alumina at the Tiwai wharf. NZAS implemented a series of standard operating procedures.

NZAS self-reported an incident in June 2012. It was a spillage of approximately 5 litres of heavy fuel oil to the Tiwai wharf, of which approximately 1 litre reached the harbour waters. Much of the spilt oil was recovered by smelter staff. A thorough investigation into the cause of the incident was conducted by NZAS. The results were presented to Environment Southland and measures were put in place to prevent any repeat incidents.



Table 19 – New Zealand Aluminium Smelters – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Awarua		0		<p>Fluoride in the coastal water adjoining the North Drain exceeded the consent limit in July 2011. A retest showed that the levels had dropped back to normal and preventative measures were put in place.</p> <p>One dust collector exceeded the consent limit in February 2012 due to damaged bags. Remedial action was taken and the results were brought back within consent limits within a few days.</p>

Table 20 - New Zealand Aluminium Smelters – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent





Figure 13 - Coastal water sampling around the South Drain outlet to Awarua Bay (NZAS site in the background)

2.4.2 Dongwha Patinna New Zealand Limited

Consents

Dongwha Patinna New Zealand Limited holds five resource consents for the manufacture of MDF. They are:

- to discharge contaminants to the air from fibreboard processing, including the treatment of wastewater;
- to discharge effluent and treatment pond seepage to land from a fibreboard factory;
- to discharge untreated stormwater and treated wastewater to water;
- to discharge stormwater to land;
- to discharge from a tile drain to a watercourse.

Dongwha Patinna New Zealand Limited (Dongwha) is a medium density fibreboard (MDF) manufacturing plant located south of the Matura township. The compliance performance during the 2011/12 year was assessed against the current resource consents.

Dongwha was fully compliant with all the standards set out in its resource consents.

When this report was prepared Dongwha had not exercised the consent that allows the discharge of treated wastewater to the Matura River and had not indicated any intent to do so. Instead, all wastewater has been irrigated to land.



Complaints and Self-reported Incidents

Dongwha received two odour complaints during March and May 2012. The odours were not confirmed by Environment Southland.

In July 2011 Environment Southland staff noticed smoke coming from the stack at the plant. The cause was believed to be burning sander dust. Corrective measures were implemented by the company.

Table 21 - Dongwha Patinna New Zealand Limited – consent performance summary

Plant location	Consent compliance		
	Fully compliant	Partial non-compliance	Significant non-compliance
Mataura	Ü		

Table 22 – Donwha Patinna New Zealand Limited – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.5 Fertiliser Industry

2.5.1 Balance Agri-Nutrients Limited

Consents

Ballance Agri-Nutrients Limited holds three resource consents for its fertiliser manufacturing plant at Awarua. They are:

- to discharge treated and untreated stormwater from a fertiliser manufacturing, storage and dispatch facility;
- to take ground water from bores;
- to discharge contaminants to air.

Ballance Agri-Nutrients Limited operates a fertiliser production facility at Awarua, about 10 km south of Invercargill. The compliance performance during the 2011/12 year was assessed against the current resource consents.

The plant was fully compliant with all standards set out in its resource consents.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Ballance Agri-Nutrients plant.

Table 23 - Ballance Agri-Nutrients Limited, Awarua Plant – consent performance summary

Plant location	Consent compliance		
	Fully compliant	Partial non-compliance	Significant non-compliance
Awarua	Ü		

Table 24 - Ballance Agri-Nutrients Limited, Awarua Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	N/A
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.5.2 Ravensdown Fertiliser Co-operative Limited

Consents

Ravensdown Fertiliser Co-operative Limited holds two resource consents for the purpose of operating a limestone quarry at its Dipton site. They are:

- to discharge treated stormwater to water;
- to discharge contaminants to air from the Dipton lime works.

The company holds one resource consent for its Balfour site, which is:

- to discharge stormwater from a limestone quarry at Balfour.

Ravensdown Fertiliser Co-operative Limited (Ravensdown) operates two limestone quarries in Southland, at Dipton and Balfour. The compliance performance of the two quarries during the 2011/12 year was assessed against the current resource consents.

What We Look At

Some key elements that are measured are:

- Ø **Total Suspended Solids (TSS):** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.
- Ø **Water Clarity:** the distance that can be seen through the water. The higher the clarity the greater the visibility in the water.

Complaints and Self-reported Incidents

Environment Southland did not receive any complaints from the public directly relating to the consents or operations at the limestone quarries.

However, three public complaints were received during November 2011 in relation to urea being discharged to the road from the receipt and distribution of fertiliser at Bluff. Ravensdown has now implemented mitigation measures to help prevent similar discharges.



Table 25 – Ravensdown Fertiliser Co-operative Limited – consent performance summary

Plant location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional Information
Dipton	ü			
Balfour			ü	Monitoring in September 2011 showed an impact on the receiving water clarity and TSS. A new system was installed in November 2011 changing the method of discharge. The three-monthly receiving water inspections since the instalment have been fully compliant.

Dipton

The Ravensdown site at Dipton met all the requirements set out in the consents.

Table 26 - Ravensdown Fertiliser Co-operative Limited, Dipton Plant – issues

Issue	Score	Comments
Provision of data/results	N/A	Environment Southland collects all information on performance.
Responsiveness to issues	N/A	No issues occurred during the reporting period.
Keeping Environment Southland informed of intentions, changes, etc.	N/A	No changes required reporting.

Balfour

The Ravensdown site at Balfour exceeded the receiving water quality standards set out in the consent on one occasion (one out of four sampling occasions).

Table 27 - Ravensdown Fertiliser Co-operative Limited, Balfour Plant – issues

Issue	Score	Comments
Provision of data/results	N/A	Environment Southland collect all information on performance.
Responsiveness to issues	Good	A new discharge system was identified after the consent had been breached.
Keeping Environment Southland informed of intentions, changes, etc.	Excellent	Kept Environment Southland informed about the installation of the new discharge system.



2.6 Mining Industry

2.6.1 Solid Energy New Zealand Limited

Solid Energy New Zealand Limited operates three mines in Southland, at Ohai and Waimumu (New Vale, Goodwin). In Maitua it also operates one briquetting plant and manages one disused mine pit. The compliance performance of Solid Energy's sites during the 2011/12 year was assessed against the current resource consents.

What We Look At

The consents issued for Solid Energy's mines permit the discharge of treated mine water or stormwater into nearby waterways. The mines also hold consents for the discharge of contaminants to air and ash to land. The quantity that can be discharged is restricted by the consent and compliance with these requirements is audited.

Some key elements that are measured are:

- Ø **Total Suspended Solids (TSS):** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways. In coal and lignite mine discharges, TSS may include coal fines and sediment.
- Ø **Turbidity:** turbidity is a laboratory measurement to determine the clarity of the water. The higher the result the more cloudy the water.
- Ø **Water Clarity:** the distance that can be seen through the water. The higher the clarity the greater the visibility in the water.
- Ø **Heavy Metals (coal ash):** a set of elements that exhibit metallic properties that typically have high atomic weights and that can damage living things and tend to accumulate in the food chain. Coal/lignite ash waste intended to be discharged to mine sites is analysed for a number of heavy metals prior to discharge.



Table 28 – Solid Energy New Zealand Limited – consent performance summary

Mine locations	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Ohai	ü			Inspection of this site together with the analytical sample results indicate full compliance with consent conditions.
Waimumu – New Vale/ Goodwin		ü		Inspection of this site together with the analytical sample results have generally indicated compliance with consent conditions. In one set of sample results turbidity was found to be high. It has been suggested that livestock access to the waterways could be affecting the water quality recorded as coming from the mine. Solid Energy has budgeted to fence and provide drinking troughs to alleviate any impact stock are having on the water quality.
Mataura (briquetting plant and disused mine pit)	ü			The analytical sample results complied with the exception of a high pH at a discharge pond dewatering the Mataura pit. This has been investigated and is likely to be a natural phenomenon.

Ohai Mine Site

Consents

Solid Energy New Zealand Limited holds eight consents for mining activities at the Ohai site. They include:

- to discharge contaminants to air from mining, screening and stockpiling of coal;
- to discharge treated mine water and stormwater to Morley Stream.

The Ohai mine site has met all requirements set out in the consents.



Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Ohai mine site.

Table 29 - Solid Energy New Zealand Limited, Ohai Mine – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

Goodwin and New Vale Mine Sites

Consents

Solid Energy New Zealand Limited holds four consents for mining activity at the Goodwin and New Vale mine sites. They include:

- to discharge ash to land from the operation of a lignite mine into both mine sites;
- to discharge contaminants to the air from the mining, crushing, screening and stockpiling of lignite.

Presently, applications to renew expired consents are being processed

The Goodwin and New Vale Mine sites at Waimumu have met all requirements set out in the consents.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the sites at Waimumu.

Table 30 - Solid Energy New Zealand Limited, Goodwin and New Vale Mines – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes etc.	Excellent



Mataura Sites

Consents

Solid Energy holds eight consents in the Mataura area. Five are associated with the briquetting plant site and three with the dewatering of the disused mine pit. They include:

- to discharge contaminants to the air including boiler emissions;
- to take surface water from the Mataura mine pit

To discharge water and boiler blow-down water to a former mine pit.

Solid Energy commenced construction work on the Mataura Demonstration Lignite Briquetting plant in September 2011. The civil construction work was completed just after the end of the financial year. Commissioning of the machinery and systems was scheduled to follow on from this.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Mataura briquetting plant.

Table 31 - Solid Energy New Zealand Limited, Matura, Demonstration Briquetting Plant – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.6.2 Takitimu Coal Limited

Consents

Takitimu Coal Limited holds 13 consents for mining activities at the Company Road and Coal Dale sites at Nightcaps. They include:

- to discharge coal ash from industrial operations, mixed with overburden, to land at the Takitimu coal mine;
- to discharge treated site water to the Wairio Stream;
- to discharge contaminants to air from mining operations.

Takitimu Coal Limited operates two mines at Nightcaps – Company Road and Coal Dale. The Coal Dale site has only recently commenced operations and has yet to exercise its water discharge consents.

The compliance performance for Takitimu Coal during the 2011/12 year was assessed against the current resource consents.

What We Look At

The consents issued for Takitimu Coal's mines permit the discharge of treated site water into nearby waterways. The mines also hold consents for the discharge of contaminants to air and ash to land. The quantity they can discharge is restricted by the consent and compliance with these requirements is audited.

Some key elements that are measured are:

- Ø **Total Suspended Solids (TSS):** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways. In coal and lignite mine discharges, TSS may include coal fines and sediment.
- Ø **Turbidity:** turbidity is a laboratory measurement to determine the clarity of the water. The higher the result the more cloudy the water.
- Ø **Water Clarity:** the distance that can be seen through the water. The higher the clarity the greater the visibility in the water.
- Ø **Heavy Metals (coal ash):** a set of elements that exhibit metallic properties that typically have high atomic weights and that can damage living things and tend to accumulate in the food chain. Coal/lignite ash waste intended to be discharged to mine sites is analysed for a number of heavy metals prior to discharge.



Table 32 – Takitimu Coal Limited, Company Road – consent performance summary

Mine location	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Nightcaps Company Road site		0		<p>Inspection of this site together with the analytical sample results predominantly indicated compliance with consent conditions.</p> <p>A breach of consent conditions for the disposal of ash to the site in excess of the permitted amount was responded to by infringement notice as it was a recurring non-compliance. The company has amended its consent to dispose of greater volumes of ash in the future.</p> <p>Some non-compliance was found with regard to sample results for the discharge of treated stormwater to a tributary of the Wairio Stream. This is being investigated to determine the cause and significance.</p>



Consent compliance at this site has been good overall for the 2011/12 period.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Nightcaps Company Road mine.

Table 33 – Takitimu Coal Limited, Nightcaps Company Road site – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent



2.7 Sawmill Industry

There are four sawmill companies in Southland that hold resource consents for discharge purposes. They are at Otautau, Winton, Ryal Bush and Tuatapere. Their compliance performance during the 2011/12 year was assessed against the current resource consents.

What We Look At

As part of consent requirements for the timber treatment plants Environment Southland audits the levels of metals, which in high concentrations can be toxic to aquatic life.

The metals are collectively known as CCA and are made up of Arsenic (As), Chromium (Cr) and Copper (Cu).

Table 34 - Sawmill Industry – consent performance summary

Sawmill	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Bright Wood		ü		Exceeded maximum allowable discharge rate on four days of the year. The limit set for Nitrogen was exceeded on one occasion.
Craigpine			ü	CCA concentrations in water were exceeded in the discharge samples (three of three) taken in December 2011, January 2012 and February 2012.
Findlater	ü			
Lindsay & Dixon		ü		Environment Southland investigated an incident related to nuisance discharge caused by excessive stockpiling of material on 29 March 2012.



2.7.1 Bright Wood Sawmill

Consents

The Bright Wood Sawmill holds two discharge consents. They are:

- to discharge contaminants to the air from timber processing operation;
- to discharge treated stormwater to an unnamed tributary of the Aparima River.

The Bright Wood Sawmill at Otautau met all requirements set out in its consents.

Complaints and Self-reported Incidents

Bright Wood exceeded the maximum allowable discharge rate on four days. The limit set for Nitrogen was exceeded on one occasion.

Table 35 - Bright Wood Sawmill – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	N/A
Keeping Environment Southland informed of intentions, changes, etc.	Excellent

2.7.2 Craigpine Timber

Consents

Craigpine Timber holds two discharge consents that require inspection. They are:

- to discharge contaminants to the air from timber processing activities;
- to discharge timber yard stormwater and condensate to water.

The discharge quality from the Craigpine Timber treatment plant at Winton exceeded the water quality standards set out in the discharge to water consent on three occasions (three of three samples).

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Craigpine facility.



Table 36 - Craigpine Timber – issues

Issue	Score	Additional information
Provision of data/results	Excellent	
Responsiveness to issues	Very Good	Craigpine has been keen to work with Environment Southland to try and resolve issues that have arisen at the site.
Keeping Environment Southland informed of intentions, changes, etc.	Good	

2.7.3 Findlater Sawmilling

Consents

Findlater Sawmilling holds two discharge consents that require inspection. They are:

- to discharge treated stormwater and wastewater to a wetland from a sawmilling operation;
- to take groundwater for sawmilling.

The Findlater Sawmilling facility at Ryal Bush met all requirements set out in its consents.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the Findlater facility.

Table 37 - Findlater Sawmilling – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Good



2.7.4 Lindsay & Dixon Limited

Consents

Lindsay & Dixon Ltd is located in Tuatapere and holds one discharge consent that requires inspection, that is:

- to discharge settling pond sludge to land from a sawmilling and timber processing site.

The Lindsay & Dixon facility at Tuatapere met all requirements set out in its consent.

Complaints and Self-reported Incidents

Environment Southland investigated one incident related to nuisance is charge caused by large stockpiling of sawmill shavings/sawdust.

Table 38 – Lindsay & Dixon – issues

Issue	Score	Additional information
Provision of data/results	Excellent	
Responsiveness to issues	Poor	The responsiveness of the company to issues around incidents has been disappointing
Keeping Environment Southland informed of intentions, changes, etc.	Good	



3.0 Sewage Treatment Systems

3.1 Invercargill City Council

Consents

The Invercargill City Council holds 10 resource consents for treated sewage discharge. They include consents to:

- discharge treated wastewater to an estuary;
- discharge contaminants to air;
- discharge contaminants to land;
- discharge biosolids to land;
- discharge stormwater and wastewater to land;
- discharge processed wastewater to coastal water.

The Invercargill City Council (ICC) holds resource consents for the purpose of treated sewage discharge at five locations - Clifton, Omaui, Station Road, Sandy Point and Bluff. The compliance performance during the 2011/12 year was assessed against the current resource consents.

What We Look At

As part of consents' requirements for the ICC the quantity of water being discharged and the quality of the effluent and its receiving waters are assessed.

Some key elements that are measured are:

- Ø **Dissolved Reactive Phosphorus (DRP):** a form of Phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.
- Ø **Carbonaceous Biological Oxygen Demand (CBOD₅):** a measure of the ability of contaminants to adversely remove oxygen from water.
- Ø **Ammoniacal Nitrogen (NH₄N):** rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of Ammoniacal Nitrogen can be potentially toxic to aquatic life.
- Ø **Total Suspended Solids:** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.
- Ø **Escherichia coli (E. coli) and Faecal Coliforms:** bacterium that is commonly found in the lower intestine of warm-blooded organisms. They are a subset of the Faecal Coliform group and are regarded as an



indicator of faecal contamination and therefore the presence of pathogenic (harmful) bacteria.

Ø **NOx:** Nitrate and Nitrite Nitrogen.

Ø **Dissolved Inorganic Nitrogen (DIN):** Nitrate + Nitrite Nitrogen plus Ammoniacal Nitrogen.

Complaints and Self-reported Incidents

Environment Southland investigated one incident related to objectionable odours coming from the Clifton plant, on 29 May 2012.

Table 39 - Invercargill City Council – consent performance summary

Community sewage treatment systems	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Bluff sewage	ü			
Clifton sewage		ü		One incident was investigated regarding objectionable odour.
Omaui sewage		ü		Lack of timeliness with some monitoring results and reports.
Sandy Point Biosolids to land			ü	Requirements for bore water testing were not carried out.
Station Road Biosolids to land	ü			

Table 40 - Invercargill City Council – issues

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes. etc.	Good



3.2 Southland District Council

Consents

The Southland District Council holds 19 resource consents for treated sewage discharge, including consents to:

- discharge processed wastewater to land;
- discharge processed wastewater to water;
- discharge contaminants to air;
- discharge processed wastewater to coastal water.

The Southland District Council (SDC) holds 19 resource consents for the purpose of treating and discharging sewage at 18 locations within Southland. The compliance performance during the 2011/12 year was assessed against the current resource consents.

What We Look At

As part of consent requirements for the SDC the quantity of water being discharged and quality of the effluent and receiving waters are assessed.

Some key elements that are measured are:

- Ø **Dissolved Reactive Phosphorus (DRP):** a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.
- Ø **Carbonaceous Biological Oxygen Demand (CBOD₅):** a measure of the ability of contaminants to adversely remove oxygen from water.
- Ø **Ammoniacal Nitrogen (NH₄N):** rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of ammoniacal nitrogen can potentially be toxic to aquatic life.
- Ø **Dissolved Oxygen (DO):** the amount of oxygen dissolved in water.
- Ø **Dissolved Inorganic Nitrogen (DIN):** Nitrate + Nitrite Nitrogen plus Ammoniacal Nitrogen.

Complaints and Self-reported Incidents

Environment Southland investigated four incidents related to objectionable odours coming from the sewage treatment plant at Edendale.



Table 41 – Southland District Council – consent performance summary

Community Sewage Schemes	Consent Compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional Information
Balfour	ü			
Browns		ü		Some measurements required by consent were not taken. The system has recently been upgraded to improve the quality of the discharge.
Edendale/Wyndham		ü		Exceeded maximum allowable discharge rate on four days of the year. The limit set for NH4 was exceeded on one occasion. Environment Southland investigated four incidents related to objectionable odours coming from the plant.
Gorge Road	ü			
Lumsden	ü			
Manapouri		ü		Some measurements required by the consent were not taken.
Monowai			ü	The limits set out in the consent for TSS and faecal coliforms were exceeded when the annual sample was taken and analysed.
Nightcaps		ü		The maximum daily wastewater flow limit was exceeded on several occasions.
Ohai			ü	The limits set out in the consent for Dissolved Oxygen were exceeded during two out of five sampling events for the year. The system has recently been upgraded. Latest results show improved effluent quality.
Otautau	ü			
Riversdale			ü	Unauthorised discharges occurred without notification being received by Environment Southland. The maximum daily waste water flow limit was exceeded on several occasions.



Community Sewage Schemes	Consent Compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional Information
Riverton Rocks		ü		One measurement required by consent was not taken. The maximum daily wastewater flow limit was exceeded on several occasions.
Riverton Township		ü		The maximum daily wastewater flow limits were exceeded on several occasions.
Stewart Island			ü	One measurement required by consent was not taken. The limits set out in the consent for DIN were exceeded five out of six samples for the year.
Te Anau		ü		The limit for DIN in the lake was exceeded on three occasions and DRP in the lake was exceeded on one occasion
Tokanui sewage		ü		One measurement required by consent was not taken. The maximum daily wastewater flow limit was exceeded on several occasions.
Tuatapere sewage		ü		Discharges occurred without notification to Environment Southland. The maximum daily wastewater flow limit was exceeded on several occasions.
Winton sewage		ü		One measurement required by consent was not taken. The potential for upgrades or improvements are currently being considered.



Table 42 - Southland District Council – issues

Issue	Score
Provision of data/results	Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Good



3.3 Gore District Council

Consents

The Gore District Council holds three resource consents for discharging treated sewage. They include consents to:

- discharge processed wastewater to water;
- discharge contaminants to air.

The Gore District Council (GDC) holds resource consents for the purpose of discharging treated sewage within the Gore district. The compliance performance during the 2011/12 year was assessed against the current resource consents.

What We Look At

As part of consents' requirements for the GDC the quantity of water being discharged and the quality of the effluent and receiving waters are assessed.

Some key elements that are measured are:

- Ø **Dissolved Reactive Phosphorus (DRP):** a form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.
- Ø **Ammoniacal Nitrogen (NH₄N):** rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of Ammoniacal Nitrogen can potentially be toxic to aquatic life.
- Ø **Total Suspended Solids:** very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.
- Ø **Escherichia coli (E. coli):** bacterium that is commonly found in the lower intestine of warm-blooded organisms. They are a subset of the Faecal Coliform group and are regarded as an indicator of faecal contamination and therefore the presence of pathogenic (harmful) bacteria.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the GDC's community sewage system.



Table 43 - Gore District Council – consent performance summary

Community Sewage Schemes	Consent Compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional Information
Gore sewage		ü		The maximum acceptable concentration of <i>E.coli</i> in the discharge was not exceeded. <i>E.coli</i> rolling 80 percentile limit was exceeded once out of seven sampling occasions. Receiving water limits were fully complied with.
Mataura sewage			ü	NH ₄ N maximum exceeded on three out of seven sampling occasions. DRP maximum exceeded four out of seven sampling occasions. TSS maximum exceeded five out of seven sampling occasions. Consent is currently being amended to address the issues. Receiving water results were fully compliant during the reporting period.
Waikaka Sewage		ü		Discharge flow exceeded the wet weather limit for one week in October 2011. The datalogger broke in February 2012 and the replacement did not arrive until August 2012. The wet weather discharge flow condition of this consent was amended in July 2012. This brought this consent condition into line with other similar consents. All receiving water monitoring was fully compliant.

Table 44 - Gore District Council – issues

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes, etc.	Very Good





Figure 14 - Gore District Council, Waikaka Oxidation Pond



4.0 Quarrying

4.1 Gravel Extraction

Gravel comes under the responsibility of Environment Southland's Compliance Division for the auditing of inspections.

Compliance staff work closely with the Catchment Division, whose staff are tasked with the onsite briefing of the consent holder and completing field inspections.

Compliance staff send a letter to all new/renewed consent holders, advising them to read the consent and ensure they understand what they have to do to comply with the conditions placed on the gravel extraction.



Figure 15 - Gravel extraction, Oreti River, upstream of the Winton Bridge

Not all scheduled inspections and follow up of non-compliance were completed during the 2011/12 year.

Of the 203 current consents, 136 were fully compliant. Of these, two currently have no access to enable extraction, two have extracted the consented limit and have been advised to surrender these consents, 17 consent holders are yet to commence exercising their consent, and 32 are not currently exercising their consent.

Council granted a further 24 consents during the 2011/12 year, allowing a total of 446,950 m³ of gravel to be extracted during the period of the consent. Resource consent conditions require from one to four annual onsite inspections. The number of inspections is reduced if a consent is yet to commence, or is not currently being exercised. Of the 499 scheduled field inspections, 180 were completed. Field inspectors estimated 115,060 m³ of gravel had been extracted and the monthly returns submitted to Environment Southland totalled 244,417 m³ for the 2011/12 year.



Disappointingly, 10 of the 67 non-compliant consents belong to one of the region's major industries, which has failed to submit gravel returns for 10 months for nine consents, and eight months for one other consent. Action is being taken against this party.

A further disappointment relates to a government agency that holds nine current consents. The receipt of information is irregular.

Both consent holders have received extensive education and advice.



Figure 16 - Gravel extraction, Oreti River upstream of the Winton Bridge



5.0 Landfills

5.1 S J Timpany Cleanfill

Consents

S J Timpany holds two resource consents, however only the second consent requires inspection. They are:

- to discharge cleanfill to land;
- to discharge solid waste to land.

S J Timpany operates a cleanfill and modified-managed wastefill site at Otatara that receives solid waste from the demolition of housing and commercial buildings, as well as asbestos. The compliance performance during 2011/12 was assessed against the current resource consents.

S J Timpany was fully compliant with all the standards set out in its discharge consents.

Complaints and Self-reported Incidents

No complaints or self-reported incidents were received regarding the S J Timpany cleanfill site.

Table 45 - S J Timpany – consent performance summary

Plant Location	Consent compliance		
	Fully compliant	Partial non-compliance	Significant non-compliance
Otatara	ü		

Table 46 - S J Timpany – issues

Issue	Score
Provision of data/results	Excellent
Responsiveness to issues	Excellent
Keeping Environment Southland informed of intentions, changes, etc.	Excellent





Figure 17 – Side view (top) and front tipping face view (bottom) of disposal area at the cleanfill



5.2 AB Lime Landfill

Consents

AB Lime Limited holds three resource consents. They are:

- to discharge stormwater to a tributary of the Lochiel Stream;
- to discharge solid waste onto or into land;
- to discharge contaminants to air from a landfill.

AB Lime Limited operates an agricultural lime and Class A landfill business about 4 km east of the Winton township. The compliance performance during the 2011/12 year was assessed against the current resource consents.

AB Lime Limited was fully compliant with all standards set out in its resource consents for discharges to land and water. However, it was non-compliant with the air consent from July to November 2011 because the temperature that the flared gas is burnt off at fell below the consented limit. Adjustments were made to the permanent gas flare in November 2011, which resulted in the temperature increasing to within the consent limits from December 2011 to June 2012.

Complaints and Self-reported Incidents

AB Lime Limited received one odour complaint in August 2011. The odour was not confirmed. However, the issues mentioned earlier about flare temperature may have been the cause and have been resolved.

Table 47 – AB Lime Limited – consent performance summary

Plant locations	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Winton		0		The permanent gas flare monitoring data frequently exceeded either the consent or the agreement limits between July and November 2011.



Table 48 - AB Lime Limited Landfill – issues

Issue	Score	Additional information
Provision of data/results	Very Good	Delays in receiving some results because of monitoring equipment issues.
Responsiveness to issues	Excellent	
Keeping Environment Southland informed of intentions, changes, etc.	Excellent	



Figure 18 - Heavy machinery filling a new section of the AB Lime Limited landfill with waste. In the background is the liner used to cover sections that receive waste. In the foreground is the drain used to collect the stormwater.



6.0 Coastal Marine Area

6.1 South Port and New Zealand Aluminium Smelter Coastal Plan Agreements

The main area of shipping for the Southland region is the Bluff Port Zone. The port is separated into two separate operations:

- Ø the import and export operations based in Bluff township, managed by South Port;
- Ø the import and export operations based on the Tiwai Peninsula servicing the New Zealand Aluminium Smelter (NZAS), managed by the New Zealand Aluminium Smelter.

The Regional Coastal Plan for Southland allows for Environment Southland to enter into individual agreements that manage the operations at the two sites. The agreements were set up to establish practices that minimise or eliminate the risks of environmental impact resulting from activities undertaken within the land areas, accompanying buildings and port facilities owned and/or managed by South Port or NZAS. The documents describe a series of systems which each party has agreed to abide by, and ensures that the management of the port activities are compliant with the Resource Management Act (1991).

Individual agreements were established between Environment Southland and NZAS in 2004, and South Port in 2006.

The two agreements have been reviewed. Both are in the final stages of being formally signed off.



6.2 Whitebait Stands



Figure 19 - Whitebait stands on the Maitara River

There are 650 consented whitebait stands in Southland. In the 2011/12 year most stands were inspected and a high rate of compliance was found. However, unconsented bank protection work is still occurring which (as well as being unpermitted), can alter the natural course of a river. Unauthorised toilet facilities continue to be a concern because of the environmental impact that can arise from discharges close to a water body.

6.2.1 Permitted Activity Inspection: Stock Access Affecting Whitebait Spawning Areas

During March 2012, Compliance staff undertook an aerial inspection of whitebait spawning areas to assess whether stock access could be affecting this habitat. The estuarine/river mouth areas of all the major, and a number of smaller, rivers along Southland's south coast were inspected. The inspection found that there were only two situations where stock were located in an area where they could have access to that habitat. This inspection would indicate that stock access within whitebait spawning areas during the applicable period was good.



7.0 Crown Agencies

7.1 Department of Conservation

Consents

The Department of Conservation holds resource consents for the following purposes:

- coastal - 16
- discharge - 33
- land use - 27
- water - 18

The Department of Conservation (DOC) holds 94 current resource consents, however the majority of these consents have either not been exercised during the 2011/12 year, or do not have inspection conditions attached to them.

The main consents exercised were for discharge along the Milford and Kepler tracks. These consents relate to the disposal of sewage and wastewater at the huts along the tracks. Environment Southland inspected these systems in April and February 2012.

Table 49 - Department of Conservation – consent performance summary

Locations	Consent compliance and system maintenance and operation			
	Fully compliant	Partial non-compliance or system issues	Significant non-compliance	Additional Information
Clinton Hut		ü		Grey water disposal line was blocked and causing it to pool – the line required cleaning. Black water lines were overgrown and needed clearing. January samples were collected in February. No explanation given – technical non-compliance.
Mintaro Hut		ü		Pooling of sewage and sewage fungus along disposal lines. Lines were overgrown in places and needed clearing. January samples were collected in February. No explanation given – technical non-compliance.
Dumpling Hut		ü		Disposal lines were overgrown in places and



Locations	Consent compliance and system maintenance and operation			
	Fully compliant	Partial non-compliance or system issues	Significant non-compliance	Additional Information
				needed clearing. January samples were collected in February. No explanation given – technical non-compliance.
Sandfly Point		ü		January samples were collected in March. No explanation given – technical non-compliance. Tourism Milford Ltd was still using the sewage system. This system is due to be decommissioned as it discharges within 10m of water.
Luxmore Hut		ü		Disposal lines were operated at the same time instead of separately. The issue has been resolved.
Iris Burn Hut		ü		Pooled surface water was observed and Environment Southland staff suspected it contained sewage.
Motorau Hut			ü	Sewage was being pumped directly to a soak area which was not in accordance with the consented system. A new disposal system has been installed (recently). This has resolved the issue and this site is now compliant.
Pit or Containment Toilets	ü			No issues identified. These were effectively operated.

What We Monitor

- Ø **Grey water:** wastewater that is generated from domestic activities like clothes washing, dishwashing and bathing.
- Ø **Black water:** wastewater containing human faeces and urine, generated from toilets.



Ø **Sewage:** a mixture of black water and grey water.

Table 50 - Department of Conservation – issues

Issue	Score
Provision of data/results	Marginal
Responsiveness to issues	Good
Keeping Environment Southland informed of intentions, changes, etc.	Marginal



8.0 Small Consented Activities

8.1 Truck Washes

Unless otherwise stated in the resource consent, truck washes are inspected annually. There are 28 consented truck washes, 18 have been checked and were found to be compliant, and three were found to be non-compliant. At the time of writing, seven were still to be inspected.



Figure 20 - Sealed runoff area to capture sediment from truck wash



8.2 Cleanfill Sites

Cleanfill sites are spread throughout Southland. There are 24 consented sites in total.

During the 2011/12 year, 20 inspections were completed. Of these, 16 were compliant and the remaining four had some minor non-compliance.



Figure 21 - Example of material allowed to be discharged to a cleanfill



Part B

Incident Response

9.0 Incidents

During the 2011/12 year, 959 incidents were recorded. During the previous three financial years incident numbers have ranged from 850, to 980 incidents per year.



Figure 22 – Recovery of stock carcasses from waterways is a component of Environment Southland's pollution response

Incident reports were received from the public, other agencies, contractors, Environment Southland and some were self-reports. Responses to incidents may have been via an immediate or delayed site visit, communications, or referral to another agency or contractor. The outcome or response to 44 incidents has not been entered into the database as yet and these incidents are, for the time being, considered unconfirmed.

Environment Southland reported 260 incidents; the remaining incidents (73%) were reported from external sources.

An assessment of the incident reports received was undertaken. Based on the information received and available, a general breakdown of the type of incidents is shown in Table 51 below.

Table 51 – General Classification of Incidents Received

General ID	Confirmed	Unconfirmed	Total
Air Discharge	62	150	212
Biosecurity	1	2	3
Coastal Marine Area Activity	0	4	4
Coastal Marine Area Discharge	15	18	33
Coastal Marine Area Foreshore & Seabed Disturbance	2	1	3
Coastal Marine Area Structure	9	0	9
Contaminated Site	2	1	3
Other	2	7	9
Navigation Bylaws	6	0	6
Technical Consent Compliance	31	17	48
Water Bed Disturbance	6	17	23
Water Quality/Bed Disturbance	57	16	73



General ID	Confirmed	Unconfirmed	Total
Water Quantity	4	6	10
Water Structure	4	0	4
Water/Land Discharge	237	282	519
Total	438	521	595

The term technical consent compliance is used to refer to non-compliance with consent conditions that does not necessarily result in an adverse effect on the environment. For example, the late supply of water take data. These incidents form a significant component of the workload and there is some overlap with consent monitoring.

It is interesting to note that only 30 per cent of air discharge incidents are confirmed, while 45 per cent of water/land discharges are confirmed. As shown in the graph below (Figure 23), it has been identified that a significantly greater proportion of incidents relating to air discharges are received from the public. Regional Plan rules are relatively permissive and allow burning of waste in certain circumstances, therefore, confirmed burns may have been recorded as compliant with plan rules in the majority of cases.

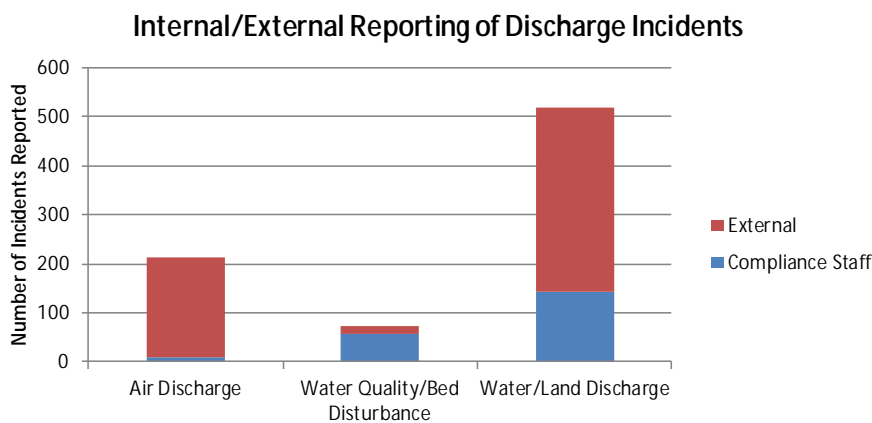


Figure 23 - Discharge Incidents

Air Discharge Incidents

Air discharge incidents made up a significant proportion of the incidents reported. These are further broken down into sub categories based on the information available. See Table 52, below.

Table 52 - Air quality incidents

Air discharge incidents	Confirmed	Unconfirmed	Total
Backyard Burn Smoke	26	60	86
Dairy Effluent Odour	3	29	32
Dead Animal Odour	7	8	15
Industrial Dust	6	9	15
Industrial Smoke	5	7	12
Industrial Odour	4	6	10
Agricultural Effluent (non dairy)	2	7	9



Air discharge incidents	Confirmed	Unconfirmed	Total
Odour			
Chimney Smoke	1	6	7
Sewerage TLA Odour	1	5	6
Other sub-categories totalling less than 5	7	13	20

It is apparent from the data in the table above that the highest level of air quality incident reports were backyard burning matters. Of the 86 backyard burning incidents, 83 were reports received from sources external to Environment Southland. At present backyard burning is a permitted activity although, where confirmed, the nuisance effect may be responded to by way of an abatement notice served in relation to Section 17 of the Resource Management Act 1991.

Water Quality Incidents

Water quality incidents are considered in Table 53, below. Routine dairy discharge consent monitoring and permitted activity monitoring focusing on intensive winter grazing were undertaken and, as a consequence, a high number of these breaches were reported and confirmed. In support of this, 81 of the 141 dairy effluent incidents, and 56 of the 73 intensive grazing incidents were confirmed. Stock access and intensive grazing incidents were classified separately as different rules apply to: general stock access to waterways; and access when stock are being intensively grazed. Interestingly, Environment Southland reported only eight of the 68 stock access incidents. Like backyard burning incidents, stock access to waterways is a permitted activity within the Regional Plan.

Table 53 Water quality incidents

Water quality incidents (includes intensive grazing incidents)	Confirmed	Unconfirmed	Total
Dairy Effluent	93	48	141
Intensive Grazing	57	16	73
Stock Access	12	56	68
Dead Animal	33	32	65
Stock Truck Discharge	8	25	33
Offal Pit/ Rubbish hole issues	12	18	30
Lane/ Underpass/ Sludge effluent	16	12	28
Oil/Diesel	9	17	26
Fly Tipping	4	10	14
Fertiliser	2	9	11
Silage Effluent	7	4	11
Agricultural Effluent (non dairy)	3	7	10
Industrial Stormwater	6	4	10
Other sub-categories totalling less than 10	32	40	72



The number of incident reports received has been relatively consistent during the past four years, indicating that the public of Southland is concerned about stock access to waterways and backyard burning despite both of these activities being largely permitted under the Regional Plan rules.



Part C

Enforcement

10.0 Enforcement

The Office of the Auditor General undertook a performance audit of Environment Southland and three other regional councils in 2011 and compiled a report titled 'Managing fresh water quality: Challenges for regional councils' (OAG report). This document, together with a review of the Compliance Enforcement Policy – renamed Compliance Action Policy to reflect that it also incorporates educational and non-punitive responses – and other relevant information, has significantly revised Environment Southland's response to confirmed incidents.

In the overall audit findings, the OAG report stated, "Non-regulatory approaches and permitted activity rules are not likely to be sufficient to manage freshwater quality within limits". The report also criticised Environment Southland for, at times, being slow to take enforcement action in cases where non-compliance was found to be ongoing. Infringements have been a useful tool to ensure that some level of enforcement response is taken to repeat incidents, or where non-compliance is prevalent despite significant educational attempts and media attention.

The OAG report recommended that the Council review the involvement of Councillors in enforcement decision making and investigation processes. Environment Southland responded by endorsing the Compliance Action Policy (with the amendment of some delegations) and the appointment of the Enforcement Panel to replace the role of the Prosecution Sub- Committee. A Terms of Reference document was compiled for the Enforcement Panel and adopted. The Enforcement Panel also makes decisions on infringement appeals and whether or not these infringements should be remitted.

Table 54 - Compliance Action Summary

Compliance Action	
No further action	Estimate 450 incidents.
Education and advice	Most incident response involves a level of education and advice, to both the alleged offender and the complainant.
Warning letters	Unknown ¹ .
Abatement notices	74
Infringement notices	154 paid and 18 remitted (eight administration errors and 10 decisions reviewed).
Enforcement orders	Two sets.
Search warrants	Three.
Prosecutions	Eight.
Total number of incidents	959

¹ Data regarding warning letters issued is not easily accessible and not reported here.



10.1 Infringement Notices

Why use infringement notices?

- Infringement notices are a method of enforcement designed for minor offending which carries with it no conviction.
- It is hoped that regular use of Infringement notices will result in public deterrence against offending where offending is prevalent.
- The penalties are prescribed and range between \$300 and \$750. These penalties are considered appropriate as although they are not severe, they indicate to the public that there is a penalty for non-compliance.
- Built into the infringement process is the opportunity to contest the infringement notice.
- Issuing of infringement notices is a relatively quick process and allows for a certain level of efficiency.
- Infringement notices are applicable to sentencing for future similar offending and therefore, may represent a good record of ongoing non-compliance.

During the 2011/12 year, 182 infringement notices were issued. Of these, 154 were paid.

Predominantly infringement notices related to dairy discharge matters, with 87 paid for dairy shed effluent discharges and the remaining 67 for all other matters.

Table 55 - Infringement notices, paid (data from Prosecution Recoveries Spreadsheet and Job Code Register)

Discharge activity	Number of Infringement notices paid
Dairy discharge	87*
Not dairy discharge	67

** Excludes remittals and includes multiple infringements issued for the same offence on a property.*



What issues arose from the use of Infringement notices?

- **Public response:** As infringement notices had not previously been issued for certain offending, there was a high level of response and contesting of them. This was anticipated and it is expected that, once the public become aware that non-compliance could result in a penalty, they will be more accepting of infringement notices if they are in breach of the plan rules.
- **Processing:** The infringement process is complex and a software programme was adopted to facilitate this. The past year has allowed staff to improve their use of this programme and it will be replaced in 2013/14 with new and improved software tools.
- **Officer error.** Areas of risk where errors in infringement notices tend to occur have been identified and procedures put in place to reduce the possibility of errors.

No payment was received for 28 infringements for one of the following reasons:

- Ø the infringement was withdrawn and reissued, due to minor error or additional information that became available;
- Ø the infringement was withdrawn and not reissued, due to error or additional information that became available.



10.2 Abatement Notices

What are Abatement notices?

- Abatement notices are a non-punitive directive to cease or not commence an activity or to undertake work.
- Abatement notices are useful for responding to recurring or on-going 'nuisance' incidents e.g. confirmed odours and smoke incidents which have an objectionable or offensive effect on the community.
- Abatement notices may be used as a response to offending by providing the offender with the opportunity to correct their actions or to stop the offence without a penalty resulting.
- Abatement notices are a clear directive and therefore breaches of these notices are not well tolerated by the courts.

During the 2011/12 year, 74 abatement notices were issued. No appeals were received, or abatements withdrawn.

Most abatement notices (89%) were either issued for water take matters (non-supply of data or installation of bore meters) or discharge matters (see Figure 24) The former related to consent compliance, while the latter would include both consented and unconsented discharge activity.

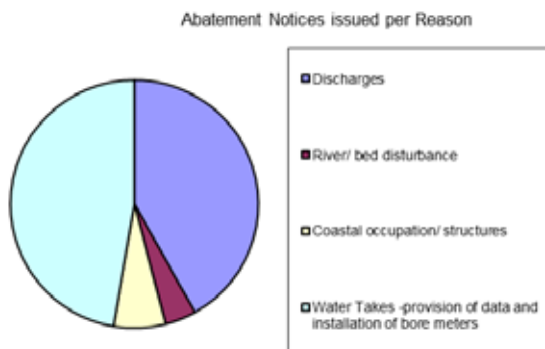


Figure 24 - Reason for issuing of abatement notices



Over 75 per cent of the abatement notices issued, related to agricultural issues (Figure 25, below).

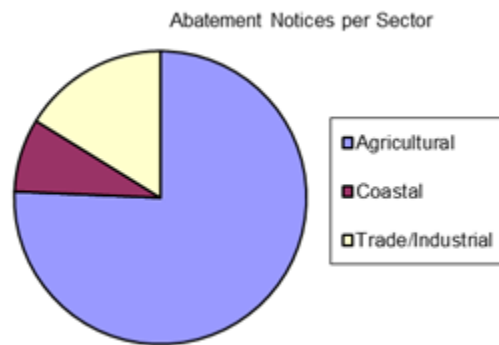


Figure 25 - Sectors that were issued abatement notices



10.3 Prosecutions

During the 2011/12 year, sentencing was completed for eight of the matters that were before the courts. All but one of the matters related to agricultural practice or properties, only two were for dairy effluent discharge activities.

Table 56 - Prosecutions

Name	Sentencing date	Offence	Total fines*	Additional information
Ø George Lindsay Taylor	5 December 2011	Unlawful discharge of wintering pad effluent.	\$10,000	
Ø 407 Dairies Ltd Ø Brian John Adams Ø David Bowman	5/12/2011 19/03/2012	Unlawful discharge of dairy shed effluent.	\$25,000 \$7,500 none	David Bowman sentenced to 100 hours of community service.
Ø Te Anau Bulk Haulage Ltd	5 December 2011	Unlawful discharge of stock truck effluent.	\$1,500	
Ø Lyall Gordon McKenzie Ø Twin Peaks Farming Ltd	9 February 2012	August 2010. Disturbing the bed of a river by unrestricted stock access.	\$5,550 \$4,800	A second similar offence had been put forward for prosecution, with two alternative charges laid: Ø disturbing the bed of a river by unrestricted stock access; Ø discharge of sediment to water. On 18 November 2011, both parties were found not guilty and charges were dismissed.
Ø Cando Fishing Ltd	11 June 2012	Two charges relating to unlawful discharges of fish processing waste and human effluent.	\$9,000	
Ø Rex Gregory Trott Ø Maxine Delilah Trott	12 June 2012	Unlawful discharge of dairy shed effluent.	\$9,000 \$9,000	
Ø Gregory Llewellyn Bokser	12 June 2012	Breach of intensive winter grazing rules.	\$6,000	



Name	Sentencing date	Offence	Total fines*	Additional information
Ø Carran Scott Contracting Ltd	29 June 2012	Unlawful disturbance of a river bed.	\$1,500	Both companies jointly contributed fully to the investigation costs and costs incurred for the repairs completed to the bridge.
Ø FarmRight Ltd			\$2,000	

* Less solicitors' fees; court and Environment Southland's costs awarded.



Figure 26 - Example of a breach of what is commonly referred to as the 3 metre rule. This rule provides that stock access to water bodies is to be managed in a way that avoids significant adverse effects on water quality, bed and bank stability, and habitats. See Environment Southland's Regional Water Plan for Southland, which is available online: <http://www.es.govt.nz/media/18462/water-plan-nov-2012.pdf>



10.4 Enforcement Orders

Enforcement Orders are directives which are granted by the Environment Court and may or may not accompany a prosecution. Enforcement orders may require action to be taken, an activity to be ceased or not undertaken, or that costs be recovered. They are applicable where there has been, or is likely to be, a breach of the Resource Management Act 1991, a rule in a plan, a resource consent, etc. They may also be applicable where the Environment Court is satisfied that the activity or its effects are likely to be noxious, dangerous, offensive or objectionable to such an extent that it is likely to have an adverse effect on the environment.

Environment Southland applied for, and was granted, the following enforcement orders:

On 12 July 2011 enforcement orders were issued to Ian Mark Taplin and South Taranaki Trustees Limited. On 26 July 2011 enforcement orders were issued to Joannes Josephus Maria Coppus and Annette Maria Petronella Coppus for. These enforcement orders were for:

- Ø the provision of dairy shed effluent storage;
- Ø the preparation and provision of a farm management plan;
- Ø payment of investigation and legal costs associated with the order.

A third application was an enforcement order for investigation and legal costs which was refused. This matter was useful in that it indicated to Environment Southland some of the advantages and disadvantages of enforcement orders. Enforcement orders may be an expensive enforcement option. They may take significant time to reach an outcome and the order may create additional audit requirements that impact on staff workloads. On the other hand, this procedure may be beneficial where there is ongoing offending as it would require the person involved to undertake some positive work to remedy the situation.



Figure 27 - An example of the construction of additional effluent storage similar to that required by the two recent enforcement orders



Part D

Education and Outreach

11.0 Pollution Prevention

The Pollution Prevention team increased to two full time staff members in 2011. This has enabled more promotion of the Pollution Prevention Programme to businesses and industries associated with high risk activities such as discharges to air, water and land.

During the 2011/12 year, 17 new businesses were introduced to the Pollution Prevention Guide. Several other individuals and businesses were also given advice on an informal basis and 13 existing businesses on the programme were visited to follow up on progress with the Pollution Prevention Guide.

A focus has been on identifying industrial areas adjoining waterways and undertaking visits to those sites to identify potential pollution risks. Staff then work with businesses to develop best practice.



Figure 28 - Oil containers stored inappropriately

Spill prevention has been the topic for educational talks to businesses this year, as well as advising farmers on the safe disposal and storage of chemicals (Figure 28).

A 'What's in your Shed' display (Figure 29) was created for the Waimumu Field Days, to create awareness of legacy chemicals such as DDT.



Figure 29 - 'What's in Your Shed' display at the Waimumu field days



11.1 Projects

The three main projects during the year were on industrial businesses in the Kennington area, abrasive blasting businesses and scrap metal dealers. The aim was to provide free education and advice on best management practices to stop sources of pollution and to ensure compliance with Regional Plan rules and regulations.

The Kennington project was undertaken in conjunction with the Waihopai Living Streams team, starting with a stream walk along the Waihopai River in January 2012 (Figure 30).

Stormwater outlet pipes and discharges to the river were identified, water samples taken and, in some cases, dye testing was carried out to confirm sources of discharge. Several sources of stormwater contamination were located and businesses have worked proactively with Environment Southland to stop these discharges and significant success has been achieved with sources of pollution to the river now ceased. Pollution Prevention staff are continuing with ongoing visits to businesses to continue with improvements.

Another area of significant progress at Kennington has been the Invercargill City Council (ICC) agreeing to install new connections for Kennington businesses and residents to access the ICC waste treatment plant in Invercargill.



Figure 30 - Environment Southland staff members searching for stormwater outlets discharging to the Waihopai River



11.2 Stormwater

Stormwater contamination and illegal discharges to all waterways has continued to be a major focus. Pollution Prevention staff have worked on a reactionary basis with businesses to improve compliance with Regional Water Plan rules. Urban stormwater projects are ongoing, with both internal and external staff and include providing support to the ICC in implementing the monitoring requirements of its stormwater consent.

Gore District Council Stormwater Systems

Consents

The Gore District Council holds three resource consents that require monitoring. They include:

- to discharge stormwater from Pukerau;
- to discharge stormwater from Mataura;
- to discharge stormwater from Gore.

The Gore District Council (GDC) holds three resource consents for the purpose of treated sewage discharge within the Gore region. The compliance performance during 2011/12 was assessed against the current resource consents.

Complaints and Self-reported Incidents

Environment Southland received four complaints relating to contaminants that had entered waterways via the stormwater system. One was self-reported by the GDC and three were reported by members of the public. The GDC addressed the issues and no further action was required.



Table 57 - Gore District Council, Community stormwater systems – consent performance summary

Community stormwater systems	Consent compliance			
	Fully compliant	Partial non-compliance	Significant non-compliance	Additional information
Gore township	ü			All sampling, investigations and reporting undertaken as per consents.
Mataura township	ü			All sampling, investigations and reporting undertaken as per consents.
Pukerau & Waikaka townships	ü			All sampling, investigations and reporting undertaken as per consents.

Table 58 - Gore District Council, Community stormwater systems – issues

Issue	Score
Provision of data/results	Very Good
Responsiveness to issues	Very Good
Keeping Environment Southland informed of intentions, changes etc.	Very Good



11.3 Listed Land Uses

Enquiries relating to the Land Use Register have increased dramatically in the past year, due to the release of the National Environmental Standards (NES) in January 2012. The investigation of land for the purposes of identifying and monitoring contaminated land is the responsibility of regional councils.



11.4 Land Use Register

The Land Use Register has continued to be maintained and updated in accordance with Environment Southland's functions under the Resource Management Act 1991 and the Ministry for the Environment Guidelines for Assessing and Managing Contaminated Land. This work is being done by a contaminated land specialist, who has been contracted on a part-time basis.



11.5 Contaminated Land Consents

Business development in Southland is booming, if the number of sites being developed in the industrial area is an indicator.

There has been a surge of new large truck wash facilities under development in the Bond and Spey Street location, with growing interest in further unoccupied and vacant sections.

A record number (17) of applications were received in Southland for Land Use Consents for Intrusive Investigations and/or Earthworks on Contaminated Land.

No applications were received for the Contaminated Sites Remediation Fund administered by the Ministry for the Environment.



Figure 31 Excavated hole showing extent of contamination



11.6 National Environmental Standards for Assessing and Managing Contaminated Land

National Environmental Standards (NES) regulations apply to assessing and managing the actual and potential adverse effects of contaminants in soil on human health from five activities:

- Ø removing/replacement of fuel storage systems;
- Ø soil sampling;
- Ø soil disturbance;
- Ø change of use of land;
- Ø subdivision.

This means that there are now many land use applications that require assessment in terms of the NES.

Builders, consultants, valuers, real estate agents, developers, solicitors and the general public are becoming more aware of the Hazardous Activities and Industries List (HAIL) and their responsibilities to consider the potential for contamination of land. As a consequence, they are more inclined to investigate the previous use of properties prior to applying for land use consents with the local authorities.

This has resulted in a significant increase in emails and phone calls to Pollution Prevention staff, who manage the land use register Sites Associated with Hazardous Substances (SAHS) database, with more than 30 queries per month seeking HAIL list information.

The investigation of land for the purposes of identifying and monitoring contaminated land is the responsibility of regional councils.

A spread sheet of registered sites is now on the Environment Southland website for public access. The number of calls is continuing to grow, however, as the public seek advice on HAIL industries and activities and become more aware of their new responsibilities and requirements.

It is expected that the proposed Regional Water Plan change for Contaminated Land will see an increase of joint information sharing on contaminated land issues with Environment Southland and territorial authorities.



Glossary

AFDW	Ash-free dry weight – used for periphyton monitoring to remove any sediment included in the sample.
Ammoniacal Nitrogen (NH ₄ N)	Ammoniacal nitrogen is rarely found at high levels in natural waters. Its presence is an excellent means of detecting pollution. It is a major component in urine excreted by mammals. High levels of ammoniacal nitrogen can potentially be toxic to aquatic life.
ANZECC	The Australia New Zealand Environmental Conservation Council. This organisation is developing guidelines similar to the USEPA but applicable to the Australian and New Zealand situations.
Black Water	Wastewater containing human faeces. Generated from toilets.
CBOD ₅	Carbonaceous Biochemical Oxygen Demand – A measure of the ability of contaminants to adversely remove oxygen from water
CCA	Copper (Cu), Chromium (Cr) and Arsenic (As) are the usual metals analysed for when taking the timber treatment process into consideration. High levels of metals can become toxic to aquatic life.
Clarity	The distance that can be seen through the water. The higher the clarity the greater the visibility in the water.
CFU	Colony Forming Units.
Chl <i>a</i>	Chlorophyll <i>a</i> – the pigment in plant cells which captures light energy for photosynthesis.
DAF Unit	Dissolved Air Flotation unit. This is an effluent treatment system whereby air is pumped into the effluent under pressure. When the air is discharged into the tank containing effluent, it returns to atmospheric pressure, the dissolved air comes out of suspension and forms bubbles on the particulate matter. These bubbles then float to the surface to be removed as sludge.
DIN	Dissolved Inorganic Nitrogen – Nitrate + Nitrite Nitrogen plus Ammoniacal Nitrogen.
DO	Dissolved Oxygen – Oxygen is important to sustain life. DO is the amount of oxygen dissolved in water.



DRP	Dissolved Reactive Phosphorus – A form of phosphorus that is readily available to plants to sustain growth. High levels of Phosphorus and Nitrogen in receiving waters can promote the growth of nuisance weeds on water beds.
dsm ³	Dry standard cubic metre – This is used for determining the contaminant levels in exhaust gases by standardising temperature and pressure, and removing the effect of variable water contents.
<i>E. coli</i>	Escherichia coli - <i>E.coli</i> is a bacterium that is commonly found in the lower intestine of warm-blooded organisms. They are a subset of the Faecal Coliform group and are regarded as an indicator of faecal contamination and therefore the presence of pathogenic (harmful) bacteria.
EC	Electrical Conductivity – The ability of water to conduct electricity. This gives a conservative measure of the mineral content of water. Generally, the greater the conductivity of the water, the greater the mineral content of the water.
Faecal Coliforms (FC)	These are organisms that are present in the gut and faeces of warm-blooded animals and are used as indicators of the presence of pathogenic organisms.
g/m ³	Grams of material in 1 cubic metre of water – A measure of concentration in a liquid or gas.
Grey Water	Wastewater that does not contain human faeces. Waste water that is generated from kitchens, sinks and showers.
Heavy Metals	A set of elements that exhibit metallic properties that typically have high atomic weights and that can damage living things and tend to accumulate in the food chain.
IANZ	International Accreditation New Zealand.
ISO	International Organisation of Standardisation.
ISO 1400 1	A standard produced by ISO defining the requirements for an environmental management system.
Loading	The quantity of contaminates discharged over a set period of time.



LTCCP	Long-Term Council Community Plan. This is a document projecting Council activities, as required by the Local Government Act 2002.
Metals (timber treatment)	The metals: Arsenic (As), Chromium (Cr) and Copper (Cu) are the usual metals analysed for when taking the timber treatment process into consideration. High levels of metals can become toxic to aquatic life.
mg/kg	Unit to measure concentration in a solid (equivalent to ppm (parts per million) or g/m ³ the unit used to measure concentrations in liquids).
MLTR	Makarewa Low Temperature Rendering plant.
MPN	Most Probable Number – a statistical estimate of the mean density of bacteria in a water sample.
N	Nitrogen – An important element in the growth of plant material. It is required for protein formation and consequently animals have a significant N content.
NO _x	Nitrate + Nitrite Nitrogen
Nitrate-N	An oxidised form of Nitrogen – Nitrate Nitrogen is soluble and is therefore readily available to plant life to sustain growth.
Odour Units (OU)	This is the unit for measuring odour. This unit does not refer to weight or volume as with g/m ³ etc, it is essentially based on the group of people being used, to establish the number of dilutions required before an odour cannot be detected.
PAH	Polycyclic Aromatic Hydrocarbons – A class of over 100 different organic molecules composed of only carbon and hydrogen. PAHs are flat molecules with each carbon having three adjacent carbon atoms similar to the structure of graphite. The USEPA has listed 16 of these as priority chemicals due to their potential health effects.
Particulate Matter	The unburnt material that is commonly discharged with the gas or smoke from a fire or boiler.
PM ₁₀	Particulate matter with the aerodynamic particle size of 10 micrometers or less.
Sewage	Combination of the black and grey water.



TP	Total Phosphorus – Phosphorus is an important element in the growth of plant material. Total Phosphorus is a measure of all phosphorus present, including all forms of phosphorous whether it is tightly bound to particulate matter or potentially available to plant life.
TSS	Total Suspended Solid – Very small particles that have the potential to affect the colour and clarity of a water body and can potentially settle out onto a streambed smothering aquatic life in the waterways.
Turbidity	Turbidity is a laboratory measurement to determine the clarity of the water. The higher the result the more cloudy the water.
mg/m ³	A measure of concentration in a liquid or gas. Micrograms of material in 1 cubic metre of water. 1 gram = 1,000,000 micrograms.
USEPA	United States Environmental Protection Agency. The USEPA provides the environmental regulation within the United States. Its data and standards are frequently used as the internal standards by other countries such as New Zealand.



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