Waitaha Catchment
Joint Monitoring Programme
Annual Report
2013-2014

Technical Report 2014-111

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Executive summary

The 2013-2014 annual compliance monitoring report is the 20th report to be prepared for the joint monitoring programme in the Waitaha Stream catchment. The monitoring programme was established in 1994 to integrate the monitoring associated with the air and water monitoring of the formaldehyde resin manufacturing plant now owned by AICA (NZ) Limited (formerly owned by Dynea NZ Limited) and Taranaki Sawmills Limited with other discharges in the catchment. Twelve industrial premises were monitored under this programme during the year under review. The monitoring reflects an on-going process of identifying and improving discharges into the catchment in a similar manner to the management of those in the neighbouring Mangati Stream catchment.

A total of sixteen consents were included in the joint monitoring programme during the 2013-2014 monitoring period. Of these, 11 licenced discharges to water and five licenced discharges to air. The consents include a total of 149 special conditions.

Overall, a high level of environmental and administrative performance was achieved by the consent holders in the industrial area of the Waitaha Stream catchment.

The Council's monitoring included 58 inspections, 47 water samples collected for physicochemical analysis, a fish survey, review of consent holder monitoring data, odour surveys, ambient air quality analyses, ambient PM_{10} monitoring, and deposition gauging.

During the year under review, inspection found that the sites were generally well managed, with only minor issues found at some sites, most of which were addressed promptly by the consent holders. Although there were a small number of minor issues that took some time to resolve at the sites of Symons Property Developments Limited, Taranaki Sawmills Limited and Weatherford New Zealand Limited, there were no resultant significant adverse effects found.

Chemical monitoring of the stream found that although there were measurable changes in some parameters, most of these would have resulted in only minor transient effects at most. In terms of aquatic guidelines, the only exceedances of acute exposure criteria found were for dissolved zinc, and were not considered attributable to the consented discharges monitored under this programme. The dissolved zinc acute (4 hour) exposure criterion was exceeded immediately below De Havilland Drive during the June 2014 survey, and at 0.226 g/m^3, the concentration found was the highest recorded to date at any of the Waitaha Stream sites monitored.

The electric fishing survey found that the upper reaches of the Waitaha Stream supported a depauperate fish community. Overall, it was apparent that this catchment is suffering from a number of factors. Barriers to fish passage have restricted some fish from entering the catchment, and also from progressing up the catchment. The piping of headwaters will have detrimentally affected the hydrology of the catchment, as has the increase in impermeable surface area, as the catchment is developed. In addition, the apparent frequency of contamination reduces water quality, and has the potential to have both chronic and acute impacts on the stream biota, which either leads to fish emigration, or death. It is understood that the lower stream catchment is earmarked for urban development, with some thought being given to establishing a reserve and walkway, similar to that alongside the Mangati Stream. While this has the potential to improve habitat conditions in the lower catchment, it is

important that the water quality entering this reach is of such a quality that the stream biota is not detrimentally affected.

Overall the consented discharges in the Waitaha catchment have a high level of environmental compliance and Council is continuously working with consent holders to apply best practice. The Council, with cooperation with NPDC as the consented reticulation owners, is also educating and engaging with potentially discharging consent holders who maybe unaware of their environmental responsibilities. Tightening up on potentially unauthorised discharges, with time, should improve water quality in the upper catchment of the Waitaha.

There were a total of seventeen Unauthorised Incidents (UI's) recorded in this catchment during the period under review, 10 of which were substantiated at the time of investigation by Council Officers. Seven of the substantiated incidents related to consent holders monitored under this programme (Courtenay Trading Company Limited – 2, New Plymouth District Council – 1, Symons Property Developments Limited – 2, Taranaki Sawmills Limited – 1, Weatherford New Zealand Limited - 1).

During the year, AICA (NZ) Limited demonstrated a high level of environmental and a good level of administrative performance with resource consents, however an improvement is desirable in the communication between the Company and Council regarding the inter-laboratory testing, and notification of discharges to allow the programmed monitoring to be undertaken. Changes will be made to the renewed consent to support this.

During the year, C&O Concrete Products Limited demonstrated a high level of environmental performance, however improvement was required with respect to administrative performance. The Company's consent expired on 1 June 2014, and due to the time taken for the provision of further information requested, the new consent was not issued until part way through the 2014-15 year.

During the year, Courtenay Trading Company Limited demonstrated a poor level of environmental performance, and improvement was required relating to administrative performance in respect of the resource consent. Two abatement notices and one infringement fine were issued in relation to an unauthorised discharge of MCPA and triclopyr, onto land in circumstances which may have resulted in the contaminants entering water. On the day that the contingency plan was due, the Company informed the Council that activities at the site were to cease within two months. Therefore the provision of the contingency plan and updated management plan were not pursued by the Council.

During the year, Greymouth Facilities Limited demonstrated a high level of environmental and high level of administrative performance with the resource consent conditions.

During the year, Intergroup Limited demonstrated a high level of environmental performance and compliance with consent conditions.

During the year, the New Plymouth District Council (NPDC) demonstrated a high level of environmental performance with the resource consents. Although the suspended solids limit on the consent was exceeded, there were no increases of stream turbidity recorded. It is noted that it is not currently the Council's practice to include discharge quality limits on the discharges from the combined NPDC reticulated stormwater outlets. However, improvement is desirable in relation to the reticulated waste water systems and pump station in the Waitaha catchment. A number of sewage overflows to the stream occurred during the year under

review, which will be contributing to the nutrient enrichment found downstream of Connett Road during the fish survey. NPDC has provided an outline of the medium to long term plans to improve their control over the reticulated waste water in this catchment. There are no administrative requirements on the NPDC consents.

During the year, Symons Property Development Limited generally demonstrated a good level of environmental performance and high level of administrative performance with resource consent conditions. However, the Company's overall environmental performance was poor due to breaches of the Resource Management Act and Regional Air Quality Plan in relation to dust discharges from the site. There were two infringement notices issued as a result.

During the year, improvement was required in Taranaki Sawmills level of environmental performance and the Company demonstrated a good level of administrative performance, due to activities relating to the exercise of the Company's stormwater discharge consent. During the year under review a request was made for the Company to investigate measures that may be implemented to improve stormwater quality following discolouration being observed on site during an inspection. The Company was instructed to install silt controls in the area of the log yard, and was also subsequently abated to install additional sediment controls due to an exceedance of the suspended solids limit on the Company's stormwater discharge consent.

During the year, TBS Coatings Limited demonstrated a good level of environmental and high level of administrative performance with the resource consents. One dust complaint was received, but this was not substantiated at the time of investigation. However, an exceedance of the dust deposition rate was observed in one of the five gauges deployed, which was likely to be a result of re-suspended yard dust. Improved control over this aspect of the Company's environmental performance is desirable.

During the year, the Weatherford New Zealand Limited demonstrated a good level of environmental performance, however an improvement is required in relation to the administrative performance with the resource consents. Although there was one exceedance of the oil and grease limit and two exceedances of the suspended solids limit on the consent, there would have been no significant environmental impact. The Company was however, asked to manage the lower interceptor more actively and to install silt controls to treat stormwater from the site.

During the year, Woodwards 2008 Limited demonstrated a high level of environmental and high level of administrative performance with the resource consents.

During the year, Zelam Limited demonstrated a high level of environmental and high level of administrative performance with the resource consents.

For reference, in the 2013-2014 year, 60% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 29% demonstrated a good level of environmental performance and compliance with their consents.

This report includes recommendation for the 2014-2015 year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is the Annual Report for the period July 2013-June 2014 by the Council on the monitoring programme associated with 16 resource consents held by 13 companies in the Waitaha catchment.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of these consents, which relate to discharges to water and emissions to air within the Waitaha catchment.

One of the intents of *the Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of water and air discharges by companies within the Waitaha catchment, and is the 20th combined annual report by the Council for this catchment.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the RMA and the Council's obligations and general approach to monitoring sites though annual programmes, a summary of the resource consents held by companies in the Waitaha catchment, and the nature of the monitoring programme in place for the period under review.

Each company's activity is then discussed in detail in a separate section (sections 2 to 13).

In each subsection 1 (e.g. section 2.1) there is a general description of the industrial activity and its discharges, a photograph or map showing the location of the activity, and an outline of the matters covered by the company's permit/s

Subsection 2 presents the results of monitoring of the company's activities during the period under review, including scientific and technical data, and any information on the Council's Register of Incidents.

Subsection 3 discusses the results, their interpretation, and their significance for the environment in the immediate vicinity of the site under discussion.

Subsection 4 presents recommendations to be implemented in the 2014-2015 monitoring year.

Section 14 presents a summary of the information on file about any unauthorised incidents logged on the Council's database that occurred within the Waitaha catchment.

Section 15 discusses the results of the monitoring of the Waitaha Stream, their interpretation and their significance.

Section 16 presents a summary of all the recommendations made in relation to the monitoring of each company's activities.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The *Resource Management Act 1991* (RMA)primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

(a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
(b) physical effects on the locality, including landscape, amenity and visual effects;
(c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
(d) natural and physical resources having special significance (eg, recreational, cultural, or aesthetic);
(e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the year matters may arise which require additional activity by the Council, for example provision of advice and information, or investigation of potential or actual

courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Unauthorised Incident Register (UIR) includes events where the company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

1.1.5 Evaluation of environmental and consent performance

Besides discussing the various details of the performance and extent of compliance by the consent holder/s during the period under review, this report also assigns a rating as to each Company's environmental and administrative performance.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company's approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the *RMA* can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

Environmental Performance

- **High** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment .The Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices in relation to such impacts.

- **Good** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however

abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

- **Improvement required** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

- **Poor** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an 'improvement required' issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

Administrative performance

- **High** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

- **Good** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of 'best practical option' for avoiding potential effects, etc.

- **Improvement required** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

- **Poor** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2013-2014 year, 60% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 29%

demonstrated a good level of environmental performance and compliance with their consents.

1.2 Resource consents

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The resource consents covered by the Waitaha Joint Monitoring programme are shown in Table 1 and their locations are shown in Figure 1. The programme covered 14 consents during the 2012-2013 year. Nine consents license discharges to water and five are for discharges to air. There are a small number of other consented discharges in the catchment, such as agricultural discharges, which are not covered directly by this monitoring programme.

Outlines of the companies' activities and the special conditions on their consents are presented in later sections, and copies of the full consents are given in alphabetical order in Appendix I.

Table 1 Resource consents in the Waitaha catchment covered by this report

Resource consent	Consent holder	Purpose	Next review date	Expiry date
2367-2	AICA (NZ) Ltd	Discharge up to 150 Ls^{-1} of stormwater from a chemical manufacturing into a wetland at the headwaters of an unnamed tributary of the Waitaha Stream.	-	1 June 2014
4021-2	AICA (NZ) Ltd	Discharge to air from the manufacture of formaldehyde solution and urea formaldehyde resin and associated activities.	-	1 June 2014
4777-1	C&O Concrete Products Ltd	Discharge up to 40 Ls^{-1} of stormwater from a concrete products manufacturing site to the Waitaha Stream.	-	1 June 2014
9793-1	Courtenay Trading Company Limited	To discharge stormwater from a drum recycling site into the Waitaha Stream via the New Plymouth District Council stormwater network (Granted 04 Feb 2014)	June 2020	1 June 2032
0608-3	New Plymouth District Council	Discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream.	June 2014	1 Jun 2026
0609-2	New Plymouth District Council	Discharge up to 1,200 Ls^{-1} of stormwater from an industrial subdivision to an unnamed tributary of the Waitaha Stream.	-	1 June 2014
4988-1	Greymouth Facilities Limited Formerly held by Parker Drilling International of New Zealand Ltd	Discharge up to 110 Ls^{-1} of stormwater and 200 L per day of wash down water from a hydrocarbon exploration drilling equipment storage yard to an unnamed tributary of the Waitaha Stream. (Transferred 17 January 2014) (Expired 1 June 2014)	-	1 June 2014
9868-1	Greymouth Facilities Limited	To discharge treated stormwater from a yard used for storage and maintenance of hydrocarbon exploration drilling equipment into the Waitaha Stream via the New Plymouth District Council reticulated stormwater system, and onto and into land from the skimmer pit (Granted 8 May 2014)	June 2015	1 June 2032
7805-1	Symons Property Development Ltd	To discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream.	June 2014	June 2026
2333-3	Taranaki Sawmills Ltd	To discharge stormwater from a sawmill operating site onto and into land and into the Waitaha Stream.	-	1 June 2014
4096-2	Taranaki Sawmills Ltd	To discharge emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open fire-pit.	June 2014	1 June 2032
4056-2	TBS Coatings Ltd	Discharge emissions into the air from abrasive blasting operations and associated processes at a permanent site at Corbett Road, Bell Block, and from mobile operations at various locations throughout the Taranaki region.	June 2014	1 June 2020
4776-1	Intergroup Limited Formerly held by Transpacific International Limited	Discharge up to 65 Ls^{-1} of stormwater from a truck depot site to the Waitaha Stream. (Transferred 30 January 2014)	-	1 June 2014
4775-1	Weatherford New Zealand Ltd	To discharge up to 130 Ls^{-1} of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream.	-	1 June 2014
7881-1	Woodwards 2008 Limited	To discharge emissions into air from the combustion of untreated timber wastes	June 2014	1 June 2026
4059-5	Zelam Ltd	To discharge emissions into the air from industrial agrichemical formulation processes and associated processes.	June 2014	1 June 2026

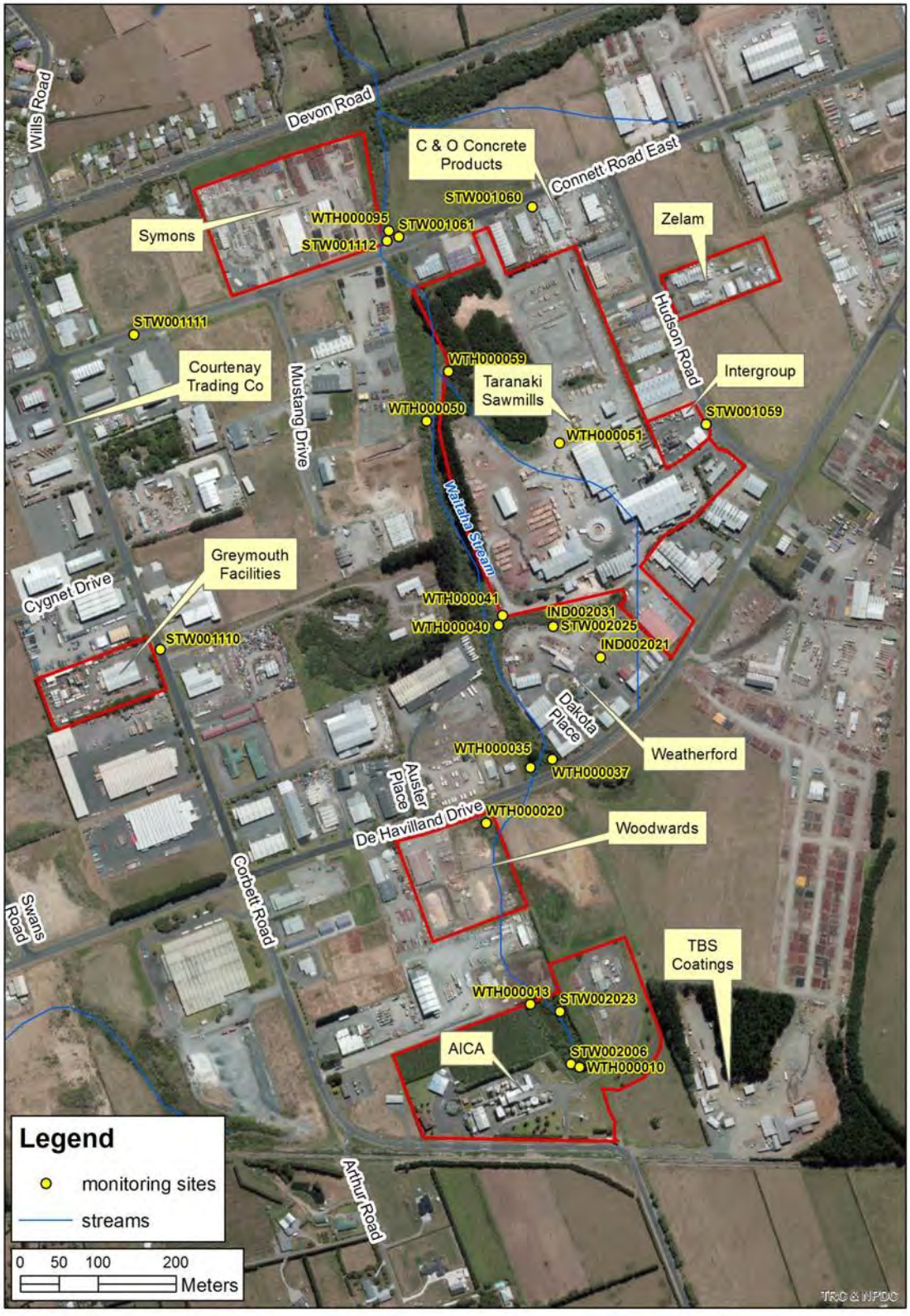

Figure 1 Location of consent holders and surface water monitoring sites

1.3 Monitoring programme

1.3.1 Introduction

Section 35 of the RMA sets out obligation/s upon the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the industries in the Waitaha catchment consisted of six primary components.

1.3.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in on going liaison with resource consent holders over consent conditions and their interpretation and application, in discussion over monitoring requirements, preparation for any reviews, renewals, or new consents, advice on the Council's environmental management strategies and the content of regional plans, and consultation on associated matters.

1.3.3 Site inspections

The sites were visited up to seven times during the monitoring period. With regard to consents for discharges to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.3.4 Chemical sampling

The Council undertook sampling of both the discharges from the sites and the water quality upstream and downstream of the discharge points and mixing zones.

During the year under review the Council undertook sampling of the discharges from AICA NZ Ltd on three occasions, C&O Concrete on two occasions, Courtenay Trading Company Limited on two occasions, Greymouth Facilities Limited on two occasions, Intergroup Limited on three occasions, New Plymouth District Council on two occasions, Symons Property Developments Limited on two occasions, Taranaki Sawmills Ltd on two occasions, and Weatherford New Zealand Ltd on four occasions. The discharges were analysed for key chemical contaminants potentially generated at each site, including contaminants specified under the special conditions of each of the consents.

During 2013-2014, the Council undertook sampling of the Waitaha Stream and tributaries, after reasonable mixing, on two occasions at seven sites in combination with sampling of the individual consent holder discharges. Each sample was tested for parameters that best give an indication of the effects of the discharges and the overall quality of the stream. Sampling of the stream at two sites in combination with the discharges from AICA (NZ) Limited was not undertaken during the year under review.

The Council undertook sampling of both the emissions from processes at various sites and of the ambient air quality in the neighbourhood.

Odour surveys were carried out in the vicinity of the AICA (NZ) Ltd site on four occasions, and the air was sampled and analysed for formaldehyde and phenol at up to four monitoring locations in the vicinity of the sites on one occasion. AICA's commissioning of formaldehyde stack emission monitoring was delayed until early in the 2014-2015 year, the results of which were forwarded to Council.

Continuous PM_{10} monitoring was undertaken at Taranaki Sawmills Ltd on one occasion during the year under review. PM_{10} refers to the measurement of the levels of suspended particulate matter in the air of less than 10 micrometres effective diameter. Particles this small are of significance for human health.

The emissions to air from the sandblasting enclosures were sampled at the TBS Coatings Ltd site, and the ambient suspended particulate concentration of the air was measured using a hand held portable instrument called the Dust Trak. The Dust Trak's principle of operation is based on the refractive index of dust particles in the air and its proportionality to the concentration of particulate in air. The Dust Trak measures particulate matter (less than 10 micrometers in diameter) in milligrams per cubic metre of air (mg/m^3). Rule 19 of the Regional Air Quality Plan for Taranaki states that the discharge concentration of dust from abrasive blasters at the source should be less than 125 mg/m^3 (all diameters). This is also a consent condition for this Company.

Deposition gauges were placed at selected sites in the vicinity of the TBS Coatings Ltd site on one occasion during the year under review, and the collected samples were analysed for deposited particulates.

1.3.5 Biomonitoring surveys

Biological surveys are used to determine the impacts that discharges to a surface water course may cause over a period of time, as distinct from chemical surveys which give detailed information upon the constituents of a discharge at the time of sampling, but cannot give information upon previous discharge characteristics. Biological surveys also directly indicate any significant adverse effects of discharges upon in-stream flora and fauna, so that cause-effect relationships do not have to be established as for critical levels of individual chemical parameters.

1.3.5.1 Macroinvertebrate Surveys

Streambed macroinvertebrates and algae have been collected previously at up to five biomonitoring sites in the Waitaha Stream shown in Figure 2.

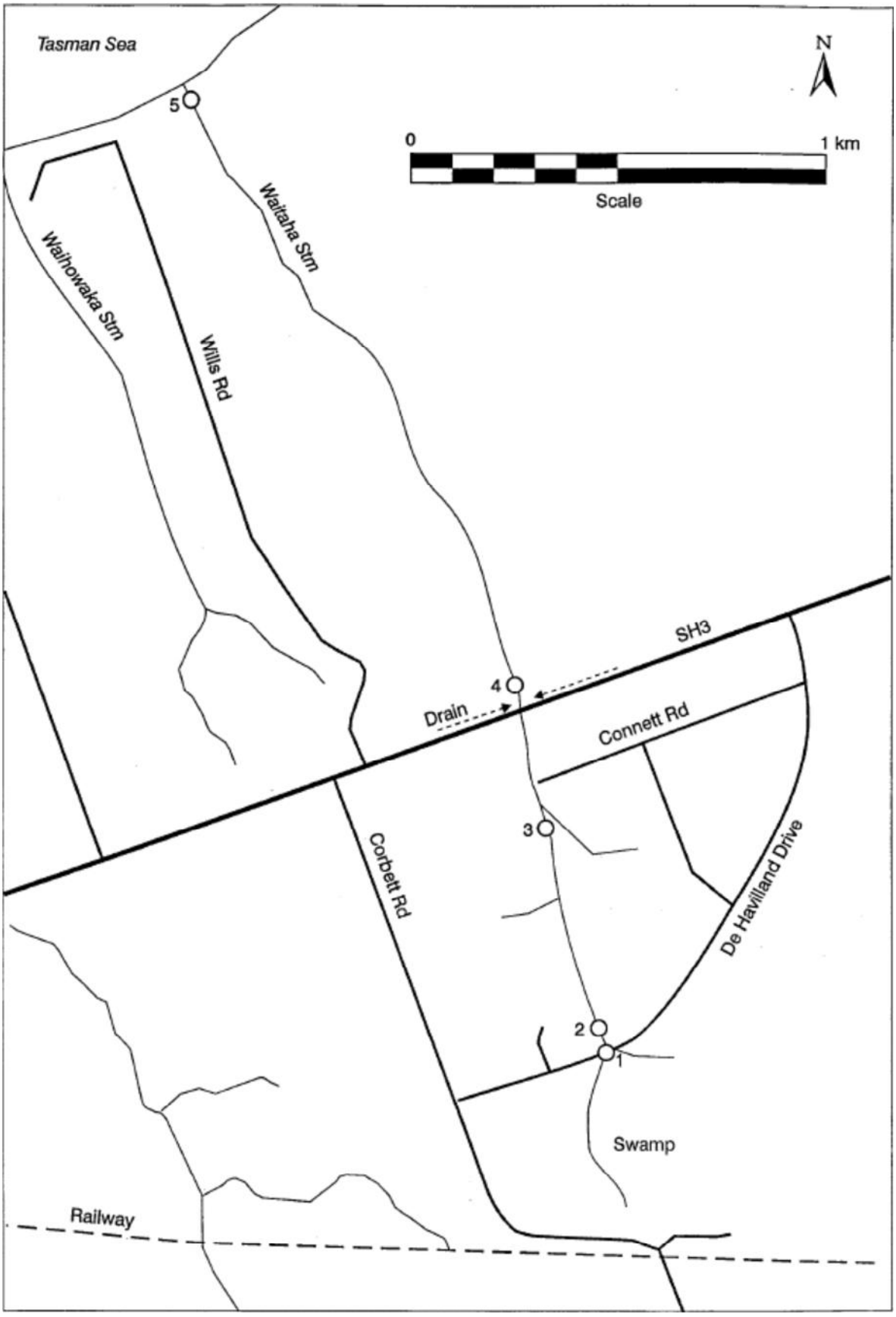

Figure 2 Biomonitoring sites in the Waitaha Stream

The monitoring undertaken in the 2009-2010 year concluded that, for the reasons given below, there was presently no benefit in monitoring the macroinvertebrate communities in the Waitaha Stream.

With regards to future macroinvertebrate monitoring of this catchment, it was recommended that no further biological monitoring be undertaken upstream of State Highway 3, at least until the iron oxide sediment in this reach has appreciably reduced. Directly downstream of State Highway 3, invertebrate habitat is not good due to a lack of substrate heterogeneity and aquatic vegetation. Unless this habitat changes, there is unlikely to be an improvement in invertebrate communities, and similarly, it is unlikely there will be a degradation in communities, unless water quality reduces significantly for example through a continuous unregulated and potentially toxic discharge. The site just upstream of the coast is well downstream of the industrial area, and unlikely to reflect any activities of the industrial area. Monitoring at this site will primarily reflect impacts of land use downstream of SH3, which is outside of the scope of the Waitaha Catchment monitoring programme. Therefore, invertebrate monitoring in the Waitaha Stream was not considered to provide useful monitoring data, and therefore it was recommended it be discontinued.

Based on this recommendation, and there being no significant improvements in the substrate of the stream, there was no biomonitoring scheduled for the 2011-2012 year.

It is noted that the 2009-2010 biomonitoring report also concluded that with regards to future management of this catchment, it was clear that the impacts of urbanisation were already present upstream of SH3. With continued development of that area, such impacts may worsen without careful stormwater management. If residential development was to occur downstream of SH3, this stream could potentially become a reserve, with important aesthetic values, such as that on the Mangati Stream. However, for this to be a viable possibility, the development of the catchment would need to be carefully managed, so as to avoid further reductions in water quality, biological habitat and low flows, primarily through improved stormwater management (including contamination of stormwater). It would also be important to recognise and protect the role spring fed tributaries play for streams such as the Waitaha Stream, with regards to water quality and flow rates.

1.3.5.2 Fish survey

Three sites were sampled in an electric fishing survey conducted on 27 March 2014. The sites were surveyed using a Kainga EFM machine. Those fish captured were identified and counted. Inevitably some fish eluded capture, some of which were identified before reaching cover. The length of each fish was estimated, and then they were released. The details of the sites surveyed are given in Table 2 and the location of sites surveyed in relation to the weir and fish pass are shown in Figure 3.

Table 2 Location of sites surveyed for fish in the Waitaha Stream on 27 March 2014

Site Number	Site code	Description	Altitude (m)	Distance Inland from sea (km)
1	WTH000035	De Havilland Drive	40	2.73
2	WTH000095	Connett Road	35	1.94
6	WTH000197	30m upstream of mouth	5	0.03

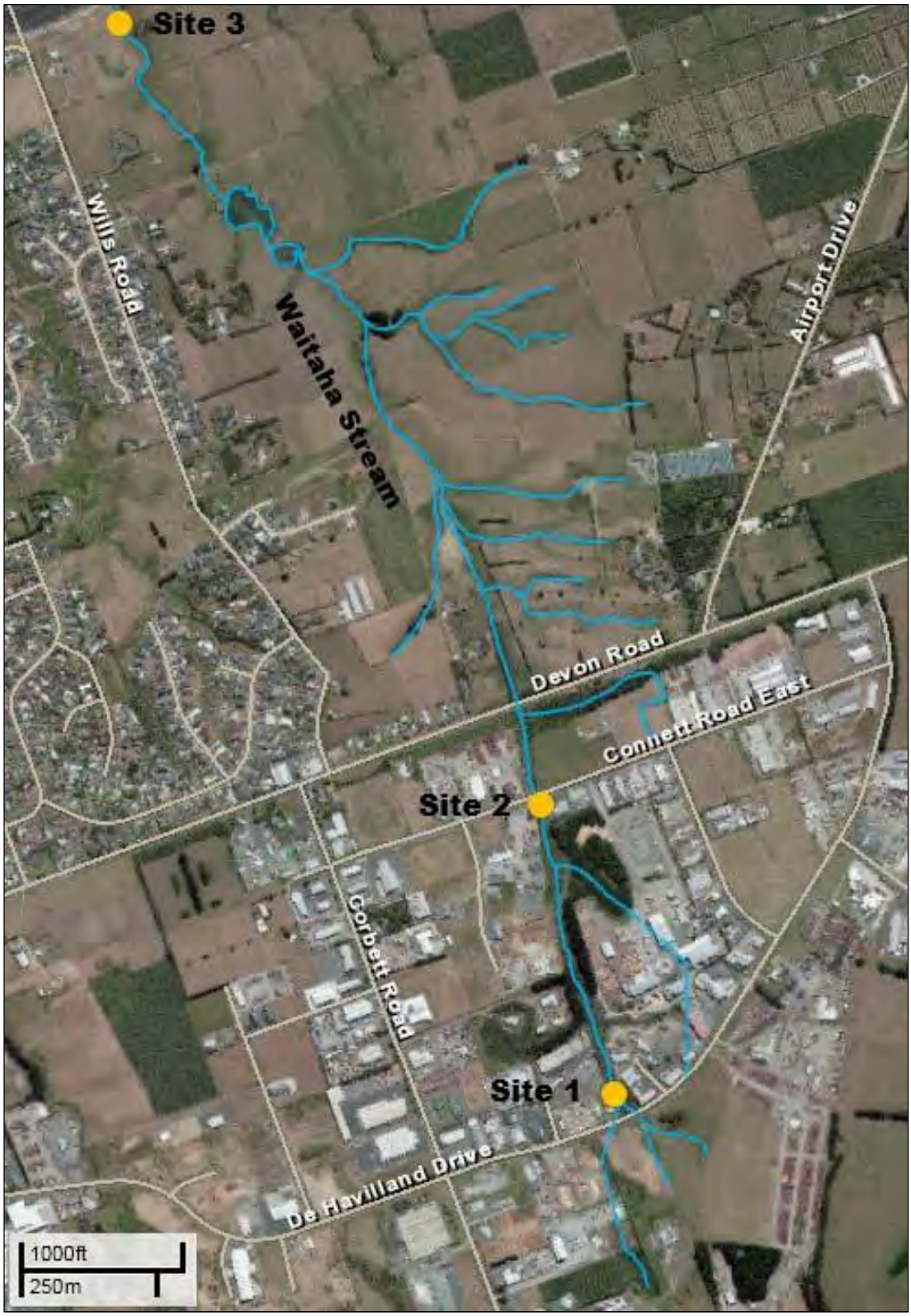

Figure 3 The Waitaha Stream catchment, including electric fishing monitoring sites. The dashed lines are piped sections

This fish survey was undertaken with the intention to quantify the fish populations in the stream, to assess whether there are any indications of fish passage issues, and/or possible impacts from the industrial area. It is the first fish survey undertaken to date in this catchment, although in 1995 an investigation was undertaken in relation to an eel kill (Moore, 1995). The survey was programmed for the 2014-2015 monitoring year,

however this was brought forward due to the number of consent expiring towards the end of the 2013-2014 year. The fish survey is reported on in section 15.2.1.

1.3.6 Provision of company data

Self monitoring is undertaken by AICA (NZ) Ltd and Zelam Ltd, and there is also a periodic reporting requirement on the air discharge consent held by AICA (NZ) Ltd.

In the case of AICA (NZ) Ltd, condition 4 of their stormwater consent requires that the Company keeps records of the chemical monitoring of the stormwater basins and the frequency and volume of the discharges, and that they shall make these records available to Council on request.

Special condition 12[1] of AICA (NZ) Ltd's air discharge consent requires that a written report be provided to Council by 30 June 2001 and every 6 years thereafter.
The report is to cover technological advances and how they might be applied at the site, issues relevant to minimising or mitigating emissions, and detailing an inventory of discharges to air as Council may specify from time to time. The timeframe given in the consent required that the previous report was provided by June 2013. Although consent 4021-2 expired in June 2014, it is expected that a similar condition will be included in the renewed consent.

Additional monitoring and reporting requirements were included in consent 4021 when it was varied on 5 October 2009. Special conditions 4 and 5 require that emissions monitoring is undertaken annually on the absorber tower discharge. This monitoring must be undertaken by an independent party. The conditions under which the testing must be performed, and the reporting requirements, are also specified. This emissions monitoring must be completed by 1 June each year, and the reports must be provided to Council within 20 working days of the testing.

Condition 7 of the air discharge consent held by Zelam Ltd requires that the scrubber liquor of the forced draft scrubbers is maintained at a pH of 9 or more, and special condition 9 requires that the scrubber liquor of the air displacement scrubber contains at least 0.5% of free amine. However, this air displacement scrubber was in place to treat discharges from the quaternising process, which is a process no longer carried out at the site. Special conditions 8 and 10 require that these parameters are monitored and recorded on a weekly basis (pH) or prior to each production run (free amine), and that the data is forwarded to Council, in the form of a written report, upon request.

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[1] Special condition 12 of the varied consent issued 5 October 2009. This was special condition 10 of the original consent granted 12 June 1996.

2. AICA (NZ) Limited

2.1 Introduction

2.1.1 Process description

AICA (NZ) Limited (formerly Dynea NZ Limited) manufactures synthetic resins for the production of wood products at their plant situated above a wetland area at the headwaters of the Waitaha Stream.

Photo 1 AICA (NZ) Ltd site

There have been a number of changes at the site over the years in order to meet market demands. There are two processing areas on site, Plant 1 predominantly for formaldehyde based products, and Plant 2 which was primarily for phenol based products.

In 1999 a 2 tonne mixing vessel was installed at Plant 1 to take advantage of an increase in wood glue sales. This was piped up to the existing utilities and scrubbers.

2.1.1.1 Water

The site has an enclosed stormwater system that directs all road drains to the holding ponds, which are lined with butyl rubber. Areas likely to be contaminated, such as bunds around storage tanks and loading facilities, are directed to the NPDC sewer system.

The car park, where the storage of chemicals is prohibited, drains directly to the receiving waters of the Waitaha Stream. Roof water from the phenolic resins plant (Plant 2) drains to the stormpond.

The access roads around the site should be uncontaminated by raw materials and product, although it is often noted that urea prills are observed on the roadways. The potential for this to enter the receiving waters is minimised by the requirement for truck drivers to air blow all urea residue from their trucks before leaving the urea store. A drain has also been installed in the roadway leading into the urea store so any residue spilled in this area are captured and pumped to the tradewaste system. The stormwater from roadways outside this drain flows into the stormpond. The stormponds also provide containment of spills.

Pond 1 is capable of containing 300 m^3 of stormwater and Pond 2 can hold 100 m^3.

AICA are currently storing some materials in the Plant 2 area, either inside the chemical storage shed, or outside the shed in an area that drains to Pond 2, whilst disposal options are evaluated.

Analysis of the stormwater is carried out by the Company prior to discharge occurring. Should the stormwater be outside the limits given in the consent, it is discharged to the NPDC sewer system as trade waste, or is re-circulated through the on-site system for further mixing, aeration and biological attenuation. At times, the stormwater is also used to dilute the trade wastes from the plant.

The results of the analyses are kept in the Company Operational Log, along with the operators' comments as to where the discharge is being pumped.

During the 2010-2011 year Council was advised that subject to production demands the Company was going to be closing the production site over weekends. During the 2011-2012 year the site was de-manned over the weekends. There were monitoring systems in place that allowed on-call staff to remotely supervise the New Plymouth site. The on-call operators would deal with any issues that arose. If the on-call operator does not respond to this call, a series of management staff will be contacted until someone can be found. The move to this situation was staged. Initially the site was shut down, but the staff providing the weekend cover were present at the site to ensure a smooth transition to the remote monitoring system. And this style of operation has continued under AICA (NZ) Limited's ownership. Whilst the site is unmanned AICA do not run the Formaldehyde or Resin batch processes. All unnecessary utilities are also shutdown. The package boiler has been upgraded to allow it to run unattended, and this and other supporting ancillary equipment continue to run during the de-manning periods to keep critical equipment at the correct temperatures.

Council was informed that all bunds, wastewater and storm water ponds were to be pumped dry by Friday evening. All gates would be padlocked shut and the security system will be activated. High and "HiHi" level alarms are fitted in the storm pond sump, with the "HiHi" level being at the top of the pond liner. On the High alarm, an operator would come to site, test the water in the stormpond, and if found to be in specification, it would be pumped to the tributary. If out of specification it would be pumped to the tradewaste storage for further testing and possible discharge to the NPDC system.

The high level switch is set at approximately 250 m^3; the "Hi-Hi" has been set at 300 m^3. The Company estimated that the bunded area over and above the pond liner will hold

a further 600 m^3 before it spilled over into the stream. This allows plenty of time for the site stormwater to be managed appropriately.

A new chemical storage shed was built on the Plant 1 site to store raw materials used in the production of wood specialised adhesives (WSA). A section of this shed has been bunded to allow for the storage of some finished products, generally intermediate bulk containers (IBCs) or drums.

The Company is required to maintain a contingency plan for the site, which identifies the measures to be undertaken to prevent spillages and avoid, remedy or mitigate the effects of accidental spillages. An update of this plan, including the necessary provisions to cover the weekend de-manning, was received in September 2011. The contingency plan, which considers both discharges to water and emissions to air, was reviewed in April 2013.

2.1.1.2 Air

Emissions to air of formaldehyde, phenol, resorcinol and resin are reduced by the use of water scrubbers in the formaldehyde absorber tower and on the vents from the resin plant and formalin, resin, phenol and resorcinol tanks. All phenol and resorcinol vapours that leave the process kettles are condensed under vacuum.

Formaldehyde Plant - Plant 1

Formaldehyde solution is produced at the plant by the catalytic oxidation and dehydrogenation of methanol in a continuous process. This is then used in the production of urea-formaldehyde and melamine-urea-formaldehyde resins.

The urea formaldehyde resin manufacturing plant was commissioned in April 1989. At that time, the facility was owned by A C Hatrick Ltd. Part of this plant was designed to produce formaldehyde solution by the catalytic oxidation and dehydrogenation of methanol, at a capacity of 60 tonnes per day. Air, methanol, and water are fed into a vaporiser and mixed so that gas leaving the unit has the approximate composition of methanol vapour in air. Vaporisation is controlled by a steam heating coil and heat from the absorber cooling system. The gases leaving the vaporiser pass through a demister before entering the reactor. The reactor has a silver catalyst operating at 610-690°C. The reaction is exothermic (heat releasing), and the heat is recovered in a boiler. The major products are formaldehyde, hydrogen, carbon dioxide, carbon monoxide, and condensation, and absorption takes place in a 4 section system. The three main absorption loops are circulated through heat exchangers with the bottom loop providing heat to the vaporizer. Formaldehyde solution at a concentration of 37-50% by weight is drawn off the bottom absorption loop and pumped to storage. Insoluble gases exit the absorber from a top vent at 10-15°C. These emissions consist roughly of 20% hydrogen, 70% nitrogen, 2-3% water, 4-6% carbon dioxide and around 1% carbon monoxide. There are also traces of formaldehyde, methanol, and various reaction by-products.

Much of the formaldehyde produced is reacted in a second part of the plant with urea to produce urea formaldehyde resin. This plant has a capacity of 80 tonnes per day when operating continuously. There are two steps in the reaction; an addition reaction between urea and formaldehyde and a condensation reaction with methylene and ether.

Ammonium sulphate is used as an initial catalyst, and vacuum distillation is used to increase the non-volatile components by removing water and methanol which are returned to the formaldehyde process.

The primary source of emissions to the atmosphere is therefore the vent on the formaldehyde absorption tower, 22 metres above ground level. There are exhaust gases (including water vapour) from a gas-fired boiler flue, and some steam from the plant's cooling tower, together with minor emissions from storage tanks and the laboratory fume cupboard.

Formaldehyde occurs naturally in meat and some kinds of fruit and vegetables, and is released in cigarette smoke, and from furnishing fabrics, glues, and wood grain panelling. Motor vehicles and domestic solid-fuel combustion are major sources of formaldehyde in the urban environment. Concentrations in most buildings using wood grain resin-bonded panels would typically average 0.10-1.00 mg/m^3. Formaldehyde has been found to cause cancer in some animal species when administered at extremely high doses. It has not been found to cause cancer in humans, and may or may not eventually be found to do so. The major route for exposure to formaldehyde in humans is inhalation. The main toxic effects for acute exposure are eye, nose and throat irritation and effects on the nasal cavity. Other effects include coughing, wheezing, chest pains and bronchitis. Chronic exposure has also been associated with respiratory symptoms and eye, nose and throat irritation. The limit of detection for formaldehyde odour is about 0.08 mg/m^3.

The World Health Organisation notes that there is variability in human formaldehyde responses, with significant increases in signs of irritation occurring at levels above 0.1 mg/m^3 and a progression of symptoms occurring above 1.2 mg/m^3. No lung function alterations were noted in healthy non-smokers and asthmatics exposed to formaldehyde levels up to 3.7 mg/m^3.

In the national Ambient Air Quality Guidelines (Ministry for the Environment, 2002) a formaldehyde limit of 100 $\mu g/m^3$ (0.1 mg/m^3) was given. It should be noted that the primary consideration by the Ministry for the Environment in setting this guideline, has been to ensure that ambient (outdoor) air can be used to dilute indoor concentrations of formaldehyde. This limit protects against tissue irritation of the eyes, nose and throat.

The World Health Organisation (2005) also proposed a limit of 0.1 mg/m^3 as adequate to protect against sensory, toxic and carcinogenic risk.

In the Good Practice Guide for Air Quality Monitoring and Data Management 2009, the Ministry for the Environment states that:

- ambient air quality guidelines are concentration limits recommended to protect human health and the environment under the RMA,
- they may be incorporated into regional plans as objectives or targets, and
- that the Guidelines should be followed as closely as possible for the sake of good practice and national consistency.

Melamine expansion

In late 1991 the Company expanded its activities, by adding a melamine-formaldehyde resin manufacturing process capable of producing 40 tonnes per day. The changes included the introduction of melamine on to the site. Additional storage tanks for formaldehyde were manifolded to the existing tank scrubber system, and a dust control system installed on the melamine powder handling facilities. The new reaction vessel was also vented to the existing tank scrubber system.

Phenol Plant – Plant 2

The phenol plant (Plant 2), for which consent 4421 was granted by the Council in December 1993, was constructed during 1994. The first reactor kettle was commissioned in April 1995. A second kettle was installed during the latter part of the 1994-1995 monitoring year, and was subsequently commissioned in mid-August 1995.

The two kettles were multi-purpose facilities, enabling the manufacture of the same formaldehyde and melamine resins described above. In addition, they allowed the preparation of phenol-based and resorcinol-based resins. The plant could be operated in a manner that was fully independent of the primary plant. Emissions from the site were condensed for recovery, and residual emissions were scrubbed by water solution, which was subsequently recycled as process make-up water.

In 1998 a 2 tonne capacity trial reactor was added to allow the production of trial white and red formaldehyde based resins. This reactor was piped up to the existing utilities and scrubber. This facility has now been relocated to Plant 1.

In early 2009, due to the economic downturn it was decided that Plant 2 would be decommissioned.

Phenol manufacturing has been transferred to the AICA site in Nelson and the 2 tonne trial reactor was relocated into a new building at Plant 1. This is used to trial resin batches prior to them going in to full production. A second 6 tonne mixing vessel has also been installed that is used to produce wood specialised adhesives (WSA) and hardeners. This vessel has a dust collector installed to reduce emissions to the atmosphere.

A new scrubber has also been installed in the resin plant to take advantage of new technology and further reduce emissions.

2.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. The stormwater discharge from the site has been consented since 11 November 1987.

AICA (NZ) Limited currently holds water discharge permit 2367-2 to cover the discharge of up to 150 litres/second of stormwater from a chemical manufacturing complex into a swamp at the headwaters of an unnamed tributary of the Waitaha Stream. This permit was issued to Dynochem (NZ) Limited by the Taranaki Regional Council on 20 March 1996 under Section 87(e) of the RMA.
The consent was transferred to Dynea NZ Limited on 21 June 2001, and to AICA (NZ) Limited on 2 April 2013. A variation to the conditions allowing an increased

concentration of ammonia and formaldehyde in the discharge was granted on 7 May 2002. It expired on 1 June 2014.

An application to renew this consent was initially received by Council on 29 November 2013. The application was considered to be incomplete and was therefore returned to the applicant with guidance on the information that would need to be included for the application to be accepted. An application to renew the consent was received and accepted on 26 February 2014. Although the application was still lacking some information, it was considered that this could be addressed through a request for further information under Section 92 of the RMA.

The application to renew consent 2367 was lodged more than 3 months before expiry, therefore as per Section 124 of the RMA, the Council has exercised its discretion, allowing the activity to continue to under the conditions of the expired consent until a decision is made on the renewal.

Special conditions 1 and 2 limit the contaminant concentrations in the discharge and the effects that the discharge may have on the receiving waters of the Waitaha Stream.

Special condition 3 requires the Company to maintain a contingency plan.

Special condition 4 specifies the records that must be kept in relation to the stormwater discharges from the site.

Special condition 5 prohibits the storage of chemicals in the car park and special condition 6 sets out provisions for review of the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

2.1.3 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

AICA (NZ) Limited operates a formaldehyde manufacture and resin production plant in Bell Block and holds air discharge permit **4021-2** to cover the discharge emissions into the air from the manufacture of formaldehyde solution and urea formaldehyde resin, together with emissions from associated activities at the plant premises. The consent was formerly held by Dynochem NZ Limited, and then Dynea NZ Limited.

In 1993 the production capability was increased by building a multi-purpose plant at the site to manufacture urea, melamine, phenol and resorcinol resins. The new plant (Plant 2) used a batch process, producing whichever type of resin was required at the time, with discharges to air from this new site covered by consent 4421.

The existing plant (Plant 1) already manufactured all of these except for phenol and resorcinol resins, under air discharge permit 4021, which was formerly a clean air licence HD/10/0034/91. This permit expired on 1 April 1996, and Dynochem applied to renew consent 4021 as a generic air discharge permit for the whole site. Consent **4021-2** was issued to Dynochem (NZ) Limited by the Council on 12 June 1996 under

Section 87(e) of the RMA. Consent 4421 became superfluous and was surrendered. Consent 4021 was transferred to Dynea NZ Limited on 21 June 2001, and was varied to increase the permitted formaldehyde emission rates and ambient formaldehyde concentration beyond the site boundary on 6 October 2009. The consent was transferred to AICA (NZ) Limited on 2 April 2013. It expired on 1 June 2014 and is in the process of being renewed.

At the time of the variation, no changes to plant processes were proposed. The changes reflected changes in analytical methodology in relation to the formaldehyde emissions monitoring, together with measurements of ambient formaldehyde which showed that vehicular traffic in the vicinity of the site impacted on the ambient formaldehyde concentration to a greater degree than emissions from the plant. The new ambient concentration limit requested by the Company was the concentration given as the minimum requirement of the health-based Ambient Air Quality Guidelines (Ministry for the Environment, 2002).

A summary of the conditions of consent 4021-2 are given below.

Special condition 1 limits the total emission rate of formaldehyde from all processes and special condition 2 limits the discharge rate of formaldehyde from main stack and scrubber tower vent of Plant 2.

Special condition 3, requires satisfactory monitoring of the exercise of the consent and its effects.

New special conditions 5 and 6 were inserted that require formaldehyde emissions monitoring to be conducted by an independent party on an annual basis to confirm that the Company is complying with special condition 2. These conditions also specify the standard to which the testing must be performed, the reporting requirements, and the timing of the testing and reporting.

Special condition 6 (formerly condition 4) requires that processes are operated and managed to minimise emissions.

Special conditions 7, 8 and 9 (formerly conditions 5, 6, and 7) limit the permitted ambient ground level concentration of formaldehyde, phenol, and resorcinol respectively. The formaldehyde limit was increased as part of the consent variation.

Special conditions 10 to 14 were unchanged.

Special conditions 10 and 14 (formerly conditions 8 and 12) contain provisions for reviewing the conditions of the consent.

Special condition 11 (formerly condition 9) requires consultation with the Council prior to significant changes at the plant that may affect the quantity or nature of the discharge.

Special condition 12 (formerly condition 10) requires the Company to provide a report to Council every 6 years detailing the discharges to air from the site and reviewing technological advances or other issues relevant to the minimisation or mitigation of discharges from the site.

Special condition 13 (previously condition 11) defines, and requires the Company to adopt, the best practicable option to prevent or minimise adverse effects.

An application to renew this consent was received by Council on 29 November 2013.

The application to renew consent 4021 was lodged more than 6 months before expiry, therefore as per Section 124 of the RMA, the Company can continue the activity under the conditions of the expired consent until a decision is made on the renewal.

A copy of the permit is attached to this report in Appendix I.

2.2 Results

2.2.1 Water

2.2.1.1 Inspections

18 September 2013

Site inspection found that little activity was taking place on site at the time of the inspection. No resin was being manufactured on site during the week of the inspection.

All tanks and storage facilities on site were well bunded, with all stormwater collected within these areas being routinely transferred to a storage tank prior to discharge via the NPDC wastewater treatment plant.

All stormwater from the clean areas on site were directed for storage in one of two separate lined storage pits on site. The stormwater is then tested on site prior to discharge. At the time of the inspection both storage ponds were approximately half full with plenty of free board still available. The discharge pipe for pond 1 was inspected with no adverse effects noted in the receiving environment. There was no sign of adverse effects on vegetation about the discharge location.

The clean catchment area about pond 2 had recently had works carried out within it. This had resulted in some minor spills of solid material on the concrete. Two drums were observed within the drum storage area about pond 2 that had no lids in place. It was recommended to staff on site that lids be placed on these to prevent the possibility of the drums filling and overflowing as a result of wet weather.

In general, it was considered that the site was clean and tidy.

10 December 2013

A site inspection was completed in relation to the tailored compliance monitoring programme. Inspection found that resin had recently been manufactured on site, and a truck was being loaded with product.

It was reported that the stormwater pond was full, but not discharging at the time of the inspection. The discharge location was inspected and it was found that grass and vegetation was growing well about the point of discharge, and in the area where the discharge flows overland prior to entering the Waitaha Stream. The downstream monitoring point near the culvert was inspected, and the stream was found to be flowing clean and clear.

The urea bay was in a clean and tidy condition, with no sign of product being tracked outside the storage shed, where it may become entrained within the stormwater system.

The inspecting officer was informed that the bunds containing the various storage tanks were currently subject to an examination regarding their permeability, and will be upgraded where the need is identified.

It was reported that there were no issues identified at the time of inspection.

24 February 2014

A site inspection was carried out as part of the routine compliance monitoring programme. Inspection found that resin was being manufactured at the time of inspection.

Site inspection found that the site in general was clean and tidy. Chemicals were stored within appropriately concrete bunded areas where any spill would either be contained or directed to the trade waste sump.

Areas about the general stormwater collection points were clean, tidy and free of spills. The entrance to the urea storage shed was tidy and there was no indication of urea being tracked out onto the areas in which storm water is collected.

Other than undergoing a general clean-up, no activities have taken place about the decommissioned factory area (plant 2).

Samples were taken from both stormwater ponds to ensure that the discharge would be in compliance with resource consent conditions should a discharge occur.

21 May 2014

A site inspection was undertaken as part of routine compliance monitoring. Inspection found that the business was conducting normal operations at the time of inspection.

Both storm water ponds were inspected and found to be well below the ability to be discharged. Samples were taken from both ponds to ensure compliance with resource consent conditions should a discharge occur.

The site was found to be clean and tidy at the time of inspection. The areas that collect stormwater and direct it to the holding ponds were found to be free of spills. There was no sign of urea being tracked onto the clean areas from the urea store. The inspecting officer was informed that the bunding about the site had recently been inspected and remedial works were being undertaken to upgrade them.

Some drums were still stored near stormwater pond 2 at the decommissioned plant. It was noted that works had begun to dispose of the drums; with it being planned that all drums would be removed in the near future.

2.2.1.2 Results of discharge monitoring

AICA's stormponds were sampled on three occasions during the year under review. The results are presented in Table 3. The AICA stormpond monitoring data provided to Council did not identify their results for the inter-laboratory comparison exercise

during the year under review, and therefore where there are AICA results reported that are within 48 hours of the inter-laboratory sampling day/time, these are included in the table.

Table 3 Results of discharge monitoring at AICA (NZ) Ltd (inter-laboratory comparisons)

Site		Lab	Conductivity (mS/m @ 20°C)	Formaldehyde (g/m³)	Ammoniacal nitrogen (g/m³-N)	Oil & grease (g/m³)	pH	Phenol (g/m³)	Suspended solids (g/m³)	Temp (°C)	Urea (g/m³N)	Sample origin
Consent limit (for discharge to tributary)			-	*2*	*20*	*15*	*6-9*	*1*	*100*	-	-	
Pond 1 STW002006	24 Feb 2014	TRC 10:06	11.4	<0.1	2.11	1.0	7.6	<0.02	145	20.0	4.22	Not discharging
		AICA	-	-	-	-	-	-	-	-	-	Next sample results 14 Mar 2014
	21 May 2014	TRC 11:26	16.4	<0.1	14.2	b	7.9	<0.02	100	18.1	2.56	Not discharging
		AICA* 17:40	14.0	0	18	-	8.0	1	-	-	-	Held over then discharged to trade waste
	10 Jun 2014	TRC 11:04	7.1	<0.1	2.41	b	6.4	<0.02	17	14.1	4.35	Not discharging
		AICA* 14:55	26.3	5	3.38	-	8.9	0	-	-	-	Held over then discharged to trade waste
Pond 2 STW002023	24 Feb 2014	TRC 10:10	5.4	<0.1	1.06	<0.5	7.1	<0.02	7	21.3	1.54	Not discharging
		AICA	-	-	-	-	-	-	-	-	-	Next sample results 10 Apr 2014
	21 May 2014	TRC 11:34	14.9	<0.1	1.47	b	7.3	<0.02	15	15.8	4.90	Not discharging
		AICA* 18:19	12.2	0.4	0	-	7.3	0	-	-	-	Held over. Retested and discharged to tributary 26 May 2014
	10 Jun 2014	TRC 11:12	8.5	<0.1	4.25	b	7.4	<0.02	7	13.6	1.86	Not discharging
		AICA* 14:56	40.7	3	4.62	-	8.1	0	-	-	-	Held over. Retested and discharged to tributary 30 Jun 2014

KEY: Bold results do not comply with consent conditions and should not be discharged to tributary

a pond too low to sample

b parameter not determined, no visible hydrocarbon sheen and no odour

* Inter-laboratory sample results were not identified in self monitoring results provided. The results given above are for the closest available stormwater samples logged by AICA staff.

In the past there have been discrepancies in results between the Council and Dynea (the former consent holder) particularly for ammonia, formaldehyde and phenol. These are largely due to differences in analytical methods and have been discussed in previous annual reports.

Prior to 2008, when the programmed number of inter-laboratory samples were successfully being collected and jointly tested, Dynea was showing a fairly consistent trend of overestimating the amount of ammoniacal nitrogen and formaldehyde present in the discharge, thus giving confidence that there was little chance of the discharges actually containing greater than the permitted concentrations of these contaminants, even when a discharge was made on a Dynea test result that was at the limit. Between the 2008–2009 and 2012-2013 years, due to on-going communication issues, there have been difficulties getting the programmed number of inter-laboratory samples collected and jointly tested. During this time, the limited number of true inter-laboratory samples available have shown that Dynea, and then AICA, have possibly been underestimating the concentration of these contaminants, with the results available from the 2012-2013 year supporting this more recent trend.

Council's concern regarding the potential underestimation of contaminant concentrations and reduced number of true inter-laboratory samples has been highlighted in previous reports, as there have been a number of occasions when the stormwater from the stormponds has been discharged to the Waitaha Stream when AICA's analytical results have determined that the concentration of one of these contaminants was at, or close to, the upper limit permitted by the consent.

During the year under review, there were no true inter-laboratory sample results.

There were no discharges occurring on any of the five occasions that the monitoring officer visited the site.

2.2.1.3 Results of receiving environment monitoring

The programme allowed for monitoring of the Waitaha Stream to be undertaken on two occasions in conjunction with discharge sampling. The programme provided for sampling of the Waitaha Stream at the headwaters (WTH000010), approximately 10 metres upstream of the discharge from Pond 1, and below the mixing zone (WTH000013), approximately 25 metres downstream of the discharge from Pond 2.

During the year under review the programmed site specific receiving water sampling was not undertaken due to communication issues around when the stormwater ponds were being discharged. It is expected that the renewed consent will require notification to Council prior to discharging from the ponds to the stream to enable effective monitoring of the effects, if any, of the stormwater discharges from the site.

2.2.1.4 Provision of company data

The data provided by AICA in relation to their stormwater discharges complied with the majority of the requirements of condition 4 of consent 2367. The volumes recorded are estimates based on the water level in the pond, noting that there is no level gauging device in either of the ponds. Although this has been accepted as satisfactory by Council in the past, it was highlighted in the 2011-2012 Annual Report that Council was reviewing this position. It is likely that the renewed consent will contain more

specific requirements around the monitoring and reporting of discharge rates, volumes and times. This is due to the concerns that have come to light over the appropriateness of the ammoniacal nitrogen limit, bearing in mind that the Company had been applying this limit to discharges made during dry weather, rather than only in wet weather conditions, as was indicated during the processing of the variation to the consent in 2002.

Special condition 2 of the Company's consent prohibits significant adverse effects on aquatic life, habitats or ecology beyond a 10 metre mixing zone. Therefore in the 2010-2011 year it was recommended that the consent holder considers adopting the following approach, with a view to avoiding discharges that may result in a breach of special condition 2:

- Monitoring the temperature of the stormwater to be discharged, so that the unionised ammonia concentration can be determined.
- Avoiding the discharge of stormwater containing more than 0.025 g/m^3 of unionised ammonia when it is not going to be raining for the duration of the discharge.
- At all other times, giving consideration to the flow of the stream in relation to the discharge rates, and pH and concentration of unionised ammonia in the stormwater, rather than focussing solely on whether each individual parameter is within the permitted range.
- Working out where any contamination in pond 2 is coming from so it can be eliminated (as this plant is not operational), thereby increasing the dilution capacity.

A review of the 2013-2014 data showed that all stormwater discharges recorded during the year under review complied with the component concentration limits in the Company's consent. A summary of the data is presented in Table 4.

Table 4 Summary of AICA provided stormpond self monitoring relating to pond discharges to the Waitaha Stream, 2013-2014

	Pond 1					Pond 2				
	pH	Condy µS/m @ 25°C	NH4 g/m^3-N	Form g/m^3	Phenol g/m^3	pH	Condy µS/m @ 25°C	NH4 g/m^3	Form g/m^3	Phenol g/m^3
Minimum	6.8	41.8	0	0	0	7.4	13.7	0	0	0
Maximum	9.0	473	20	10	0	9	487	10	1.5	0.5
Median	8.4	201	5	0	0	8.1	85	0	0	0
Number of discharges	19	19	19	19	19	20	20	20	20	20

There was one occasion on which it was reported that the stormwater from pond 1 had been discharged to the tributary when testing had shown that the formaldehyde concentration exceeded the consent limit. This was logged as an unauthorised incident on Council's Unauthorised Incidents Register. Follow-up with the Company found that this was a data entry error, and that the pond contents had actually been pumped to trade waste. This is discussed in more detail in section 2.2.3.

There were occasions on which stormwater was discharged containing contaminants at, or very close to, the limit of the consent i.e ammoniacal nitrogen (1 occasion), formaldehyde (2 occasions) and pH (11 occasions), which is why there are concerns regarding the limited inter-laboratory data to support AICA's in-house testing.

Although no temperature data was available, an estimated range for the corresponding unionised ammonia concentrations can be calculated based on the pH and ammoniacal nitrogen concentrations provided by the consent holder, for temperatures of 10°C and 20°C.

Unionised ammonia concentrations over 0.025 g/m^3 may result in toxic effects. The concentration range above which acute toxic effects may be seen for New Zealand native fish, e.g. fish kill, is 0.75 to 2.35 g/m^3. During the 2013-2014 year, about 75 % of discharges from pond 1 and 30 % of the discharges from pond 2 would have contained unionised ammonia concentrations of greater than 0.025 g/m^3. Six discharges contained a concentration of unionised ammonia above 0.75 g/m^3, with all of these discharges occurring from pond 1.

These unionised ammonia concentrations in the discharge may not result in adverse environmental effects in the receiving water when suitable dilution capacity is available (as referenced in the officers report for the application to vary the consent to increase the contaminant concentration limits in 2002). During the year under review, all but one of the discharges with elevated unionised ammonia concentration occurred on days when there was rainfall recorded at the Mangati monitoring station located approximately 1600m north east of the AICA site. It is noted that on 11 October 2013, both ponds were discharged (200 and 150 cubic metres) with elevated unionised ammonia concentrations, and only 2.2 mm of rain was recorded at the Mangati monitoring site on that day. It is also noted that these discharges occurred starting at about 3:35 am.

2.2.2 Air

2.2.2.1 Inspections

18 September 2013

Site inspection found that little activity was taking place on site at the time of the inspection. No resin was being manufactured on site during the week of the inspection. There were no objectionable odours or visible emissions noted at the time of inspection.

10 December 2013

A site inspection was completed in relation to the tailored compliance monitoring programme. Inspection found that resin had recently been manufactured on site, and a truck was being loaded with product. At the time of the inspection a slight intermittent westerly wind was blowing. There were no objectionable odours or visible emissions noted at the time of inspection.

24 February 2014

A site inspection was carried out as part of the routine compliance monitoring programme. Inspection found that resin was being manufactured at the time of inspection.

No odour was noted on site at the time of the inspection.

21 May 2014
A site inspection was undertaken as part of routine compliance monitoring. Inspection found that the business was conducting normal operations at the time of inspection. There were no objectionable odours or visible emissions noted at the time of inspection.

2.2.2.2 Results of receiving environment monitoring

Odour surveys
Odour surveys were undertaken in conjunction with site inspections on 18 September 2013, 10 December 2013, 24 February 2014 and 21 May 2014.

There were no odours detected from the plant on any of these monitoring occasions.

Gastech monitoring
Ambient Gastech monitoring for phenol and formaldehyde was carried out in conjunction with the three of the odour survey and site inspections. The sampling was conducted at two downwind sites. There were no detectable levels of either parameter reported as having been found. As the phenol monitoring would also detect the presence of resorcinol, it can be inferred that the resorcinol concentration was also negligible during these surveys.

2.2.2.3 Provision of company data

Emissions testing
Special conditions 1, 2, 4 and 5 relate to the standard to which formaldehyde emissions from the plant site must be treated, and outline the frequency and conditions under which formaldehyde emissions testing must be performed to confirm compliance. The timing of the testing, and reporting of the results to Council are also specified.

Testing must be undertaken by a party independent from the Company and as specified in USEPA[2] Method 0011, which is an isokinetic method ensuring a fully representative sample is collected. Acidified dinitrophenyl hydrazine (DNPH) is used to trap the formaldehyde present in the sample. This testing must be undertaken before 1 June each year, comprise not less than three samples taken under production conditions that give rise to maximum emissions, and the results (including all raw data) are to be reported to Council within 20 working days of the testing.

It is noted that the former owners (Dynea) had previously been experiencing difficulties in obtaining reliable results from the organisations contracted to undertake this monitoring, generally due to saturation of the DNPH in the sampling train.

During the 2102-2013 year it was identified that the saturation of the DNPH was likely to be due to the presence of carbon monoxide in the discharge, and therefore additional "breakthrough impingers" were included in the sampling train to allow confirmation that all of the formaldehyde present in the gas stream had been captured and accounted for in the results reported. These matters have been discussed in more detail in the 2012-2013 Waitaha Catchment Monitoring Programme Annual Report (Technical report 13-84).

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[2] United States Environmental Protection Agency

The emissions monitoring due by 1 June 2014 was delayed until early in the 2014-2015 monitoring year due to the plant being shut down on a number of occasions for maintenance. The monitoring was undertaken on 16 July 2014, and the results showed that the absorber tower formaldehyde limit was complied with at the time of testing. The results will be reported in full in the 2014-2015 Annual Report.

Periodic reporting on technological advances

Special condition 12 of AICA's air discharge consent 4021-2 requires:

"That the consent holder shall provide to the Chief Executive, Taranaki Regional Council, by 30 June 1997, and again by 30 June 2001, and every six years thereafter, a written report:

(a) reviewing any technological advances in the reduction or mitigation of discharges to air from the site, how these might be applicable and/or implemented at the site, and the costs and benefits of these advances; and

(b) addressing any other issue relevant to the minimisation or mitigation of discharges to air from the site that the Chief Executive, Taranaki Regional Council, considers should be included; and

(c) detailing an inventory of discharges to air from the site of such contaminants as the Chief Executive, Taranaki Regional Council, may from time to time specify following consultation with the consent holder."

The fourth iteration of the report required by condition 10 was received in April 2013. It is anticipated that the renewed consent will contain a reporting condition.

2.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by AICA (NZ) Ltd.

One unsubstantiated incident was recorded early in the 2014-2015 monitoring year that related to the 2013-2014 stormwater self monitoring results provided to Council. The data provided indicated that the formaldehyde limit had been exceeded in a discharge to the Waitaha Stream on 30 September 2013. Further investigation found that there was an error in record keeping and the contents of the storm pond were actually directed to trade waste for disposal. The details surrounding this incident will be reported on in the 2014-2015 Annual Report.

2.3 Discussion

2.3.1 Discussion of plant performance

Inspections of the AICA site found that housekeeping and general site management were good. There was no tracking was noted from the urea store during the year under review, however minor spill of solids and un-capped drums were found in the Plant 2 area on one occasion.

There were no instances of consent non-compliance found in relation to component concentrations in the stormwater discharges to the stream during the 2012-2013 year.

Difficulties have been experienced since the 2009-2010 year in obtaining inter-laboratory stormwater pond samples, and monitoring the effects of the discharge of the stormwater from the ponds on the Waitaha Stream.

No true sets of inter-laboratory samples were analysed by both Council and AICA during the year under review. Council continues to have concerns, as raised in previous Annual Reports, regarding the limited number of inter-laboratory comparisons available, as there continue to be a small number of occasions when stormwater discharges to the Waitaha Stream occur with component concentrations at the upper limit permitted by consent.

During the year under review the pond levels were generally found to be low at the time of inspections, and although the inspecting officer has asked periodically to be informed when the stormwater ponds were full or to be discharged to the stream in order to provide monitoring opportunities, this did not happen with adequate notice to allow him to attend the discharge. Therefore the programmed receiving water monitoring was not completed. A review of the data provide by AICA found that during the 2013-2014 year, the discharges occurred outside Council's normal office hours on 13 of the 31 days on which discharges occurred. Council continued to work with AICA in an attempt to resolve the issue of adequate notice of discharge, and it is anticipated that the new consent will require notification prior to discharge.

Air inspections showed compliance with consent conditions on all occasions during the 2013-2014 year. The monitoring of the formaldehyde concentration in the discharge from the absorber tower was delayed, and was undertaken early in the 2014-2015 year due to the plant being shut down on a number of occasions during the year under review. The issues that have been encountered in previous years, in regard to obtaining reliable results, have been resolved and the Company informed Council of the delayed testing. Results of the emissions monitoring confirmed compliance with the absorber tower formaldehyde limit.

The site contingency plan was last reviewed and updated during the 2012-2013 year.

2.3.2 Environmental effects of exercise of consents

Receiving water monitoring in conjunction with discharges from the AICA site could not be carried out as programmed during the year under review due to communication issues between AICA and Council. It is expected that this will be resolved by the inclusion of a condition on the new consent that will require notification by a specific means, prior to discharge.

Although no discharge specific receiving water monitoring was undertaken, there were no observations during the monitoring in this catchment that indicated there were any significant adverse effects.

In the 2010-2011 year it was identified that the controlled stormwater discharges were occurring at times when there was no rainfall. Due to the AICA stormwater discharges being at the headwaters of the catchment, there was the potential for adverse effects to be occurring in the stream even though ammoniacal nitrogen concentration of the stormwater complied with the numerical limit on the discharge.

At the time of the consent variation in 2002, when the ammoniacal nitrogen concentration was raised from 2 g/m^3 to 20 g/m^3, the information provided in support of the application stated that discharges would be occurring during periods of heavy rainfall. This was raised with the Company, and Dynea put procedures in place to minimise the potential for effects on the stream, which included using a lower in-house limit for the ammonia concentration of the stormwater for discharge at times when there is no rainfall.

During the year under review all discharges but one, containing unionised ammonia concentrations above 0.025 g/m^3, occurred on days when rainfall was recorded in the neighbouring Mangati catchment.

Ambient odour surveys found no chemical odours downwind of the plant site, and no complaints were reported during the year under review. Gastech monitoring found no detectable levels of phenol (and therefore resorcinol) or formaldehyde off site.

2.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 5 and Table 6.

Table 5 Summary of performance for Consent 2367-2 AICA's discharge of stormwater

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Self monitoring, Council sampling. However, no true inter-laboratory samples due to communication difficulties	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Inspection. Programmed discharge/receiving water sampling not undertaken due to communication difficulties.	Yes
3. Maintenance of a contingency plan for action to be taken to prevent spillage	Review of documentation provided	Yes
4. Records of chemical monitoring and discharge	Records sighted at inspection, copy provided upon request	Yes
5. No chemicals to be stored in carpark catchment area	Observation at Inspection	Yes
6. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		Good

Table 6 Summary of performance for Consent 4021-2 AICA's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Maximum rate of formaldehyde emission from entire site	Not assessed	N/A
2. Emission of formaldehyde from certain areas	Formaldehyde emissions monitoring delayed.	N/A
3. Monitoring of consent	Inspections, odour surveys and ambient monitoring	Yes
4. Requirements for emissions monitoring (stack testing) of absorber tower	Testing performed. Inspection at time of emissions monitoring, review of reports	Emissions monitoring delayed until 16 Jul 2014
5. Method to which emissions monitoring must be performed	Inspection at time of emissions monitoring, review of reports. Emissions monitoring delayed until early 2014-2015	N/A
6. Minimisation of emissions through control of processes	Discussion and liaison with consent holder	Yes
7. Concentrations of formaldehyde outside site boundary	Ambient Gastech monitoring	Yes
8. Concentrations of phenol outside site boundary	Ambient Gastech monitoring	Yes
9. Concentrations of resorcinol outside site boundary	Ambient Gastech monitoring, inferred from phenol results	Yes
10. Reserved right to review consent at any time	No significant adverse effects. No review required	N/A
11. Consultation before alterations to plant or processes	Discussion and liaison with consent holder.	Yes
12. Formulation of a written report	No further reports required by current (expired) consent	Yes
13. Adoption of best practicable option to minimise adverse effects on the environment	Inspections, reporting and liaison with consent holder	Yes
14. Optional review provision re environmental effects	No further review provisions, consent expired	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		Good

During the year, AICA (NZ) Limited demonstrated a high level of environmental and a good level of administrative performance with resource consents as defined in Section 1.1.5.

However, an improvement is desirable in the communication between the Company and Council regarding the inter-laboratory testing and notification of discharges to

allow the programmed monitoring to be undertaken. Changes will be made to the renewed consent to support this.

2.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of AICA (NZ) Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

This recommendation was implemented. However, there were no true stormwater inter-laboratory analyses or discharge/receiving water sampling surveys undertaken as a result of communication issues between AICA (NZ) Limited and Council.

2.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air and water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

2.4 Recommendation

THAT monitoring programmed for consented activities of AICA (NZ) Limited in the 2014-2015 year continues at the level programmed for 2013-2014.

3. C&O Concrete Products Limited

3.1 Introduction

3.1.1 Process description

As the name suggests, C&O Concrete Products Limited (C&O Concrete) manufacture concrete products. Their site is located on Connett Road East Bell Block. The site comprises some 1926 m² of industrial land dominated by a central building and includes outdoor construction and storage areas. The stormwater enters the New Plymouth District Council (NPDC) system and is discharged to the nearby Waitaha Stream.

The potential exists for the contamination of stormwater around the site. At the time the consent was issued the discharge was treated as that of contaminated stormwater, and appropriate special conditions were set on the permit.

The discharge from C&O Concrete is expected to potentially contain elevated suspended solids, high pH and alkalinity. The discharge is to the NPDC stormwater system where it mixes with stormwater from roads and other developed sites before discharging to the Waitaha Stream.

Photo 2 C&O Concrete Products site

3.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

C&O Concrete Products Limited holds water discharge permit **4777-1** to cover the discharge of up to 40 litres/second of stormwater from a concrete products manufacturing premises into the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 5 September 1995 under Section 87(e) of the RMA. A variation to the conditions relating to the pH of the discharge was made on 8 September 1997. It expired on 1 June 2014.

Special conditions 1 and 2 place a limit on the suspended solids content of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 3 contains review provisions.

A copy of the permit is attached to this report in Appendix I.

An application to renew the consent was received on 11 March 2014, and the application was put on hold awaiting further information and affected party approval from the New Plymouth District Council.

The further information requested was:

- A stormwater management plan
- Up to date contingency plan

The applicant had also bee advised that this information would be required during the application process in a letter dated 11 September 2013. The further information was not received during the year under review, and therefore the application could not be processed prior to the expiry of the consent.

The information was received and the new consent was granted in the first half of the 2014-2015 year.

3.2 Results

3.2.1 Inspections

16 September 2013

Inspection found that all screens were in place within the site drains, allowing for a good amount of sediment treatment/retention prior to any stormwater discharge from site. Staff on site were aware of the obligations of cleaning the drains and renewing the screens when required.

The sediment traps/sand traps within the drainage system near the top of the yard had some sediment in their base, however still had plenty of storage area available.

Water within the drains appeared to be clean and clear. The stormwater discharge point at the Waitaha Stream was inspected and there was no indication of contamination found there as a result of works at C & O Concrete Products.

There is an estimated 2-3 inches of sediment within the on site drains, and the inspecting officer was informed that these were cleaned out on a regular basis, with the waste either recycled or disposed of offsite.

The Company was asked to continue to monitor the drains to ensure the discharge is of a good quality. The Company was advised that this would be important prior to any periods of heavy rain to ensure that the sediment treatment system can cope with the increased volume.

26 November 2013
Inspection found that the usual activities were taking place on site. The site was in a reasonable order at the time of the inspection. The screens were in place within the site drains, and all site water was being directed for treatment through these systems prior to discharge from the site.

It was noted that the sediment traps near the rear of the site appeared to have been recently cleaned out and were providing a reasonable area for sediment to settle prior to being directed to the screens for discharge.

The Company was informed that the drain running alongside the entrance to the site was in need of a good clean out, as the drain was becoming overfull with solids. It was also requested that the Company asses the screens at this point, as they may need changing.

At the end of the inspection it was requested that the Company continues to monitor the drains, sediment ponds and screens to ensure that they are cleaned out on a regular basis.

13 February 2014
The site was found to be busy at time of inspection. The site was in a reasonably clean condition, with no signs of spills of cement or other material that may become entrained within stormwater, and hence have an adverse effect on the receiving environment of the Waitaha Stream.

It was noted that stormwater on site is captured via drains on the property, and is directed for treatment via a number of small settling ponds and filtering baskets before final discharge into the stormwater system.

At the time of inspection a very slight amount of stormwater was discharging from site. Staff were spoken to on site, and it was reported that the settling ponds were due for a clean out. Although the system appeared to be working well, the Company was asked to ensure that the system is continued to be cleaned out on a regular basis, and that the Company also ensures that the site is clean of any spills or contaminants especially prior to any predicted heavy rainfall events.

5 June 2014
A site inspection was carried out as part of routine compliance monitoring. Inspection found that the drain screens appeared to be working well. It was observed that some fine sediment had managed to pass through the screens next to the entrance, and had settled in the base of the drain prior to entry into the stormwater system. A small clear flow of stormwater was entering the stormwater system at this point. It was suggested that the Company clear the portion of the drain downstream of the screens to prevent the possibility of contaminants entering the stormwater system.

It was noted that fine sediment was found to have settled in the base of all drains. The majority of the sediment was found to be in the drains about the cement mixer. It was

reported that the drains however, are cleaned out on a regular basis, with the drains and sediment traps about the mixer cleaned out approximately every three days.

The general site area was found to be clean and tidy.

3.2.2 Results of discharge monitoring

The requirements for the discharge are that the suspended solids concentration must not exceed 200 g/m^3 and the oil and grease concentration must not exceed 15 g/m^3.

The discharge from the C&O Concrete site on Connett Road was sampled on two occasions during the 2013-2014 period. The results of this monitoring are shown in Table 7, along with a summary of the historical results for this site.

Results show that, at the time of sampling, the component concentrations in the discharge complied with the limits imposed on the consent.

Table 7 Results of C&O Concrete Products Ltd discharge monitoring (STW001060)

Date	Conductivity (mS/m @ 20^{o}C)	Oil & Grease (g/m^3)	pH	Suspended solids (g/m^3)	Temperature (^{o}C)
Consent Limits	-	*15*	-	*200*	-
Number	17	10	17	15	15
Min	2.6	<0.5	7.2	4	10.7
Max	118	4.0	11.6	160	20.5
Median	16.3	1.1	10.1	52	14.5
21 Jan 2014	9.3	Not visible/ apparent	8.5	27	16.5
25 Jun 2014	8.0	Not visible/ apparent	7.7	9	13.5

On reviewing the historical results it is noted that the median suspended solids concentration has been decreasing (Figure 4) since the Company installed, and has been regularly maintaining, the filter baskets in the yard drainage channels.

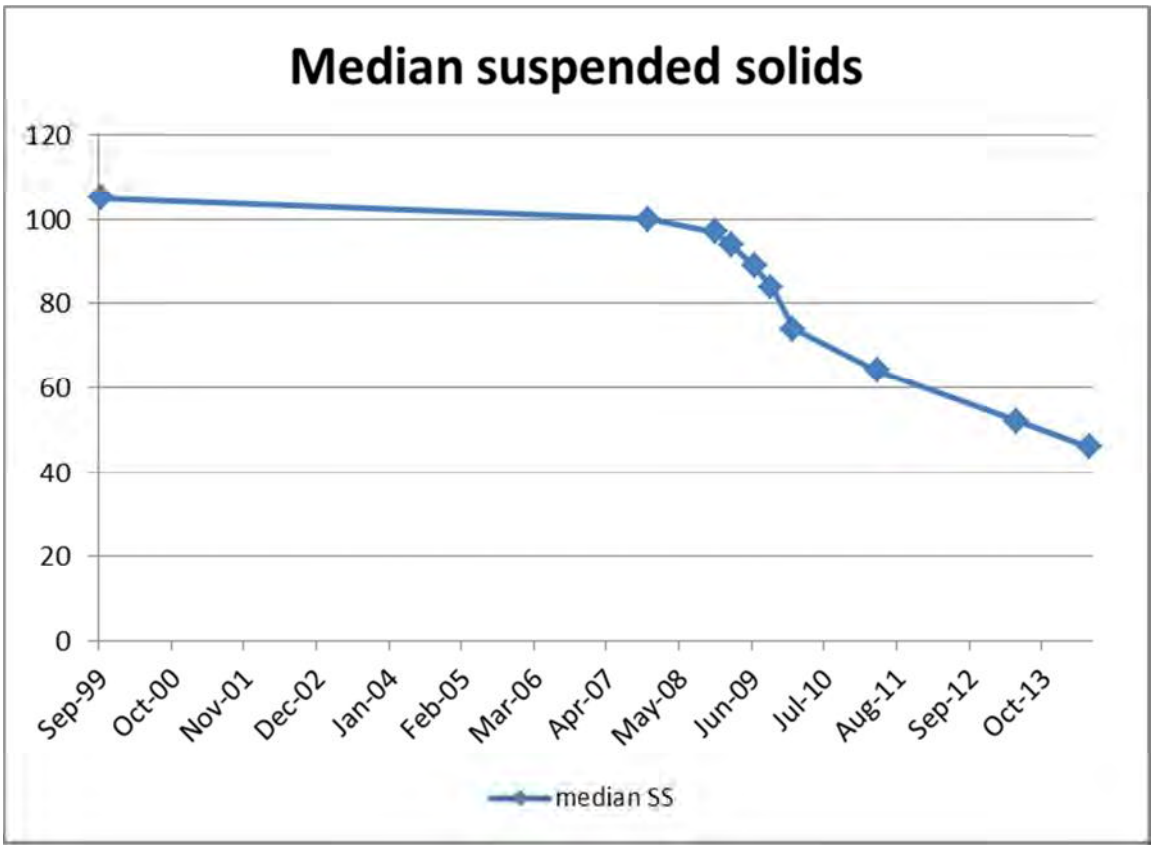

Figure 4 Trend in cumulative median suspended solids for the C&O Concrete discharge to the Waitaha Stream

3.2.3 Results of receiving water monitoring

C&O Concrete Products consent limits effects in the receiving water, stating that the pH shall lie in the range 6.0 – 8.5 after a 10 metre mixing zone. The sites used to monitor this condition are WTH000050, which is upstream at the old farm access bridge, and WTH000095 approximately 30 metres downstream of where the reticulated stormwater containing this stormwater discharges into the Waitaha Stream, just below the Connett Road bridge. The results of this monitoring are given in Table 8.

Table 8 Waitaha Stream sampling in relation to C&O Concrete's stormwater discharges

Parameter	unit	WTH000050 Old farm access bridge approx 240 m U/S	WTH000095 approx 30 m D/S
21 Jan 2014	Sample time	1030	1052
Conductivity	mS/m @ 20°C	10.6	9.3
Oil & grease	g/m³	Not visible/apparent	9.8
pH	pH	6.7	6.7
Temp	°C	17.2	18.4
Turbidity	NTU	65	65

Parameter	unit	WTH000050 Old farm access bridge approx 240 m U/S	WTH000095 approx 30 m D/S
25 Jun 2014	Sample time	1305	1330
Conductivity	mS/m @ 20°C	13.3	10.2
Oil & grease	g/m^3	Not visible/ apparent	Not visible/apparent
pH	pH	6.7	7.0
Temp	^{o}C	14.5	14.4
Turbidity	NTU	400	350

The monitoring shows that the limits on the receiving water pH were complied with, and that this discharge had little, if any, effect on any of the other parameters determined.

Although there was a sheen noted in the downstream Connett Road sample collected on 21 January 2014, and an oil and grease concentration of 9.8 g/m^3 was found, this was not attributable to the C&O Concrete discharge. A high oil and grease concentration was also found in the reticulated stormwater entering the stream from the opposite bank of the Waitaha Stream, and the C&O Concrete discharge contained no visible oil and grease at the time of sampling.

3.2.4 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by C&O Concrete Products Ltd.

3.3 Discussion

3.3.1 Discussion of plant performance

Inspection found that general housekeeping was good throughout the year.

The improved management of the sediment control devices continues to result in a good quality stormwater discharge. This is evidenced by the sampling results for the year under review, and when comparing to historical results, the continued decrease in the median suspended solids concentration.

3.3.2 Environmental effects of exercise of consents

Inspections and discharge monitoring showed no adverse effects upon the receiving waters as a result of the activities of C&O Concrete.

3.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 9.

Table 9 Summary of performance for Consent 4777-1 C&O Concrete Products' discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge and pH range of stream	Observation at inspection	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Observation at inspection	Yes
3. Optional review provision re environmental effects	No further option to review prior to expiry in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		Improvement required

During the year, C&O Concrete Products Limited demonstrated a high level of environmental performance, however improvement was required with respect to administrative performance, as defined in Section 1.1.5.

The Company's consent expired on 1 June 2014, and due to the time taken for the provision of further information requested, the new consent was not issued until part way through the 2014-15 year.

3.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

This recommendation was implemented.

3.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

3.4 Recommendation

THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2014-2015 year continues at the level programmed for 2013-2014.

4. Courtenay Trading Company Limited

4.1 Introduction

4.1.1 Process description

Courtenay Trading Company Limited operated a drum recycling site on Corbett Road. The stormwater enters the NPDC reticulated stormwater system via two open grates in the yard area, and is discharged to the nearby Waitaha Stream. The discharge mixes with stormwater from roads and other developed sites before discharging to the Waitaha Stream.

The Company had an existing business recycling steel and plastic containers based in Wellington. The existing drum cleaning plant was relocated to the site in Bell Block to be closer to their main client, which was Dow Agro Sciences (Dow). This company was the main source of drums and Intermediate Bulk Containers (IBCs) for recycling. The facility was likely to clean drums from a variety of sources, including food production industries.

The majority of activities occur inside a warehouse, in an enclosed area. All discharges from the processing and cleaning of the drums were directed to either the municipal trade waste system, or were contained to be removed from the site by approved waste management service.

The general process of cleaning drums can be divided into the following key stages:

- drums received on-site;
- drums stored in the yard – removed from pallets, and stacked on their sides with bungs at the top;
- drums taken to the cleaning area inside the warehouse, turned upside down and drained of any liquid if they have not already been flushed – liquid is collected and disposed of off-site at an approved facility;
- drums go to either the hot bath or kerosene bath, depending on what the drum contained – oil products and some drums from Dow will go through both; and
- drums are dried, any dents removed, and then painted if required.

The drums and IBCs received from Dow will have contained solvents, herbicides, insecticides, miticides, surfactants, amines and fungicides. At the time of the application, Council was informed that the majority of drums/IBCs from Dow would arrive on site after being flushed once with clean water or solvent (whichever is appropriate for the drum contents). Therefore no residue would be left on the outside of the containers, and the container closures would be hand tight.

While the drums/IBCs were largely clean, and those stored outside should have been flushed, there is still potential for small amounts of contaminants to drip from the drum if the closures are not screwed in tightly.

Therefore, any drums/IBCs containing residue from ecotoxic and/or bioaccumulative substances will immediately be placed indoors for storage, or if there is no room inside, these drums/IBCS will be cleaned to ensure they contain no contaminants prior to storing them outside.

Council was advised that to minimise the potential for contaminants to become entrained in the stormwater all drums/IBCs stored in the outdoor yard were to be handled and stacked as follows:

- all drum bungs will be in place and finger tight;
- all drums will be stacked with bungs at the top so any residual fluid in the drum can't escape;
- all drums/IBCs that have previously contained bioaccumulative or ecotoxic material will be identified by the provider and will either be stored indoors or cleaned before being stored in the yard; and
- the Company will work with the providers to ensure drums/IBCs are received in good condition.

Figure 5 Courtenay Trading Company site

4.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Courtenay Trading Company Limited holds water discharge permit **9793-1** to cover the discharge of stormwater from a drum recycling site into the Waitaha Stream via the NPDC stormwater network. This permit was issued by the Taranaki Regional Council on 4 February 2014 under Section 87(e) of the RMA. It is due to expired on 1 June 2032.

Special condition 1 requires the Company to adopt the best practicable option to prevent or minimise adverse effects.

Special condition 2 limits the stormwater catchment area covered by the consent.

Special conditions 3 and 4 place a limit on constituents within the discharge, and limit the effects of the discharge on receiving water quality beyond a 5 metre mixing zone.

Special conditions 6 and 7 require that the Company maintain a contingency plan covering management and mitigation measures in the event of a spill, and a stormwater management plan outlining how routine operations are managed to prevent or minimise the amount of contaminants that may become entrained in the stormwater during day to day activities.

Special condition 8 requires the Company to keeps records for the drums handled through the site, including the supplier, original contents, and the treatment the drums received.

Special condition 9 requires that the Company notifies Council of any changes to activities at the site that may affect stormwater quality.

Special conditions 10 and 11 contain standard provisions for the lapsing of the consent and review of the consent conditions.

A copy of the permit is attached to this report in Appendix I.

4.2 Results

4.2.1 Inspections

31 March 2014

Council was advised in a telephone conversation that Dow Agrosciences were not rinsing drums prior to them being brought onto the Courtenay Trading Company site, as they had been led to believe would be the process. As a result Courtenay Trading Company would be ceasing their operations at the Corbett Road site. They stated that they were planning to process the drums that they had stock piled, and were expecting to be finished up by the end of May. This was confirmed by email.

14 May 2014

Council was advised in telephone conversation that operations at the site would be wound up by 23 May 2014. The consent holder was informed that an inspection and sampling was to be undertaken by the inspecting officer prior to this date.

21 May 2014

A site inspection was carried out as part of the routine compliance monitoring programme. Inspection found that although the facility was in operation it was due to finish trading, with all drum cleaning and associated activities ending on Friday 23 May 2014. The inspecting officer was informed that all drums and associated equipment would be cleared from the building and grounds in the days following this.

Inspection found that there were a number of steel drums and IBC's stored outside. All the drums and IBC's were found to be stored with their lids on.

It was reported that drums had been received from Dow Agrosciences without being pre-rinsed. This meant that the residue (approx. 500ml per drum) was being drained from the drums prior to the cleaning process. The draining was being undertaken indoors, with the residue then stored in closed top drums on site for future disposal via an appropriate facility.

Bunding was in place within the shed to ensure that any spills during the cleaning process would be adequately contained, and prevented from entering the NPDC stormwater system.

The inspection was conducted following a short period of light rain, and a sample was subsequently taken from the stormwater grate on the property, which drains from about the drum store area.

The inspecting officer noted that Special Conditions 6 & 7, requiring a management plan and contingency plan to be maintained and adhered to, were not currently being complied with.

The Company was asked to continue to update Council with the closure process, outlining the method of disposal of the collected residue, and the disposal of the unwashed drums on site.

26 June 2014

An inspection was carried out to ascertain compliance with Abatement Notices 20299 & 20300, issued on 16 June 2014, requiring that the Company cease all operations regarding the acceptance, storage, washing and recycling of drums until all resource consent conditions and section 15(1)(b) of the RMA can be complied with at all times, and that the Company undertake works to ensure that no contaminants enter water.

At the time of inspection all drums and IBC's had been removed from the property, with the exception of six IBC's that had subsequently been purchased by Contract Resources. The remaining six IBC's were stored in an appropriate manner with lids on and taps closed.

It was reported that Contract Resources had now taken over the use of the property, however they were not yet fully operational from this location.

It was found that the yard area appeared to be free of any obvious visible contamination sources. Samples were taken from the storm water grate at the rear yard of the property and the consent holder was advised that these would be analysed in due course.

Pending the sample results, abatement notices 20299 and 20300 were being complied with at the time of the inspection.

4.2.2 Results of discharge monitoring

The requirements for the discharge are that the suspended solids concentration must not exceed 100 g/m^3, the pH must lie in the range 6-9, and the oil and grease concentration must not exceed 15 g/m^3. Due to the nature of the chemicals that the drums to be recycled contained, a multi residue pesticide screen and acid herbicide determination were also programmed as part of the discharge monitoring for this site.

The discharge from the Courtenay Trading Company site on Corbett Road was sampled on two occasions during the 2013-2014 period. The results of this monitoring are shown in Table 7.

Results show that, at the time of sampling, the component concentrations in the discharge complied with the limits imposed on the consent. However, there were acid herbicides and pesticide residues found in the sample collected on 21 May 2014. This finding was logged as an unauthorised discharge, and abatement notices and an infringement notice were subsequently issued. This is discussed further on section 4.2.3. Sampling undertaken on 26 June 2014 found that the concentrations of the pesticides and acid herbicides had reduced to a level that would be acceptable for the consent to be surrendered, once all the drums and IBC's had been removed from the site.

Table 10 Results of Courtenay Trading Company Ltd discharge monitoring

Parameter	unit	*Consent limit*	21 May 2014	26 Jun 2014
2,4-D	g/m^3	-	0.0010	ND
Alachlor	g/m^3	-	0.0024	0.0011
Chloride	g/m^3	-	-	11.0
Conductivity @ 20°C	mS/m@20°C	-	-	6.3
MCPA	g/m^3	-	4.9	0.370
Oil and Grease	g/m^3	*15*	-	4.1
pH	pH	*6 – 9*	-	7.2
Pichloram	µg/l	-	2.1	ND
Propiconazole	g/m^3	-	0.0017	ND
Suspended solids	g/m^3	*100*	-	7
Triclopyr	µg/l	-	930	52
Temperature	Deg.C	-	18.0	13.9
Turbidity	NTU	-	-	11

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
ND none detected

4.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by Courtenay Trading Company Products Ltd.

18 December 2014

A complaint was received regarding a company discharging washings to the storm water system in the Waitaha catchment. Company staff outlined that the discharge was water generated when rinsing clean equipment which had been brought to site from their previous premises. No evidence of contamination was found. The relevant rules of the Regional Fresh Water Plan were outlined, and it was noted that a resource consent has been applied for to undertake activities at the site.

25 February 2014

The site was inspected in light variable westerly wind conditions. The inspection was undertaken in response to a complaint received regarding objectionable chemical odours discharging from a building vent, and impacting on neighbouring properties. The inspection was undertaken with the site manager. It was outlined that the visible emissions were from steam cleaning activities whereby the unwashed drums containing chemical residues were being washed using steam, in a semi enclosed booth. The emissions and vapour were extracted through a vent on the side of the building approximately 7 feet above floor level. It was noted that no filters were in

place for the emissions. The washings were currently being discharged into an adjacent IBC, which is disposed of through a waste disposal company at present, as the Courtenay Trading Company could not meet the requirements of its trade-waste consent. During the inspection no washing was occurring and no emissions were occurring through the vent. It was found that the painting booth was adjacent to the steam washing booth. The paint booth had a filter installed to capture wet paint, and another filter was to be added to capture the dry paint particles that are removed from the drums. In response to an earlier complaint from neighbouring properties the Company has trialled initially washing the drums using a kerosene wash booth, but this still created odours, which discharged beyond the site boundary affecting neighbouring properties. It was suggested to the site manager that, as an initial measure, the Company should install a water bath/scrubber for the steam emissions to discharge through, to remove odorous chemical particles. It was agreed that this idea would be trialled, and if it was found to be ineffective, another solution would be sought. In the interim, the Company agreed to only clean drums that were known to contain residues that did not give rise to objectionable odours. The drain seal mats to prevent spills reaching the storm water network (discussed 18 December 2013) have reportedly been ordered, but were yet to arrive on-site. All chemical drums stored outside were found to have lids in place and were stored on their sides. The IBC's had lids and taps in place, and appeared in good condition.

At the end of the inspection the Company was instructed to ensure that no objectionable odours discharge beyond the site boundary.

21 May 2014
Analysis of samples taken from a drum recycling site at Corbett Road Bell Block, found that MCPA was present in the discharge. Two abatement notices were subsequently issued.

Abatement notice 20299 required that, from the date of receipt of the abatement notice, the Company cease all operations regarding the acceptance, storage, washing and recycling of drums until all resource consent conditions and section 15(1)(b) of the Resource Management Act can be complied with at all times.

Abatement notice 20300 required that, by 20 June 2014, the Company undertake works to ensure that no contaminants enter water.

Infringement notice 20383 was subsequently issued to the Company as a result of the unauthorised discharge of MCPA and Triclopyr, onto land in circumstances which may have resulted in that contaminant entering water, when the discharge was not expressly allowed by a national environmental standard or other regulations, a rule in a regional plan, or a resource consent.

4.3 Discussion

4.3.1 Discussion of plant performance

Inspection found that there were a number of issues with consent compliance during the year under review. The Company brought drums on site prior to the consent being granted, which it was later ascertained were not being pre-rinsed, as the supplier had led the Company to believe they would be at the time of the consent application. This

resulted in the Company having to work out how to manage the chemical residues that they were not prepared for, or equipped to deal with.

Sampling at inspection whilst the site was operating found that there were some acid herbicide and pesticide residues becoming entrained in the stormwater discharge. Two abatement notices and an infringement fine were issued. Repeat sampling after the drums had been removed from the site, found that the concentrations had decreased to an acceptable level.

In terms of the contingency plan and stormwater management plan required by the consent, Council identified that the stormwater management plan on file, which was submitted to support the consent application, did not adequately cover the procedures related to the loading and unloading of materials, drum/IBC receipt, and inspection and the maintenance of conveyance systems and/or pipework. The plan also identified the fact that a contingency plan needed to be prepared. A letter was sent to the consent holder reminding them of the requirement to provide a contingency plan, and advising them of changes that would be required for the management plan to be considered acceptable to Council.

On receipt of this letter the Company advised Council that the final requirements for satisfying the consent conditions had not been completed as the Company was going to be shut down. A local Consultant had been contracted to help with writing up procedures and Contingency Plan, but this was put on hold as the consent holder negotiated trading conditions with their major stock supplier.

Council was advised that the Company had been processing drums for two months and still had customers to supply to. The remaining stock of drums would be processed or sent for recycling at an approved Scrap Metal dealer depending on the condition of the drum, with the IBC tanks being sold unprocessed.

The Company expected this to take until approximately May 31st 2014 to complete.

4.3.2 Environmental effects of exercise of consents

Routine compliance monitoring of the Waitaha Stream did not detect any adverse effects in the receiving waters as a result of the activities of Courtenay Trading Company Limited.

4.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 9.

Table 11 Summary of performance for Consent 9793-1 Courtenay Trading Company Products' discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspections, reporting and liaison with consent holder	No
2. Limit on catchment area – 2099m^2	Inspection	Yes
3. Containers that may contain ecotoxic/bioaccumulative residues to be stored inside or in bunded areas	Inspection	No. Drums not being rinsed prior to being brought onto the site
4. Limits on chemical composition of discharge	Sampling	Yes
5. Discharge cannot cause specified adverse effects beyond mixing zone	Sampling	Yes
6. Preparation of contingency plan by 31 March 2014. To be maintained thereafter	Review of Council records.	Not progressed due to business being closed
7. Preparation of Management plan prior to exercise of consent. To be maintained and adhered to thereafter.	Review of Council records. Plan provided at time of application. Update requested	No, due to business being closed
8. Records to be kept of drums received. Records to include supplier, nature of previous contents and treatment on site	Not assessed	N/A
9. Provision for lapse of consent	Consent exercised	N/A
10. Optional review provision re environmental effects	Next review opportunity	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Poor Improvement required

During the year, Courtenay Trading Company Limited demonstrated a poor level of environmental performance, and improvement was required relating to administrative performance in respect of the resource consent, as defined in Section 1.1.5.

Two abatement notices and one infringement fine were issued in relation to an unauthorised discharge of MCPA and triclopyr, onto land in circumstances which may have resulted in the contaminants entering water.

On the day that the contingency plan was due, the Company informed the Council that activities at the site were to cease in approximately two months. Therefore the

provision of the contingency plan and updated management plan were not pursued by the Council.

4.3.4 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

The Company had ceased exercising the consent just prior to the end of the monitoring period under review and has now surrendered the consent.

It is proposed that for 2014-2015, this Courtenay Trading Company Limited be removed from the programme, as the activity is no longer being undertaken at the property, and the Company has surrendered the consent.

4.4 Recommendation

THAT Courtenay Trading Company Limited be removed from the Waitaha catchment monitoring programme in the 2014-2015 year, as the consent is no longer being exercised and the Company has surrendered the consent.

5. Greymouth Facilites Limited

5.1 Introduction

5.1.1 Process description

Parker Drilling International of New Zealand Limited (Parker Drilling) established a storage and maintenance yard on Corbett Road, Bell Block in 1996. Stormwater generated at the 0.47 ha site is discharged into the NPDC stormwater system, which flows north along Corbett Road then east along Connett Road before discharging to the Waitaha Stream. Small quantities of wash down water were also generated in the cleaning bay, as provided for in the purpose of the consent. This water was treated in an oil separator, and then was also discharged via the stormwater system into the unnamed tributary of the Waitaha Stream, which is now piped (along with the stormwater). The flow from the pipe enters the Waitaha Stream immediately downstream of the Connett Road bridge on the true left bank. It is noted that this wash bay had not been utilised for a number of years.

The site was taken over by Greymouth Facilities Limited, with the consent transferred on 17 January 2014.

During the remainder of the year under review, activities at the site mainly consisted of evaluating and tidying up the equipment stored at the site, and starting to clear the areas necessary to allow access, in preparation for the installation of a new drainage and treatment system at the site.

5.1.2 Water discharge permits

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

During the year under review Parker Drilling International of New Zealand and then Greymouth Facilities Limited held water discharge permit **4988-1** to cover the discharge of up to 110 litres/second of stormwater and 0.2 cubic metres/day of treated wash down water from a storage yard for hydrocarbon exploration drilling equipment into an unnamed tributary of the Waitaha Stream. This permit was issued by the Taranaki Regional Council to Parker Drilling International of New Zealand Limited on 24 July 1996 under Section 87(e) of the RMA, and was transferred to Greymouth Facilities Limited on 17 January 2014. It was due to expire on 1 June 2014.

Special conditions 1 and 2 placed a limit on the quality of the discharge, and limited the effects of the discharge on receiving water quality, in the Waitaha Stream, beyond a 10m mix zone.

Special condition 3 contained review provisions.

The permit is attached to this report in Appendix I.

As Greymouth Facilities were not going to be undertaking washing at the site, the Company chose to apply for a new consent, which was subsequently varied.

During the later part of the year under review Greymouth Facilities Limited held water discharge permit **9868-1** to cover the discharge of treated stormwater from a yard used for storage and maintenance of hydrocarbon exploration drilling equipment into the Waitaha Stream via the NPDC reticulated stormwater system, and onto and into land from the skimmer pit. This permit was issued by the Taranaki Regional Council on 8 May 2014 under Section 87(e) of the RMA. It is due to expire on 1 June 2032.

Special conditions 1 and 2 clarify the circumstances under which discharges to land from the skimmer pit spillway can occur, and require that these events are recorded.

Special condition 3 requires the Company to adopt the best practicable option to prevent or minimise adverse effects on the environment.

Special conditions 4 and 5 limit the stormwater catchment area and require that all stormwater be treated as per the conditions of the consent.

Special conditions 6 and 7 place limits on specific constituents within the discharge, and require that a sampling point be installed and maintained for monitoring of the discharge.

Special condition 8 limits the effects the discharge may have on receiving water quality beyond a 10 metre mixing zone.

Special conditions 9 and 10 require that the Company maintains a contingency plan covering management and mitigation measures in the event of a spill, and provides and maintains a stormwater management plan outlining how routine operations are managed to prevent or minimise the amount of contaminants that may become entrained in the stormwater during day to day activities.

Special condition 11 prohibits discharges of contaminants beyond the site boundary from the skimmer pit spillway.

Special condition 12 limits component concentrations in the soil on site.

Special condition 13 requires written notification of changes to activities at the site that might result in changes in potential adverse effects from the discharge.

Special conditions 14 and 15 contain standard provisions for the lapsing of the consent and review of the consent conditions.

The permit is also attached to this report in Appendix I.

5.2 Results

5.2.1 Inspections

16 September 2013

Inspection found that the Parker Drilling rig was currently stored in the yard. It was reported that the rig had not been in use for approximately 3 ½ years. It was observed that some limited work had taken place on the site in recent weeks in relation to preparing equipment for exporting. It was noted that this work appeared to be

minimal in nature, and had not resulted in any adverse environmental effects. There were no chemical drums or containers located on site.

There was no discharge occurring from the site, and no issues identified at the time of the inspection.

26 November 2013
Inspection found that the Parker Drilling rig was currently stored in the yard. It was reported that the rig had been decommissioned and it was not anticipated that it would be used in the future.

It was observed that some equipment had been removed from the site for export. It was reported that this equipment had been water blasted prior to shipping, however no chemicals or detergents were used during this process.

No chemicals were located about the site, and no areas of concern were noted during the inspection.

21 February 2014
A site inspection was carried out as part of the routine compliance monitoring programme. It was reported that the yard and associated equipment had recently been purchased by Greymouth Facilities Limited.

Staff were currently on site sorting equipment and carrying out an inventory of the equipment on site. All equipment that required maintenance was being removed from the site to be cleaned, painted etc.

There were no activities occurring on site at time of inspection that would result in contaminants entering the storm water system.

22 May 2014
A site inspection was undertaken as part of the routine compliance monitoring in this catchment. Inspection found that minor works were being undertaken on site in association with re-mobilising a rig on site. A general clean up of the out door storage yard area was also being undertaken.

It was noted that a new consent had been issued by Council for this yard (consent no: 9868-1.0). The consent was issued on 8 May 2014. The Company was asked to advise Council when works to allow compliance with Special Condition 5 were to be undertaken.

5.2.2 Results of discharge monitoring

Stormwater from this storage facility exits the site at the north east corner of the property, flows along Corbett Road and then down Connett Road where it discharges into the Waitaha Stream. The discharge is sampled from within the New Plymouth reticulated network on Corbett Road before it mixes with stormwater from roadside drains or other properties.

The requirements for the discharge are that the suspended solids concentration must not exceed 100 g/m^3, oil and grease concentration must not exceed 15 g/m^3, and pH must lie in the range 6-9.

The discharge from this Corbett Road site was sampled on two occasions during the 2013-2014 period, with the results provided in Table 12.

Table 12 Sampling results – Parker International of New Zealand Limited (TRC site code STW001110, consent 4988).

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)
Consent limits	-	*15*	*6 - 9*	*100*	-
21 Jan 2014	5.6	<0.5	6.8	5	18.2
25 Jun 2014	5.2	0.6	6.9	46	13.7

The discharge complied with consent conditions at the time of both monitoring surveys.

5.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of this site when it was operated by either Parker Drilling International of New Zealand Limited or Greymouth Facilities Limited.

5.3 Discussion

5.3.1 Discussion of plant performance

General housekeeping of the site was found to have been good during the year under review, and the site was well managed.

The new consent (9868-1) contained requirements regarding the treatment of stormwater from the site, and during the consent application process the Company intended to install a twin skimmer pit system. This was not installed during the year under review as Greymouth Facilities Limited subsequently decided that the best practicable option was to install an in-ground interceptor. The Company consulted with the Council regarding this proposed change, which would provide an equivalent level of treatment, but would require a variation to consent.

The level of activity at the site was low, and consisted mainly of tidying up the site, and clearing access to the areas required for the installation of the proposed new drainage and treatment systems, including ring drains.

The discharge constituent concentrations on the consent were complied with at the time of sampling.

5.3.2 Environmental effects of exercise of consents

Inspections and catchment monitoring showed no adverse effects upon the receiving waters as a result of the activities of Parker Drilling International Limited or Greymouth Facilities Limited.

5.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 13 and Table 14.

Table 13 Summary of performance for Consent 4988-1, Greymouth Facilities discharge of stormwater into the Waitaha Stream to 7 May 2014

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Discharge sampling	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and chemical sampling of the stream	Yes
3. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		N/A

N/A: Not applicable or not assessed

Table 14 Summary of performance for Consent 9868-1, Greymouth Facilities discharge of stormwater into the Waitaha Stream from 8 May 2014

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Clarification of circumstances under which discharges from the skimmer pit spillway can occur	Inspection. Skimmer pits not installed yet due to re-evaluation of best practicable option for treatment system	N/A
2. Records to be kept of discharges from skimmer pit spillway	Inspection. Skimmer pits not installed yet due to re-evaluation of best practicable option for treatment system	N/A
3. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and liaison with consent holder. Best practicable option re-evaluated during the year under review, with revised treatment system proposed	New system to be installed by 31 October 2014
4. Catchment area limited to 1.065 ha	Inspection	Yes
5. Treatment of all stormwater	Inspection and liaison with consent holder	New treatment system agreed and to be installed by 31 October 2014
6. Limits on component concentrations in the discharge	Sampling	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. Installation and maintenance of discharge sampling point	Inspection and liaison with consent holder	Agreed that it would be installed along with new treatment system
8. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and chemical sampling of the stream	Yes
9. Maintenance of contingency plan	Review of Council records and documents submitted	Yes
10. Provision and maintenance of stormwater management plan due 8 August 2014	Review of Council records and documents submitted.	N/A
11. No contaminants beyond the boundary from skimmer pit spillway discharges	Inspection. Skimmer pit s and spillway not installed	N/A
12. Soil component concentrations	Visual assessment at inspection	Yes
13. Notification of changes	Review of Council records and liaison with consent holder. Notification of proposed changes to treatment system	Yes
14. Provision for lapse of consent	Consent has been exercised	N/A
15. Optional review provision re environmental effects and/or notification of changes	Next opportunity for review June 2017	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A: Not applicable or not assessed

During the year, Greymouth Facilities Limited demonstrated a high level of environmental and high level of administrative performance with the resource consent conditions as defined in Section 1.1.5.

5.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Parker Drilling International of New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

This recommendation was implemented, and monitoring continued at the same level after the consent was transferred to Greymouth Facilities Limited.

5.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

5.4 Recommendation

THAT monitoring programmed for consented activities of Greymouth Facilities Limited in the 2014-2015 year continues at the same level as programmed in 2013-2014.

6. Intergroup Limited

6.1 Introduction

6.1.1 Process description

Intergroup Limited operates a waste disposal company from their site on Hudson Road, Bell Block. The site comprises some 3903 m² of industrial land including buildings and mainly sealed areas. The site is used as a transit depot and temporary storage facility for waste materials collected from throughout the Taranaki region prior to transportation on to an appropriate disposal site.

The majority of the waste collected is waste oil, which is stored in tanks located in a bunded area.

Photo 3 Intergroup Limited waste oil storage

There are two open concrete pits in the yard. One contains a series of separators and is used for the separation of sludge and water from the waste oil. The waste water from this process is directed to trade waste and the oily sludge is taken to an off-site location for weathering/bioremediation prior to final disposal. The other open pit is a drive-in facility for the transfer of domestic septic tank effluent from the trucks to the trade waste system.

Photo 4 Intergroup Limited oil treatment facility

The waste oil is transported up to a sister Company in Auckland, who undertake the disposal.

The Company gives consideration to the risks associated with the other materials for disposal at off-site licensed facilities, and stores them appropriately on-site prior to transportation.

The stormwater enters the NPDC system and is then discharged to the Waitaha Stream. Potential therefore exists for minor amounts of sewage effluent, petroleum products or other contaminants to enter the stormwater system via drains on site.

6.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Intergroup Limited holds water discharge permit **4776-1** to cover the discharge of up to 65 litres/second of stormwater from a truck depot premises into the Waitaha Stream. This permit was originally issued to Burroughs A & G Limited by the Taranaki Regional Council on 5 September 1995 under Section 87(e) of the RMA. The permit was transferred to Onyx Group Limited on 16 January 2003, to Transpacific Industrial Solutions on 10 January 2007, and then to Intergroup Limited on 30 January 2014. It was reviewed in August 2008 to ensure that the special conditions were adequate to deal with potential adverse effects of the discharge on the receiving environment.

Consent 4776-1 expired on 1 June 2014, however the application to renew the consent was received on 25 October 2013, more than 6 months before expiry, therefore as per

Section 124 of the RMA, the activity may continue under the conditions of the expired consent until a decision is made on the renewal.

Special conditions 1 and 2 place limits on the quality of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 3 contains review provisions.

Special condition 4 requires the provision of a stormwater management plan to ensure that the consent holder is operating activities at the site in a manner that is consistent with the best practicable option to minimise contamination of the stormwater discharged from the site.

A copy of the permit is attached to this report in Appendix I.

6.2 Results

6.2.1 Inspections

18 September 2013

The site was inspection in slight easterly wind conditions. A slight intermittent odour was noted on site directly above the separating pond, however this quickly dissipated, and was not noticeable at the site boundary. The area about the separating pond was reasonably clean and tidy, with no indication of any spills about the immediate area.

The sealed surface within the yard area that drains to the reticulated stormwater system was inspected for spills or likely contaminants. The sealed surface appeared to be in a generally clean and tidy order. Some cut down/open top plastic storage containers were observed to be stored against the rear boundary of the site. The exact contents of the containers were unknown, however one did appear to have a waxy crude contained within it. These containers were full, with little free board remaining. It was identified to staff on site, and the Company was informed that attention would need to be given to these, as any rainfall has the potential to cause these containers to overflow.

All empty plastic drums stored on site appeared to have lids in place, and were stored in an appropriate manner.

Spill kits and stormwater shut of valve locations were present and clearly identifiable.

26 November 2013

Site inspection found that the site was in full operation. Drums were stored about the premise. It was reported that all empty drums delivered to site have been cleaned, had their lids replaced and were stored about the boundary of the site. Any drums waiting to be cleaned were stored on a concrete pad next to the separator so that any spills would be directed towards the separating pond rather than the stormwater system.

The sealed yard area above the separating pond was clean and clear of any spills thus minimising the risk of contaminants being tracked through the site and out into the stormwater collection areas.

Spill kits were present on site and were sealed with a plastic tag to ensure that the contents are not interfered with.

No immediate issues were identified at the time of the inspection, however the Company was asked to ensure that they minimise the storage of chemicals within the sealed areas that direct run-off to the stormwater system.

It was noted that there was an interceptor in place in the stormwater system (oil and grit type), and that this was emptied on a monthly basis.

13 February 2014
The site inspection was carried out as part of routine compliance monitoring, following short period of rain. Stormwater was being collected on the sealed surface, and was being directed to the stormwater system. Visual inspection of the stormwater system found it to be clear with no scums, films or foaming visible.

The yard was busy at time of inspection, with a quantity of drums and containers stored about the site. The majority of material was stored within containment areas that direct spills or stormwater to the council sewer system.

Some containers appeared to have blown down during recent wind, however the majority had their lids in place.

Some containers were found stored on site with the lids missing and on site staff advised replacement lids were being organised. It was noted that blown over containers would also need to be stood up. Some containers were to be pushed further into the bunded area to ensure that any spills etc would not enter the stormwater system.

The Company was advised to hose down the area where trucks park to dump their waste into the holding/treatment pond area. A hose down of this general area would help to reduce the likelihood of any contaminants (oil/grease) being tracked onto the sealed area, where the site water is directed to the reticulated stormwater system.

There was no wind at the time of inspection, and although an odour could be detected when standing directly above the holding pond, no odour was detected about the boundary of the site.

5 June 2014
It was noted that the site inspection was carried out as part of routine compliance monitoring.

It was reported that the site was previously operated by Transpacific Industrial Solutions, however it had recently been taken over by Intergroup Limited.

The inspecting officer was informed that a yard manager had been employed to oversee and manage the day to day running of the yard, and associated waste storage and movement operations. As a result the site was found to be clean and tidy.

The site was well ordered with equipment stored in appropriate locations within the yard. 200 litre plastic drums were stored on site awaiting appropriate disposal. The drums had been rinsed and were stored upright with lids in place.

Drums and IBC's containing waste material were stored on the concrete pad area that drains to a trade waste collection point should a spill occur.

There were no signs of spills, or tracking of waste material, onto the clean areas of the yard from which stormwater directed via the stormwater system for discharge into the Waitaha Stream.

It was observed that spill kits and a shut off valve were present on site.

The inspecting officer discussed potential issues that may arise on the site with the site manager, and Council's monitoring programme and sampling were also explained.

A slight odour was detected directly above the interceptor pit, however this quickly dissipated. No odour was detected off-site. Overall the site appeared to be clean, tidy and well managed.

6.2.2 Results of discharge monitoring

The main stormwater discharge point at Intergroup was sampled on three occasions during the 2013-2014 year, with the results presented in Table 15, along with a summary of historical monitoring results.

Table 15 Results of stormwater sampling at Intergroup Limited, TRC site code STW001059, together with a summary of historical monitoring results (September 1995 to June 2012)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended Solids (g/m³)	Temperature (°C)
Consent limits	-	*15*	*6 – 8.5*	*100*	-
min	0.7	<0.5	6.2	2	9.1
max	47.8	44	8.7	740	22.7
median	5.6	6.3	7.3	95	14.9
number	55	55	56	26	53
21 Jan 2014	5.3	5.0	7.4	38	18.0
10 Jun 2014	1.1	Not visible / apparent	6.8	3	13.3
25 Jun 2014	15.3	1.3	7.3	29	13.2

KEY: Bold results do not comply with consent conditions

The samples were compliant with consent conditions, and it is noted that the pH and suspended solids results were well below the historical median for the site. The reduction in suspended solids is likely to be attributable to the installation of the three stage interceptor.

6.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Intergroup Limited.

6.3 Discussion

6.3.1 Discussion of plant performance

Inspection found that activities at the site were generally well managed. Although on two of the four inspections open topped containers were found on site, these matters had been resolved by the time of the next inspection. Following the change in ownership at the site from Transpacific to Intergroup Limited, a yard manager was employed at the site. As a result, an improvement in housekeeping and drum management was noted at the final inspection of the year under review.

It was found that the stormwater interceptor was inspected and maintained on a regular basis throughout the year under review.

6.3.2 Environmental effects of exercise of consent

Monitoring and inspections undertaken during the year indicate that the activities at the site were having little, if any, effects on the receiving environment.

6.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 16.

Table 16 Summary of performance for Consent 4776-1 Intergroup Limited discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Sampling and visual assessment at inspection	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
3. Optional review provision re environmental effects	Consent reviewed in June 2008. No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, Intergroup Limited demonstrated a high level of environmental performance and compliance with consent conditions as defined in Section 1.1.5. The consent conditions contained no administrative requirements.

6.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring of the stormwater discharge from the Transpacific Industrial Solutions site in the 2013-2014 year continues at the same level as programmed for 2012-2013.

This recommendation was implemented.

6.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

6.4 Recommendation

THAT monitoring of the stormwater discharge from the Intergroup Limited site in the 2014-2015 year continues at the same level as programmed for 2013-2014.

7. New Plymouth District Council

7.1 Introduction

7.1.1 Process description

The New Plymouth District Council (NPDC) stormwater system carries discharges from the roads and industrial subdivisions in the Corbett Road, Connett Road and De Havilland Drive areas to the Waitaha Stream. The consented discharge points were on the eastern side of the stream at the end of Connett Road (consent 0608) and previously into an unnamed tributary/open drain through farm land on the western side of the stream (consent 0609). However, Connett Road has been extended to meet at the Waitaha Stream, and the discharge point for consent 0609 is now just below the culvert where Connett Road crosses the Stream.

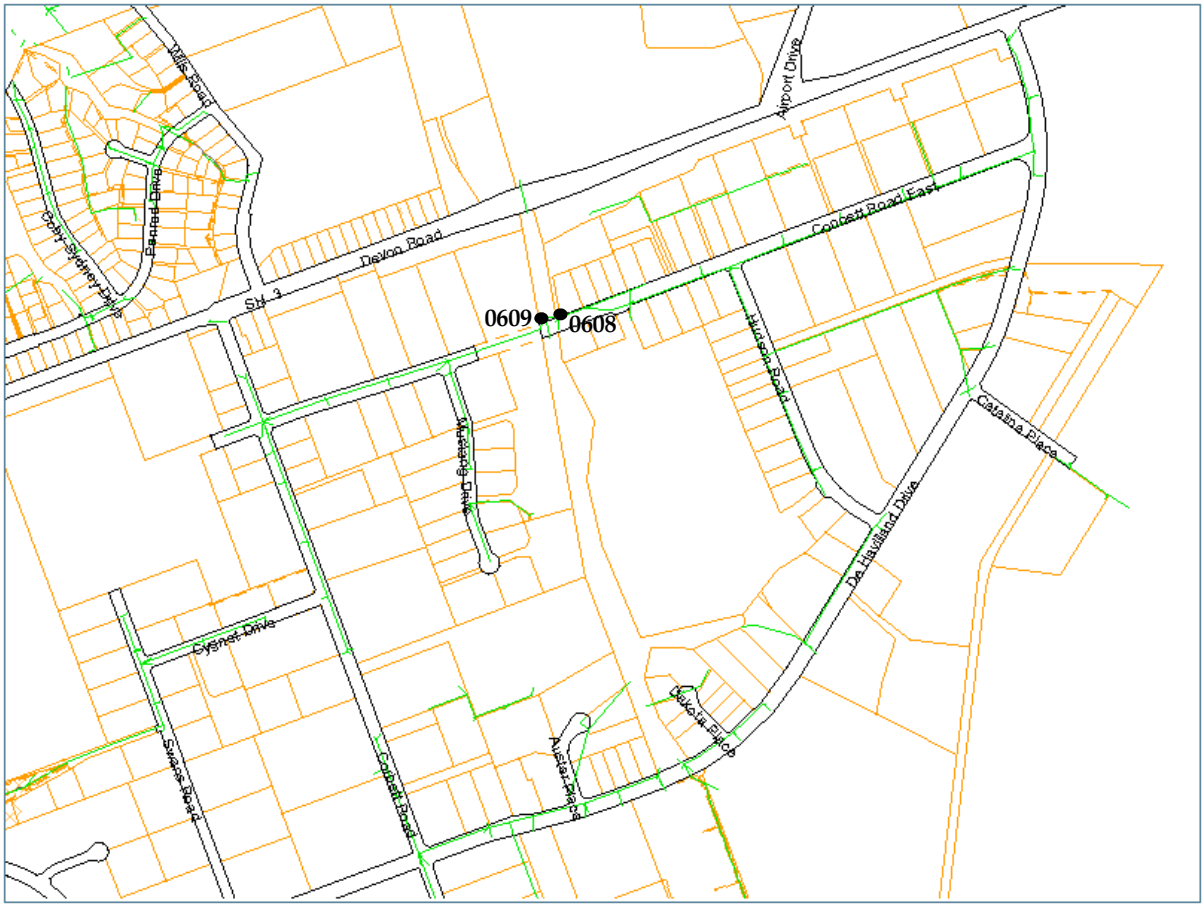

Figure 6 NPDC stormwater drainage plan

7.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

NPDC holds water discharge permit **0608-3** to cover the discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream. This permit was originally issued on 20 November 1979 as a water right pursuant to section 21(3) of the Soil and Water Conservation Act 1967.

Permit 0608-2 was issued by the Council on 2 December 1992 under Section 87(e) of the RMA. It expired on 1 June 2008. The renewed consent, **0608-3,** was issued to NPDC on 10 June 2008 and is due to expire on 1 June 2026.

There are five special conditions attached to this consent

Special condition 1 requires the adoption of the best practicable option to prevent or minimise effects on the environment.

Special conditions 2 and 3 control erosion and prohibit a number of specific effects on the water quality of the stream beyond a 10 metre mix zone.

Special conditions 4 and 5 contain standard provisions for the lapsing of the consent and review of the consent conditions.

NPDC also holds water discharge permit **0609-2** to cover the discharge of up to 1200 litres/second of stormwater from an industrial subdivision (on Corbett Road) into an unnamed tributary of the Waitaha Stream. This permit was originally issued on 20 November 1979 as a water right pursuant to section 21(3) of the Soil and Water Conservation Act 1967. The current permit was issued by the Council on 6 December 1995 under Section 87(e) of the RMA. It expired on 1 June 2014.

An application to renew this consent was received by Council on 12 December 2013. The application covers the discharge of stormwater from multiple outlets in the industrial area of the Waitaha catchment, with the intent being that consent 0608 will be surrendered once the renewal of this consent has been granted.

The application to renew 0609 was lodged more than 3 months before expiry, therefore as per Section 124 of the RMA, the Council has exercised its discretion, allowing the activity to continue under the conditions of the expired consent until a decision is made on the renewal.

Special conditions 1 and 2 place limits on the quality of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10m mix zone.

Special condition 3 contains review provisions.

Copies of the permits are attached to this report in Appendix I.

7.2 Results

7.2.1 Inspections

Specific inspections are undertaken in relation to the NPDC consents, and any issues found whilst the inspecting officer is in the area are also noted on file.

16 September 2013

The Waitaha Stream and stormwater discharge were visually inspected. Inspection found that both the stream and stormwater discharges were running clear. Upstream and downstream were both inspected and no visual effects were observed on the stream as a result of the stormwater discharges at the time of the inspection.

26 November 2013
Discharges to the Waitaha Stream were inspected and found to be reasonable. Recent rain overnight had resulted in the discharges and receiving waters being a turbid colour.

No foam, odour, films, scums or oil & grease were observed about the discharge points, and no detrimental effects were noted on the receiving waters as a result of the discharges.

13 February 2014
The Waitaha Stream and associated stormwater discharges were inspected. The stream was running slightly high, and was turbid in colour at time of inspection, following recent light rain in the area.

The discharges entering the Waitaha Stream were found to be low flow and of good quality, appearing to be less turbid than the receiving water. There were no odours noted about the discharges or receiving waters.

No detrimental effects were noted on the receiving waters as a result of the discharges.

5 June 2014
The Waitaha Stream and stormwater discharges were visually inspected. The stream was found to be slightly turbid in colour. The stormwater discharges were found to be of a similar standard (or slightly improved) to that of the stream. Only a very small volume of stormwater was observed being discharged from the stormwater pipes into the receiving environment.

There were no odours, scums or films noted. No hydrocarbon sheens were observed within the stormwater discharges or the receiving environment. The stream was found to be flowing freely.

The suspended sediment colour and quantity upstream and downstream of the discharge locations appeared to be constant. No issues were identified at the time of inspection.

7.2.2 Results of discharge monitoring

The Connett Road stormwater drains receive stormwater from Connett Road, Corbett Road and from a number of adjacent industries. The flow that discharges from the stormwater outlet on the eastern bank of the Waitaha Stream includes discharges from C&O Concrete Products Limited and Intergroup Limited. The flow that discharges from the outlet on the western bank of the Waitaha Stream includes the discharge from Greymouth Facilities Limited. The discharges from both the Connett Road eastern and western drains to the Waitaha Stream were sampled on two occasions, with the results presented in Table 17 and Table 18.

There are no numerical contaminant limits given on this consent, however the discharge quality can be compared to the standards given for permitted activities in Rule 23 of the Regional Freshwater Plan (Appendix III), which have also been incorporated as limits on the consents issued for industrial sites in the catchment discharging via this outlet.

The samples were found to comply with these standards with the exception of oil and grease in the sample collected on 21 January 2014, and suspended solids in the sample collected on 25 June 2014.

It is noted that the consent holders discharging via this outlet were all complying with their consent limits on both of these sampling occasions, and the source of the elevated oil and grease and suspended solids could not be identified.

Table 17 Sampling results - Connett Rd stormwater, eastern drain (TRC site code STW001061, consent 0608), together with a summary of historical results September 1995 – June 2013

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)
Permitted activity limits	-	*15*	*6 - 9*	*100*	-
Number	29	28	29	28	27
Min	3.4	<0.5	6.4	2	11.5
Max	19.1	230	8.3	270	20.2
Median	10.2	2.6	7	72	14.9
21 Jan 2014	8.5	**29**	6.8	69	18.4
25 Jun 2014	6.4	b	7.8	**170**	14.0

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

Table 18 Sampling results - Connett Rd stormwater, western drain (TRC site code STW001112, consent 0609), together with a summary of historical results September 1995 – June 2013

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)	Turbidity NTU
Consent Limits	-	*15*	*6.0 - 9.0*	*100*	-	-
Number	11	10	11	11	10	11
Min	2.4	1.5	6.4	<2	11.6	1.9
Max	18.3	102	7.1	180	20.9	230
Median	9.6	2.2	6.7	34	14.4	40
21 Jan 2014	11.3	1.2	7.7	**890**	18.1	**1300**
25 Jun 2014	8.7	Not visible / apparent	9.1	**590**	14.1	**640**

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

The discharge was found to be above the consent limit for suspended solids on both sampling occasions, but was in compliance with consent conditions for all other parameters determined. It was not possible to identify the source of the elevated

suspended solids at the time of sampling, and investigations will continue during future sampling surveys.

The elevated suspended solids were not found in any of the consented discharges flowing to this outlet, and the Council is continuing to try to identify the sites in the Waitaha catchment that do not comply with the standards terms and conditions of Rule 23 of the Regional Freshwater Plan.

7.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the activities of NPDC in the Waitaha catchment.

There was one unauthorised discharge recorded on the Council's unauthorised incidents database.

20 August 2013

A complaint was received at 5:50 pm about a discoloured stream at the end of Wills Road, Bell Block. An inspection found the stream to be running a murky, milky, whitish colour for some distance. Photographs and samples were taken. The source of the contamination could not immediately be traced, with the investigation continuing the following day. Notification was received from NPDC about a sewage discharge occurring earlier that day. The samples were not therefore submitted for testing. A letter of explanation was received NPDC which provided evidence that the milky white discharge observed was not a consequence of the sewerage discharge.

Photo 5 Waitaha Stream discolouration 21 August 2013

The Council was advised that at some stage, someone had knocked the lid off a manhole, dropped debris in, and replaced the lid. This had resulted in the overflow to the stream. The blockage was cleared, the area was disinfected and signs advising that a sewerage discharge had occurred were put in place. NPDC advised that the matter was going to be followed up with the property owner.

The Council was also notified of four further sewerage overflows in the Waitaha Stream catchment.

5 December 2013
On 5 December 2013 notification was received that due to heavy rain, the overflow alarm had been generated at the Connett Rd pump station. The site had been visited and it was reported that the Waitaha Stream was higher than the overflow outlet, and that the stream was entering the pump station despite a non return valve being installed. Investigation by contract staff found that the pump station was being flooded by the stream, and that even with both pumps running, the pumps could not keep up with the flow entering from the stream.

13 June 2014
On 13 June 2014 notification was received that there was an unauthorised discharge into the Waitaha Stream. This was due to power failure at the pump station. Powerco were contacted to restore power and two sucker trucks were brought to the site to lower the wet well level and truck the sewage to an alternative discharge point in the reticulation system.

27 June 2014
On 27 June 2014 notification was received that a large inflow of rain and groundwater on 25 June 2014 resulted in a discharge from the Connett Road pumping station. Both pumps were run to reduce the level in the wet well and to stop the discharge. It was reported that the overflow event lasted for 9 minutes.

30 June 2014
On 30 June 2014 notification was received that there was a 30 minute discharge from the Connett Road pumping station due to heavy rainfall, and groundwater entering the wet well. This occurred when the stream level rose above the pump station overflow pipe. The contractor visited the site to check that both pumps were running. Warning signs were erected as per the incident response plan.

The Council was subsequently advised that NPDC's investigation found that one pump was very old, and was therefore swapped out for a better suited spare pump. The installation and operation of the overflow non return valve was checked and found to be functioning correctly.

NPDC also advised that the medium to long term actions identified included:

- A review of the catchment is to be undertaken to identify likely sources of inflow. The catchment covers 120ha and contains 83 manholes. There is 5,522m of pipe of which 3550m is 150mm diameter, 1085m is 225mm and the balance is 250mm. Pipe materials are predominantly asbestos cement and glazed earthenware. The estimated cost to undertake an inspection of every manhole, and to smoke test and CCTV all sewers in the catchment is in excess of $60,000. The review will aim narrow down the most likely problem areas and specific

testing will be undertaken in localised areas only. This work will be conducted during the 2014/15 year.

- The catchment is predominantly industrial. It is possible that individual properties have been directed to or have installed first flush diverters to capture the initial run off from paved areas. Such installations would generate significant short duration peaks at the onset of rain as observed in these events. Further investigation on this matter will be undertaken.

- In the long term, NPDC proposed that the Connett Rd pumping station be abandoned, with the sewage flow redirected to a new pumping station to be constructed to service future residential Area Q subject to planning process being completed. The new pumping station would be intended to have greater capacity and include emergency storage.

7.3 Discussion

7.3.1 Discussion of plant performance

It is recognised that NPDC has limited control over the actions of third parties making inappropriate discharges into the stormwater network. During the year under review there were unsourced unauthorised discharges via the NPDC reticulated stormwater network from each of the discharge points on each of the monitoring occasions. Two of the unsourced unauthorised discharges resulted in exceedances of the suspended solids consent limit at the discharge point covered by consents 0609 (890 and 590 g/m^3 vs limit of 100 g/m^3).

In regards to the general maintenance and operation of the stormwater network, NPDC performed satisfactorily.

There were five sewage overflows to the stream during the year under review. One was potentially as a result of a property owner blocking the sewage system, one was as a result of a power failure at the Connett Road pumping station, and the remaining three were as a result of heavy rainfall and high levels of groundwater ingress.

The NPDC, in the long term plan is proposing to build an upgraded pumping station further down the catchment, and is planning to undertake investigations to identify cross connections and other issues that may affect the performance of the pump station during the 2014-2015 year.

7.3.2 Environmental effects of exercise of consents

Inspections and sampling of the Waitaha Stream below the mixing zone found that there was little, if any, adverse effects as a result discharges from the stormwater system, or from any maintenance undertaken by NPDC of the outlets themselves.

7.3.3 Evaluation of performance

A tabular summary of NPDC's compliance record for the year under review is set out in Table 19 and Table 20.

Table 19 Summary of performance for Consent 0608-3 New Plymouth District Council's discharge of stormwater into the Waitaha Stream (true right bank - east)

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects	Inspection	Yes
2. Mitigation of erosion where possible	Inspection. No erosion issues found	Yes
3. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, and receiving water sampling	Yes
4. Provision for consent to lapse if not exercised	Consent exercised	N/A
5. Provision for review of consent conditions	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		N/A

Table 20 Summary of performance for Consent 0609-2 New Plymouth District Council's discharge of stormwater into the Waitaha Stream (true left bank - west)

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Sampling	2 suspended solids exceedances due to unsourced unauthorised discharges
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
3. Optional review provision re environmental effects	Option for review in June 2008 not exercised. No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		N/A

N/A = not applicable

During the year, the NPDC demonstrated a high level of environmental performance with the resource consents. Although the suspended solids limit on the consent was exceeded, there were no increases of stream turbidity recorded. It is noted that it is not currently the Council's practice to include discharge quality limits on the discharges from the combined NPDC reticulated stormwater outlets.

Improvement is desirable in relation to the reticulated waste water systems and pump station in the Waitaha catchment. A number of sewage overflows to the stream occurred during the year under review, which will be contributing to the nutrient

enrichment found downstream of Connett Road during the fish survey. NPDC has provided an outline of the medium to long term plans to improve their control over the reticulated waste water in this catchment.

There are no administrative requirements on the NPDC consents.

7.3.4 Recommendations from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of NPDC in this catchment in the 2013-2014 year continues at the same level programmed for 2012-2013.

THAT the option for a review of resource consent 0608-3-2 in June 2014, as set out in condition 5 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

7.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

7.4 Recommendation

THAT monitoring programmed for consented activities of NPDC in this catchment in the 2014-2015 year continues at the same level programmed for 2013-2014.

8. Symons Property Development Ltd

8.1 Introduction

8.1.1 Process description

Symons Property Developments Limited hold a consent to discharge stormwater from their truck depot and pipe washing facility on Connett Road East, Bell Block. The site was recently developed, and formal drainage was being established. The companies operating from the site are: Symons Transport Limited, who operate road tankers that are used to transport bulk liquids between processing plants; and Symons Energy Limited, who provide support services to the oil and gas industry including transportation and cleaning of drilling pipes, and storage and distribution of products such as those used in drilling mud. Collectively, these Companies are known as the Symons Group.

The land on which the site is located, although in an area zoned for industrial use, was in agricultural use until it was developed by Symons Property Developments Limited recently. It originally sloped from west to east towards the Waitaha Stream. Re-grading has occurred and there are now three levels, with ramps providing access between each level. (Figure 5)

Each of the sections/levels are utilised for different aspects of the Symons Group's activities. The western, upper level (141 Connett Road East) is occupied by Symons Transport Limited, and the central and eastern sections (143 and 145 Connett Road East) are occupied by Symons Energy Limited.

Western, upper level (141 Connett Road East)

This section is occupied by Symons Transport Limited, which operates a fleet of 30 road tankers that are maintained to food grade standard. This level is metalled with no formal stormwater drainage. It contains the site office, truck wash facility, and a double skinned 40,000 litre diesel storage tank. The road tankers from both companies are also parked on this area of the site when not in use. The truck wash waste water is currently collected in an open pit, outside the western side of the building that houses the truck wash. This then discharges into the NPDC trade waste system. The Company advised Council that it was going to install bunded areas that drain to trade waste at both the diesel delivery and dispensing areas. The truck wash roof water is directed to two 30,000 litre storage tanks which are used as the water supply for the truck wash. The overflow from the storage tank is on to ground.

Stormwater from this level currently either drains to the lower (central) level of the site, or discharges to the road reserve from the site entrance. Some soakage to ground will also occur. Stormwater exiting this entranceway will flow to the Waitaha Stream, either along the road kerbing, or via the reticulated stormwater system through road side sumps if they are installed. The Company plans to seal this upper level of the site, and put in formal drainage, connecting into the NPDC reticulated stormwater system, which discharges into the Waitaha Stream immediately to the north of the Connett Road East culvert.

There are no stormwater detention/treatment devices proposed for this sub catchment and the applicant has indicated that this site improvement work would not be started for at least a year.

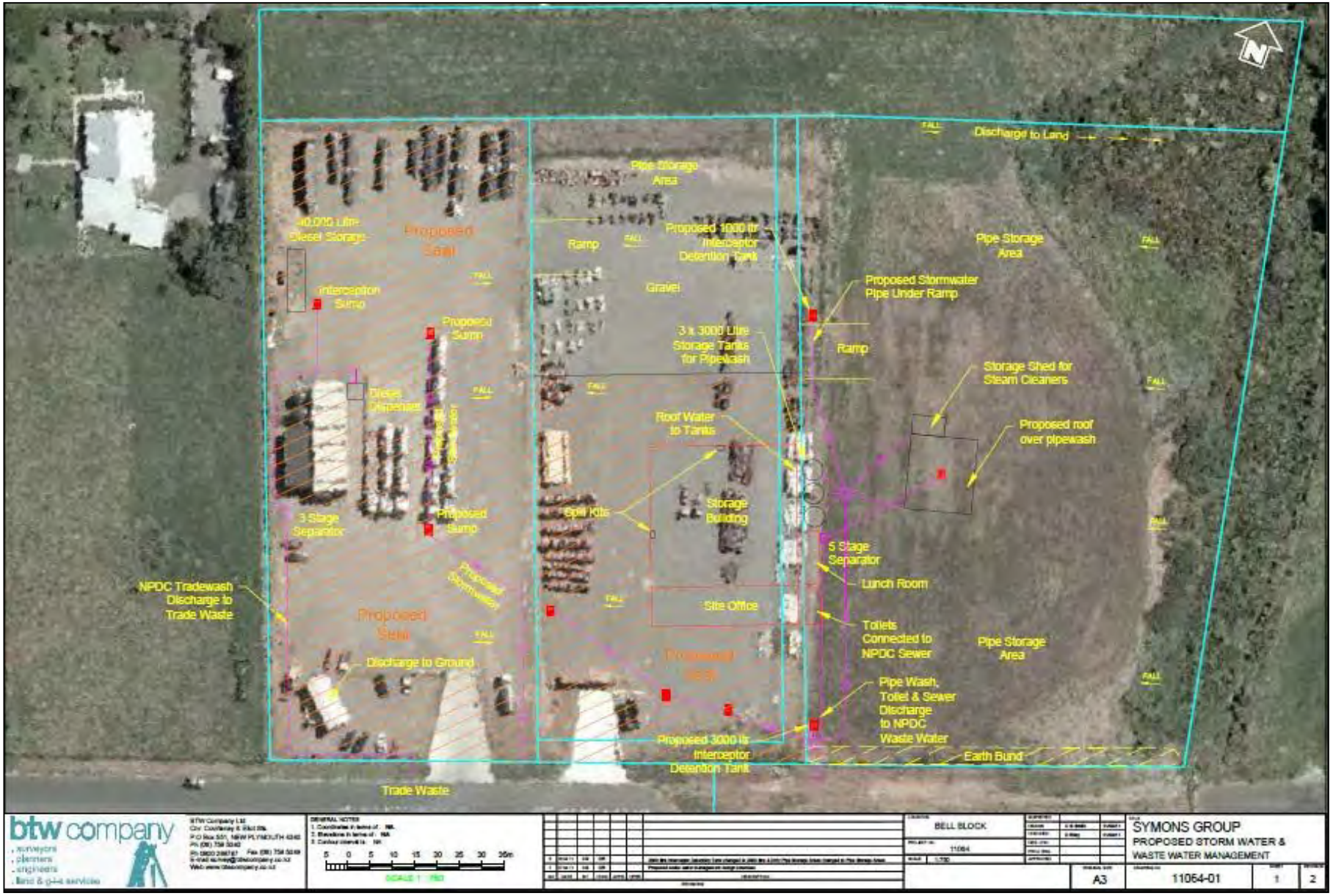

Figure 7 Symons Group Limited site layout

Central, middle level (143 Connett Road East)

The central section contains the site office, lunch room, toilets and a large storage shed, where the products supplied to the oil and gas industry are housed. The northern end of this section is used to store drilling pipes that have been washed and prepared for use at the drilling sites. The surface of this section is currently metal, with the exception of a 20 m concrete apron around the storage shed.

Stormwater from the shed roof is directed to three 40,000 litre storage tanks, which are used to supply the pipe wash facility. The storage tanks are located on the lowest level (eastern section) and currently overflow on to ground.

Stormwater from the southern end of the central section flows to the formal drainage installed on this level, which currently drains into a pit at the south west corner of the lower eastern section. The remaining stormwater flows to the east and enters the drain on the lower eastern section.

The Company has sealed the front two thirds of the central section. There are no stormwater detention or treatment devices proposed for this sub catchment.

Eastern, lower level (145 Connett Road East)

The majority of the section is metalled and is graded with a fall to the west, away from the stream. There is an earthen bund along the southern boundary of this section of the site.

This level of the site is used for storage of new pipe casings prior to them being prepared for use, and also unused casings returned from the off-site drilling activities. There is no reconditioning of used pipes carried out at the site.

The pipe wash facility is also located on this section.

The pipes are cleaned on a concrete wash pad using high pressure hot water blasters. When the activity commenced, wash water and stormwater from the wash pad drained to an underground 5 stage (5000 L) water detention tank, which was pumped out into 1000 litre international bulk containers (IBC's). These IBC were transported by forklift and emptied into the pit that services the truck wash on the uppermost level.

During the 2011-2012 year, the Company installed the necessary pipe work to connect this detention tank into NPDC's trade waste system, and constructed a roof over the washpad.

The majority of the stormwater from this section accumulates in the south western corner, where a pit has been dug. Under light rainfall conditions the stormwater will currently soak to ground. Under heavier rainfall, this pit will discharge to the Waitaha Stream via a small galvanised pipe with filter cloth over the end that has been pushed through the wall of the pit, and a temporary line of fire hose running along the road reserve. The remainder of the stormwater either ponds on the northern side of the ramp connecting the lower and central levels or discharges overland to the Waitaha Stream from the north eastern corner of the site.

The Company has installed formal drainage on the western side of this level, which includes a detention/treatment device, and is connected into the NPDC reticulated stormwater system that flows to the Waitaha Stream.

8.1.1.1 Potential contaminants and mitigation measures

There is the potential for contaminants from the activities on site to become entrained in the stormwater on site.

The truck washing activities are carried out in a drive though building with the washwater directed to trade waste, with little, if any, potential for stormwater contamination.

The diesel tank is double skinned, and the bunded delivery and dispensing area in which this is sited drains to the trade waste line that services the truck wash, thus minimising the potential for stormwater contamination.

Other potential contaminants identified relate to:

- the dry and liquid goods stored on site,
- oil/fuel,
- hydrocarbons from the pipes,
- grease from the pipes,
- rust from the pipes, and
- suspended solids from the metalled site surfaces and heavy traffic movements.

Neither of the two pipe greases used to protect and lubricate the pipe threads contain metals.

Some of the dry products are alkaline and glycol exhibits a significant biochemical oxygen demand.

A comprehensive stormwater management plan was provided. There are procedures in place for the handling of the stored goods, which states that all loading/unloading is carried out inside the storage shed. A contingency plan is in place for the site, and spill containment kits are available, thus minimising the potential for contaminants to become entrained in the discharge as a result of accidental spillage.

The new pipes are stored on a metalled area of the site prior to cleaning and this area is serviced by stormwater detention tanks. The pipes are all fitted with end caps to protect the threads, which will also minimise the potential for the thread protectants to become entrained in the stormwater.

It was considered that the progressive sealing of the site and the stormwater detention devices described in the application for the consent would reduce the suspended solids concentration of the discharge to the stream. The Company was however, unable to obtain adequate information from the supplier regarding the treatment capacity of the proposed installation, as the particular tanks in question were a relatively new product. The initial proposal was that one 1000 litre detention device be installed to treat stormwater from the northern third of the lowest (eastern) level, and that a

modular 3000 litre modular detention tank be installed to treat stormwater from the remaining two thirds of the lowest (eastern) level.

There is a contingency plan in place for the site, which was approved by Council in December 2012.

8.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Symons Property Development Ltd holds water discharge permit **7805-1** to discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream. This permit was issued by the Council on 9 May 2011 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

It has 13 special conditions;

Special condition 1 requires that the consent holder adopt best practice.

Special condition 2 stipulates the size of the catchment area.

Special condition 3 requires stormwater for one section of the site be treated to certain specifications.

Special condition 4 sets out requirements for hazardous substances storage.

Special condition 5 sets out discharge quality parameters that must be met.

Special condition 6 requires that the discharge shall not give rise to certain effects in the receiving water.

Special condition 7 requires that the consent holder prepares and maintains a contingency plan.

Special condition 8 requires that the consent holder prepares and maintains a stormwater management plan.

Special condition 9 requires that the consent holder notify Council of any intended significant changes in processes or infrastructure at the site.

Special condition 10 requires the consent holder to review and update the management and contingency plans prior to making any significant changes at the site.

Special condition 11 requires that the consent holder make any data gathered on stormwater detention tanks at site available to Council.

Special condition 12 is a lapse condition

Special condition 13 is a review condition.

The permit is attached to this report in Appendix I.

8.2 Results

8.2.1 Inspections

16 September 2013

Inspection found that the yards were generally in a good, clean, and tidy order. The Energy Services yard was inspected and it was found that the area around the cleaning facility was clean and tidy. A cut down plastic drum was being used for holding heavy crude waste, which was a by-product of the pipe cleaning process. This was noted to be nearly full and stored outside of the designated concrete wash down area. The Company was advised that an overflow may result in contaminants soaking into the ground, and was asked to move this container so that it was fully contained on the concrete pad, such that any spills etc would be directed through the appropriate treatment system.

It was found that some fresh earth had been dumped on the bank nearing the Waitaha Stream. The Company was instructed that this area would require sediment controls to be put in place to prevent silt and sediment running off into the surface water following periods of wet weather, until the area was suitably stabilised. The Company was also asked to consider bunding along this edge to ensure all surface water remains on site, and is directed for treatment through the appropriate system prior to discharge.

The trucking yard was inspected and it was found that a small amount of hydrocarbons were tracking overland and entering the sand trap at the rear of the truck wash bay. This was a result of crude waste material overflowing from a drum where it is collected during the truck washing process. The Company was asked to ensure that these are monitored and emptied readily, and were advised that a lid of some description would help prevent the drums filling with rain water, and assist in prevention of spills.

It was reported that the truck wash area was otherwise clean and tidy.

26 November 2013

Inspection found that the property was in a clean and tidy order. Overnight rain had resulted in a wet surface so any pending dust issues were unable to be reasonably assessed. The inspecting officer spoke to the Health, Safety and Environmental representative at the site regarding the requirement to ensure dust leaving the site is controlled over the summer months.

The pipe cleaning area was not in use at the time of inspection, however it was found to be clean and tidy, with no material being stored outside the concrete area that drains to the separator prior to discharge to trade waste. The separator was inspected and found to be in a reasonable condition. Some hydrocarbons were observed on the surface, however this was only a thin layer.

The area about the truck wash was clean and tidy. Plastic drums containing waste hydrocarbons as a result of the truck cleaning process were again found to be stored

outside. The Company was asked to consider placing lids on these drums and storing them within a bund to prevent spillage and overflow as a result of rain falling into the open topped drums.

It was noted that earth had been placed along the bank of the site bounding the Waitaha Stream. The Company was instructed that silt and sediment controls were required to be placed along this exposed area immediately, and were advised that failure to rectify this may result in a breach of special conditions 1 and 5 of resource consent 7805-1 during periods of wet weather.

13 February 2014

This site inspection was carried out as part of routine compliance monitoring. The inspection found that the Energy Services yard was clean and tidy. All drill pipe washing activities were taking place in the designated cleaning area. At the time of inspection it was reported that all wash water was directed via a separator treatment system prior to discharge into the Waitaha Stream. However, it was confirmed post inspection that the treated washwater was directed to trade waste as per the information provided at the time of the consent application, not to the stream.

The separators were inspected and a film of oil was observed on the surface of the first two chambers. This quickly decreased in density, and no oil was observed in the final chamber prior to the outlet.

No material was stored outside of the covered concrete pad as per best practice. The discharge area into the Waitaha Stream was inspected, and although there was no discharge at the time of the inspection, no contaminants were noted on the grass down gradient of the discharge pipe.

An earth bund wall had been constructed along the edge of the Waitaha Stream to protect the stream and associated wetland from the possibility of contaminants and/or suspended solids within the stormwater system from entering the wetland without adequate treatment.

The transport yard was also inspected and found to be clean and tidy about the truck wash area. Some open topped drums were observed stored outside the truck wash area. These appeared to be getting used to store waste during the truck cleaning process. One of the drums was nearly full. This was highlighted to staff on site, who were to arrange for the drums to be emptied. It was recommended that lids be placed on these drums to prevent the risk of them filling and overflowing as a result of heavy rain.

There was a slight breeze at the time of inspection, however no dust was being generated on site, and was subsequently not an issue at the time of the inspection.

22 May 2014

This site inspection was undertaken following a period of wet weather, as part of routine compliance monitoring in the catchment. The gravel on site was wet and therefore dust was not an issue.

The interceptors on the lower pad area near the pipe wash bay were inspected and appeared to be working effectively. The inspecting officer was informed that Intergroup were contracted to clean the interceptors out on a regular basis.

Pipe cleaning was being undertaken over the concrete pad area. All material used in this process (water blasters etc) were stored on the pad to ensure that all run off from the equipment and pipe cleaning process was collected and directed for appropriate disposal. However, there was some indication that contaminants were being tracked off the pad onto the neighbouring gravel area. This was raised as a potential issue with the site owner, who immediately arranged for a digger on site to scrape up the potentially contaminated gravel, and dispose of it in an appropriate manner.

In the transport yard, open topped storage containers containing various contaminants collected as a result of draining residue from transport tankers were found to be stored outside. Two of the three containers were found to be full and the Company was advised that further rain would result in possible overflow and discharge of contaminants onto the nearby land. Storage by this method was not appropriate, and bunding needed to be installed around the storage containers should the Company wish to continue this practice.

The site owner was spoken to about the storage of waste product near the truck wash bay, and about the recent dust issues regarding giving consideration to how this aspect could be better managed in the future.

8.2.2 Results of discharge monitoring

The stormwater from the central section of the site combines with the stormwater from the eastern section of the site, after the eastern stormwater has passed through the detention tanks. This combined flow is sampled at site STW002083 (Figure 8).

Figure 8 Symons Property Developments Limited property and monitoring site locations

One discharge sample was obtained during the year under review. The results of this sampling are presented in Table 21, along with the limits imposed on the consent.

Table 21 Results of Symons Property Developments Ltd discharge monitoring (STW002083)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)	Turbidity NTU
Consent Limits	-	*15*	*6-9*	*100*	-	
21 Jan 2014	17.1	<0.5	6.4	2	18.8	0.72
25 Jun 2014	10.1	Not visible / apparent	7.3	83	12.0	130

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

The sample complied with the consent limits for the parameters determined.

8.2.3 Investigations, interventions, and incidents

In the 2013-2014 year there were four complaints received by Council in relation to dust emissions from the site, two of which were substantiated at the time of inspection. As a result of the two substantiated unauthorised dust discharges two separate infringement notices were issued.

11 November 2013

At 9:14 am a complaint was received regarding dust from a truck transport yard on Devon Road, Bell Block. Investigation found that a very strong southerly wind was blowing at the time of inspection. Some visible plumes of dust were leaving the site

sporadically on strong gusts of wind. Video was taken. The dust issue on site was discussed with site management. The investigating officer was informed that a water truck had been used at the site three times that day and it was reported that the truck was applying water to the yard at the time of inspection. The Company was advised to keep the truck constantly on site and to wet all areas, including pipe racks and beneath parked vehicles, to ensure no dust could be generated and leave the site. It was observed that the yard was wet, with puddles around the trucking shed. The yard on the site next door was also being done. The Company was asked to ensure that, on any windy day, the water truck was to start early to ensure no dust was generated, and that vehicle movements were not to generate any dust. The Company was asked to write to Council within 14 days giving reasons why enforcement action should not be undertaken. A response was received outlining the measures that the Company had undertaken to try to control the dust emissions from the site, and additional medium to long term solutions that were being considered by the Company. An infringement notice was subsequently issued.

14 January 2014
At 1:44 am a complaint was received concerning dust emanating beyond the site boundary. A dust survey was undertaken on Devon Road and Connett Road. At time of inspection there was no noticeable dust beyond the site boundary. The Company was informed of the findings, and the investigating officer was advised that the Company was aware of the problem, and had water trucks in operation to try and control the dust. The Company also stated that they were waiting on a dust suppressant to arrive to aid in their efforts to control the dust.

The findings of the investigation were reported to the complainant, and it was agreed that at time of inspection, there was no noticeable dust beyond the site boundary of Symons Yard.

24 February 2014
At 11:24 am a complaint was received regarding dust discharging off-site from Symons Transport Yard, Bell Block. At time of inspection the slight northerly wind had changed direction, meaning that no further dust was being emitted from the site. The Company was contacted and they immediately arranged for a water cart to wet the yard. Although no dust was being discharged from site at the time of the inspection, the Company was asked to continue to be vigilant in this aspect of the operation to ensure that there are no off-site effects from dust. The Company was advised that no further action was to be taken by the Council in regards to this complaint.

8 April 2014
At 7:50 am a complaint was received regarding dust discharging from a transport yard on Connett Road, Bell Block. Investigation found objectionable dust discharging beyond the boundary of the property. The water truck was filling at the time of inspection and the investigating officer was informed that this was to be used throughout the day. Photographs were taken. The Company was instructed to ensure no objectionable or offensive dust discharges beyond the boundary of the property. An infringement notice was subsequently issued.

Photo 6 Objectionable dust discharging beyond the boundary of Symons site, 8 April 2014

8.3 Discussion

8.3.1 Discussion of plant performance

On the whole, general housekeeping of the site was found to have been good during the year under review, and the site was generally well managed. However, open topped containers of waste oil were found at both the washpad on one inspection, and at the truck wash on all four monitoring occasions. This matter was not resolved until early in the 2014-2015 year.

Earth had been place along above the bank to the Waitaha Stream, and on two inspections the Company was instructed to stabilise or install silt control measures. This was found to have been done early in the 2014-2015 year. The deposited earth is being used as a bund to ensure that there is no stormwater discharged to the Waitaha Stream without adequate treatment.

At the final inspection of the year under review it was found that there had been contaminants from the washpad. The Company undertook to remediate the affected area immediately, and early in the 2014-2015 year it was found that the concrete pad had been extended to prevent a reoccurrence.

There were two substantiated incidents logged in relation to the site, arising from complaints about dust emissions, both of which resulted in the issuing of an abatement notice.

8.3.2 Environmental effects of exercise of consent

In relation to the exercise of the Company's stormwater consent and general management of activities in the stormwater catchment, no significant adverse effects were noted during the inspections of the site, or sampling of the stream.

It was, however, found that dust was being discharged beyond the property boundary from the metalled yard on two occasions.

8.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 22.

Table 22 Summary of performance for Consent 7805-1-1 Symons Property Development Ltd discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option	Inspection and programme supervision	Requests made at all 4 inspections for uncovered containers to be addressed, and on 2 occasions for silt control measures to be installed
2. Catchment not to exceed 3.14 ha	Inspection	Yes
3. Stormwater from Lot 24 DP376382 to be treated.	Inspection	Yes
4. Hazardous substance to be stored correctly.	Inspection	Yes
5. Discharge parameters not to exceed certain limits	Sampling	Yes
6. Discharge not to give rise to certain effects in receiving waters	Observations at inspection and during sampling	Yes
7. Prepare and maintain a contingency plan	Review of Council records	Yes
8. Prepare and maintain a stormwater monitoring plan	Review of Council records	Yes
9. Notify Council of changes at the site	Observations at inspection and review of Council records. No changes made	N/A
10. Review and update plans to suit any changes at the site	Observations at inspection and review of Council records. No changes made	N/A
11. Provide Council data on stormwater tank investigations	Investigation is optional and not yet undertaken.	N/A
12. Lapse conditions	N/A	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
13. Review condition	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Good High

N/A = not applicable or not assessed

During the year, Symons Property Development Limited generally demonstrated a good level of environmental performance and high level of administrative performance with resource consent conditions.

However, the Company's overall environmental performance was poor, as defined in Section 1.1.5, due to breaches of the RMA and Regional Air Quality Plan in relation to dust discharges from the site. There were two infringement notices issued as a result.

8.3.4 Recommendations from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

THAT the option for a review of resource consent 7805-1 in June 2014, as set out in condition 13 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

8.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

8.4 Recommendation

THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2014-2015 year continues at the same level as programmed for 2013-2014.

9. Taranaki Sawmills Limited

9.1 Introduction

9.1.1 Process description

Photo 7 Taranaki Sawmills site

9.1.1.1 Stormwater

Taranaki Sawmills Limited's sawmilling and timber processing site is situated on the banks of the Waitaha Stream. The majority of the site is gravelled or undeveloped. Stormwater generally soaks to ground; however, overland flow occurs during heavy rain. The site has a stormwater drainage system where stormwater is channelled and contoured into underground stormwater pipes and open stormwater drains (Figure 9).

Stormwater near the southern boundary of the site flows into and over land and into an unnamed tributary of the Waitaha Stream. Stormwater from neighbouring sites also flows into this tributary; specifically stormwater from Weatherford New Zealand Limited. Weatherford's wash pad is directed though an interceptor system prior to discharge into the unnamed tributary. Taranaki Sawmills has planted the unnamed tributary, which is approximately 100 metres long, with wetland plant species.

The area between the administration building and sorting table is contoured so that stormwater flows into an underground stormwater pipe system. The underground system has an outlet into the top of a second open stormwater wetland drain in the headwaters of another unnamed tributary of the Waitaha Stream.

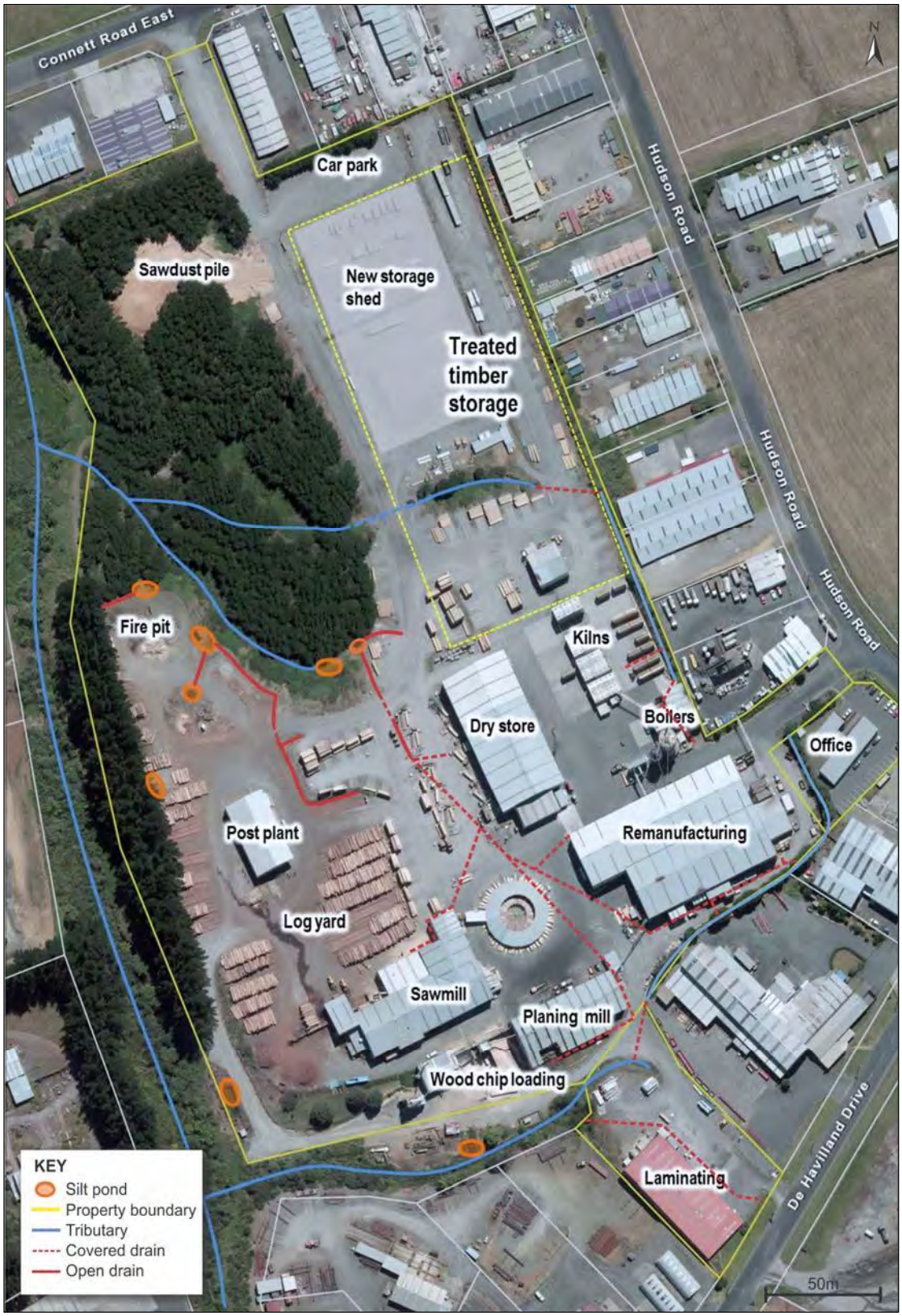

Figure 9 Taranaki Sawmills site drainage systems

The tributary is approximately 100 metres long and drains from approximately the middle of the site in a north-westerly direction. Stormwater from the northern area of the site flows over and into land and into a third unnamed tributary planted with wetland plant species. The third tributary is approximately 100 metres long and drains

in a westerly direction. The second and third stormwater drains flow through the same outlet into the Waitaha Stream.

Taranaki Sawmills have undertaken riparian planting and improvement of the "wetland" areas along the three stormwater drains. The wetlands effectively act as silt traps and reduce the amount of sediment in the overland stormwater flow. The Council provided advice regarding appropriate riparian planting to reduce the amount of sediment entering the stormwater drain and discharging into the Waitaha Stream. Monitoring undertaken by the Council has shown that the wetland was having a positive effect on the downstream water quality.

Photo 8 Taranaki Sawmills, riparian planting along tributaries

It is considered that there is little potential for contamination of stormwater due to on-site control measures. No treatment of wood is undertaken on the site. Most of the waste wood material is used to fuel the boilers on site or is removed from the site and recycled. For example bark is processed into garden mulch, and wood chips are transported to a pulp and paper mill.

Car parks and vehicle working areas are mostly unsealed, so that any fuel leaks or spillages will soak into the ground rather than run into the stormwater system. To reduce yard dust problems, the site is routinely sprayed with water, and historically, oil was placed on the access tracks.

The active area of the site has recently been expanded to accommodate the storage of timber for domestic dispatch, an activity that has been relocated from Katere Road. An additional area of approximately 1.3 ha in the north eastern corner of the site has been cleared of vegetation and gravelled for this purpose.

As required by the Company's consent, a contingency plan is in place in case of spillage at the site. The latest version of the contingency plan was approved by Council in January 2013.

9.1.1.2 Air discharges

Sawmilling activities at the site generate wood waste. The sawdust, wood shaving, and wood chip components of this waste are reused on site for generating energy for the timber drying kilns. No timber tanalising occurs on site, so no tanalised timber wastes are incinerated. Incineration occurs in either an open fire-pit, or in boilers.

The open fire-pit is approximately 10m wide x 10m long x 2m deep. The material incinerated in the open pit is dried untreated timber off-cuts, and occasionally other non-toxic materials such as paper, cardboard, and timber strapping.

There are boilers operated on the site, which run 24 hours a day, seven days a week, with emissions discharged via stacks. Emissions from the original 2 megawatt (MW) Entec Boiler discharge through a 12 metre tall stack, which achieves dust/smoke emissions containing less than 500 mg/m^3 of particulate. The second and third boilers are 4 MW Vekos Boilers, and the single stack for these boilers is 24 metres high.

There are a number of potential contaminants which could be discharged into the air from the combustion of wood products. Modelling of the stack emissions undertaken by the Company has shown that contaminant concentrations at ground level are well below guideline levels.

There are also aesthetic effects to be considered.

Particulates

The combustion of wood and coal from Taranaki Sawmills releases particulate. It is the fine particles of less than 10µm in diameter (PM_{10}) that can adversely affect health. Mitigation measures employed by Taranaki Sawmills include:

- Achieving maximum combustion by ensuring the boilers burn at an optimal level.
- The Vekos boilers are fitted with a two stage cyclone grit arrester to reduce particulate emissions.
- The stacks are of a suitable height to ensure that emissions are well dispersed before reaching ground level (as per Appendix I of the RAQP).
- Taranaki Sawmills have installed an 'oxygen trim' on the 24 metre high Vekos stack. The oxygen trim monitors oxygen levels in the stack, sending a signal to the furnace to stop fuel being fed into the furnace until optimum oxygen levels are reached again. This also assists in achieving maximum efficiency of combustion.
- Staff observe the nature of smoke emissions to determine whether to reduce the amount of fuel fed into the other furnace.
- Various management practices are used to ensure the fire-pit is used efficiently, such as: supervision, using only dry waste-wood for incineration, loading only small quantities into the fire-pit.

- Other operative procedures such as regular maintenance of equipment, visual monitoring of smoke emissions, and staff training and awareness of environmental obligations.

Carbon monoxide (CO)

CO is produced from the incomplete combustion of fossil fuels such as wood and coal, and it can adversely affect human health by reducing the amount of oxygen transported to body tissue, resulting in dizziness, weakness and nausea. Effects are avoided by maintaining optimal combustion conditions in the boilers and fire-pit as outlined above, thereby minimising CO emissions.

Sulphur dioxide

Sulphur dioxide is a consideration when coal is used as an alternative fuel source. It can potentially cause respiratory problems, acid rain, and can affect vegetation in industrial areas. However, the likelihood of pure coal being used is very low, due to the amount of waste-wood generated on the site.

Odour

The primary odour would be the smell of smoke from the burning of waste-wood. However, odours are not anticipated to affect people beyond the Taranaki Sawmills site boundary, due to the dispersion achieved by the stacks.

Dust

Dust can arise from many sawmilling activities on the site. To minimise these effects the stacks on boilers are fitted with grit arresters, and dust control occurs on the site with wet suppression of gravel areas. A new dust control product has been trialled recently. The Council has been advised that Taranaki Sawmills are also considering sealing the site in the future.

Nitrogen oxides

Emission of nitrogen oxides may occur as a result of combustion in the boiler units. Nitrogen is also used to raise the boiling point of water; however, closed loop heat exchangers are used, which means the discharge of nitrogen to the environment from this process is anticipated to be very small.

Visibility and visual/aesthetic impacts

Air pollutants, as discussed above, can all contribute to a haze that lowers visibility, and smoke plumes that can raise public concern. Previously, incidents have occurred from inefficient combustion. Taranaki Sawmills have addressed these problems through management procedures as outlined above. Therefore, discharges from the Taranaki Sawmills sites are not expected to impact significantly on visibility, and emissions from the Taranaki Sawmills site should improve with the oxygen trim mechanisms installed on the main stack.

The Taranaki Sawmills site is located in an industrial area, with no residential dwellings in the immediate vicinity. Neighbouring activities are generally light industrial activities.

9.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Taranaki Sawmills Limited holds water discharge permit **2333-3** to cover the discharge of stormwater from a sawmill operating site onto and into land and into the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 11 November 1987 as a water right pursuant to section 21(3) of the Water and Soil Conservation Act 1967. A renewed permit was issued by the Council on 7 February 1996 under Section 87(e) of the RMA, which was renewed again on 8 December 2000. The consent expired on 1 June 2014.

An application to renew this consent was received by Council on 10 February 2014, more than 3 months before expiry. Therefore, as per Section 124 of the RMA, the Council has exercised its discretion, allowing the activity to continue to under the conditions of the expired consent until a decision is made on the renewal.

Special condition 1 requires the consent holder to adopt the best practicable option to prevent or minimise the effects of the discharge.

Special condition 2 requires the Company to maintain a contingency plan.

Special conditions 3 and 4 limit the rate at which stormwater can be discharged from the site and limits particular contaminants that may be present in the discharge.

Special condition 5 limits the effects that the discharge may have on the receiving waters of the Waitaha Stream.

Special condition 6 contains provisions for the review of the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

9.1.3 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Taranaki Sawmills Limited holds air discharge permit **4096-2** to cover discharge of emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open fire-pit. The Council originally issued this permit on 29 July 1992 as a resource consent under Section 87(e) of the RMA. The consent was varied on 14 September 1993 to allow for a second boiler, and was renewed removing the limit on the number of boilers on 27 January 2004. It is due to expire on 1 June 2032.

Special conditions 1 and 2 require the consent holder to adopt the best practicable option to prevent or minimise effects and to minimise emissions and their effects by selection, operation and management of the best practicable equipment and processes.

Special conditions 3 and 4 require that the activity is undertaken in accordance with documentation provided in support of the two renewals of this consent.
Special condition 5 requires consultation with the Council prior to significant changes to the emissions from the site.

Special conditions 6 and 7 contain notification and record keeping requirements that relate to the use of coal as a fuel for the boilers.

Special conditions 8 and 9 relate to the provision and adherence to a management plan for the combustion of materials in the fire-pit.

Special condition 10 requires the Company to keep an incident log.

Special condition 11 prohibits significant adverse ecological effects.

Special conditions 12 to 14 deal with odour and dust considerations.

Special conditions 15 and 16 impose limits on the ground level concentration of sulphur dioxide and particulate matter of less than 10 microns diameter in line with the National Environmental Standard.

Special condition 17 prohibits noxious or toxic levels of contaminants at or beyond the site boundary.

Special condition 18 imposes limits on the emission of dark smoke from the boiler stacks.

Special condition 19 specifies a minimum height for stack discharges.

Special condition 20 gives the circumstances under which the consent may lapse, and special condition 21 contains provision for review of the conditions on the consent.

A copy of the permit is attached to this report in Appendix I.

9.2 Results

9.2.1 Water

9.2.1.1 Inspections

21 August 2013
This site was inspected as part of an investigation undertaken of industries and drainage in the Waitaha catchment after a report that contaminants were discolouring the Waitaha Stream.

Investigation found that some discolouration was occurring on site at Taranaki Sawmills Limited's Bell Block yard. This was discussed with staff on site, and the following action was to be undertaken: assess on site systems and investigate measures that may be implemented to improve water quality prior to discharging to the Waitaha Stream. Ensure that the special conditions in resource consent 2333-3 are complied with.

18 September 2013
A site inspection was carried out in relation to assessing general site compliance.

The discharge locations into the Waitaha Stream were inspected and it was found that only the lower discharge point was actually discharging. The discharge quality appeared to be reasonable with no noticeable effect observed on the receiving waters.

The settling ponds onsite were found to be nearly empty with no likelihood of discharge in the near future.

Logs were found to be stored against the rear boundary of the site adjacent to the Waitaha Stream. It was noted that discharge from this area appears to run overland for a short distance prior to entry into the receiving waters. Although not discharging at the time of the inspection, previous discharges at this location appear to have transported sediment overland towards the receiving waters. The Company was asked to install silt control measures at this location to prevent sediment entering the Waitaha Stream, and also to slow the speed of the discharge at this location.

10 December 2013
This site inspection was carried out in relation to assessing general site compliance.

The stormwater discharge points were inspected. The lowest discharge point (receiving water from the kilns) was discharging. Although some foaming was observed as the water fell into a pond from a pipe on site, this foaming was not observed at other locations further along the discharge drain. The discharge into the Waitaha stream was clean and clear at the time of the inspection.

It was noted that the silt and sediment pits on site appeared to be in a good condition and working well.

Works had been completed near the log store area bounding the Waitaha Stream to allow the discharge of stormwater while preventing erosion and sediment from entering the stream. To accomplish this, a number of new discharge locations had been established and the previous discharge point (receiving water from a large catchment area) had been blocked.

The site appeared to be in a good condition at the time of the inspection.

24 February 2014
This site inspection was carried out as part of the routine compliance monitoring programme. It was found that normal operation activities were occurring on site at the time of inspection.

The stormwater discharge locations around the site were inspected. Very little water was observed leaving the site via the various small tributaries into the Waitaha Stream. The collection points were either not discharging or found to be discharging clean water from site.

9.2.1.2 Results of discharge monitoring

The stormwater discharge from Taranaki Sawmills is sampled from an unnamed tributary of the Waitaha Stream (WTH000059). The headwaters sampling site (WTH000051) is situated in the middle of the sawmill site and emanates from a stormwater drain adjacent to the dry store. This stormwater system drains the sawmill site from between the administration building and the sorting table. However, other inflows to the system have been identified. The monitoring locations are shown in Figure 10.

Discharge sampling was undertaken at two sites (WTH000051 and WTH00059) on up to three occasions, the results of which are presented in Table 23 and Table 24.

Samples were taken of the stormwater discharge from the site in conjunction with a sample run of the Waitaha Stream, tributaries and point discharges within the catchment on 21 January 2014 and 25 June 2014, and of the discharge from the tributary only on 10 June 2014.

Observations and results of the sampling in the Waitaha Stream upstream and downstream of the confluence of the tributary that are relevant to the monitoring of the Taranaki Sawmills site are summarised and discussed in section 9.3.2, with the full receiving water monitoring results presented and discussed in section 15.

The special conditions of resource consent 2333 require that the oil and grease and suspended solids concentrations in the discharge must not exceed 15 g/m^3 and 100g/m^3 respectively, and that the pH shall lie in the range 6.0-9.0. For the purpose of assessing compliance against these limits, Council has previously designated the tributary, just upstream of the confluence with the Waitaha Stream, as the discharge point (WTH000059).

It is noted that the suspended solids concentration at the tributary headwaters during the year under review was below the median of the (limited number of) previous samples from this point during the first survey. However, during the second survey the suspended solids concentration was the highest recorded since the installation of the silt ponds. This indicates that, during the year under review, the silt traps installed on site have been not been as effective in retaining suspended solids as it was during the 2011-2012 year when the sample collected contained suspended solids well below the historical median.

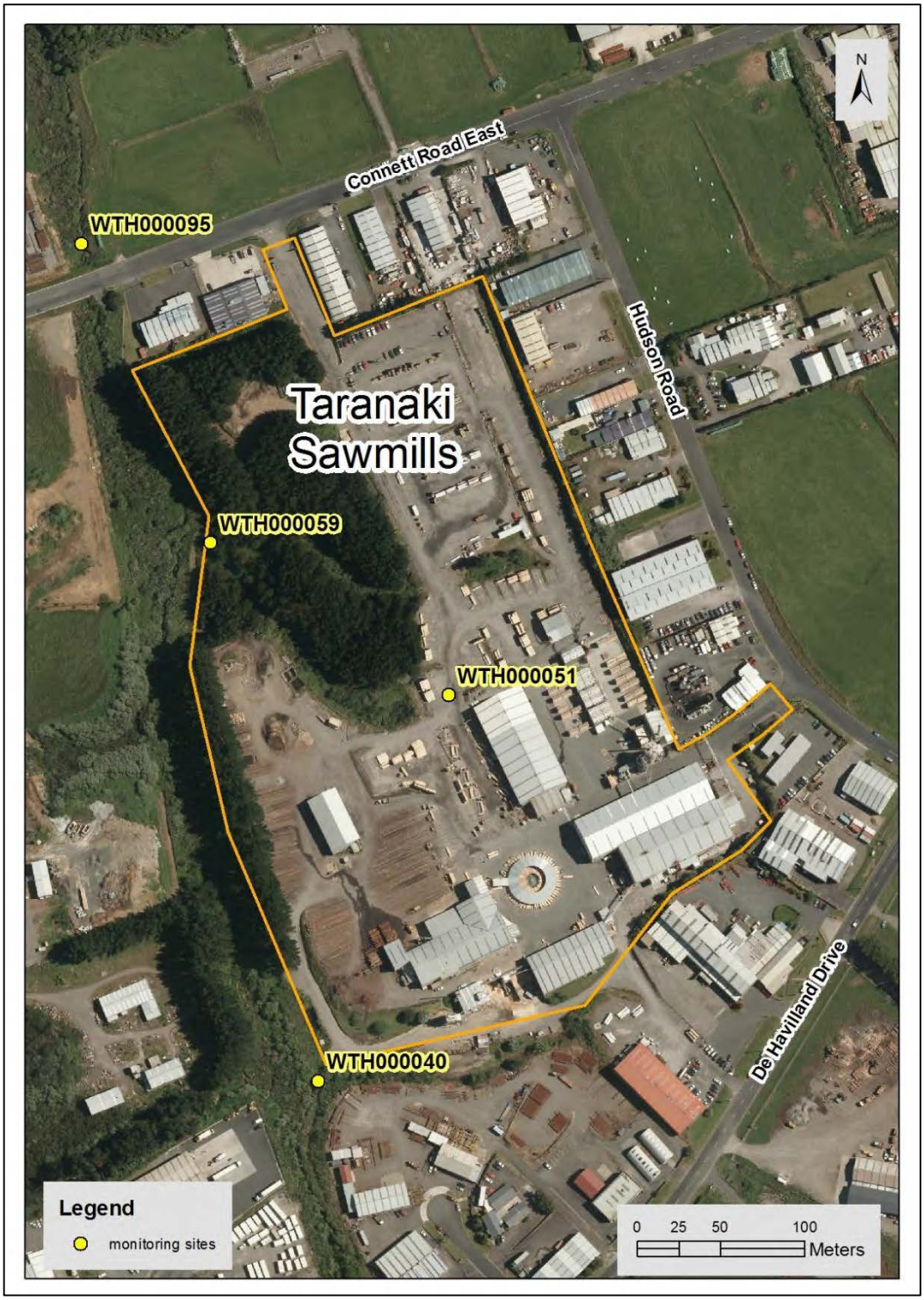

Figure 10 Taranaki Sawmills Limited stormwater and receiving water monitoring sites

Table 23 Results of stormwater sampling at Taranaki Sawmills – tributary headwaters (WTH000051)

Date	Boron (g/m^3)	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m^3)	pH	Suspended Solids (g/m^3)	Temperature (°C)	Turbidity (NTU)
Minimum	0.03	2.9	0.5	6.3	8	11	13
Maximum	0.8	25.4	530	7.7	3600	22.5	1400
Median	0.1	11.6	1.4	6.8	220	14.9	190
Number	30	29	29	30	15	27	15
21 Jan 2014	0.17	11.9	Not visible / apparent	6.6	90	17.3	130
25 Jun 2014	0.09	21.6	Not visible / apparent	7.2	710	12.6	790

Table 24 Results of stormwater sampling at Taranaki Sawmills – tributary upstream of confluence with Waitaha Stream (WTH000059)

Date	Boron (g/m^3)	BOD (g/m^3)	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m^3)	pH	Suspended Solids (g/m^3)	Temperature (°C)	Turbidity (NTU)
Consent limits	-	-	-	*15*	*6 - 9*	*100*	-	-
Minimum	0.08	-	8.6	0.5	5.8	16	12.1	26
Maximum	1.1	-	25.8	110	7	1600	21.5	1300
Median	0.28	-	16.1	0.6	6.6	128	15.4	170
Number	34	-	35	34	36	20	35	17
21 Jan 2014	0.06	6.0	3.8	Not visible / apparent	6.5	100	17.5	120
10 Jun 2014	0.64	17	11.3	Not visible / apparent	6.5	460	14.2	530
25 Jun 2014	0.09	8.1	11.8	Not visible / apparent	6.7	460	14.6	420

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

With the exception of suspended solids on 10 and 25 June 2014, the samples collected at the compliance point (WTH000059) were within the requirements of the conditions of consent 2333-3.
The exceedance of the suspended solids limit on 25 June 2014 was logged as an unauthorised discharge on Council's unauthorised incident register (16 July 2014). An abatement notice was issued early in the 2014-2015 year requiring silt controls to be installed. A follow up inspection found that the required works had been undertaken.

Biochemical oxygen demand is not limited on the Company's consent, however it has been monitored since the end of the 2012-2013 year. The biochemical oxygen demand of the discharge (WTH000059) was found to be above the concentration permitted by Rule 23 of the Regional Freshwater Plan (5 g/m^3) on all three monitoring occasions. A likely source of this contaminant would be wood sugars from degrading wood/bark trapped in the settling ponds, which has the potential to result in the growth of sewage fungus. No sewage fungus was noted in either the Taranaki Sawmill's tributary, or the Waitaha Stream itself, during the year under review. Potential sources and the potential environmental effects of the elevated biochemical oxygen demand in the discharge is to be investigated further during the consent renewal process.

9.2.2 Air

9.2.2.1 Inspections

18 September 2013

A site inspection was carried out in relation to assessing general site compliance. A light easterly wind was noted at the time of the inspection. The kilns were operating, and a small fire was observed in the fire pit near the rear of the site.

Dust monitoring was carried out at various locations about the site boundary with results showing compliance with resource consent conditions.

The ambient suspended particulate results given by the Dust Trak -DRX during this inspection are given in Table 25.

Table 25 Results of ambient suspended particulate sampling at Taranaki on 18 September 2014

Monitoring location	Minimum suspended particulate (mg/m^3)	Maximum suspended particulate (mg/m^3)	Average suspended particulate (mg/m^3)
Reception car park (upwind)	0.59	0.67	0.60
Connett Road East site entrance (downwind)	0.46	1.23	0.59
Waitaha Stream Connett Road East (downwind)	0.67	1.27	0.71

On site inspection found that vehicle traffic about the site was creating dust, however with only a slight breeze, this was largely remaining on site. The gravel areas appeared to be very dry, however the water truck began dampening the surfaces during the inspection.

10 December 2013

This site inspection was carried out in relation to assessing general site compliance. There was a light intermittent westerly wind noted at the time of inspection. Recent period of wet weather meant that dust was not being emitted from the site at the time of inspection. Exposed gravel areas were damp, with the recent rain acting as a natural dust suppressant. Therefore Dust Trak monitoring was not carried out during this inspection.

There were no issues reported in relation to the operation of the fire pit, and it was noted that the site appeared to be in a good condition at the time of the inspection.

24 February 2014

This site inspection was carried out as part of the routine compliance monitoring programme in the catchment. Inspection found that normal operation activities were occurring on site at the time of inspection.

Conditions were calm with only a very slight southerly wind crossing the site during the inspection.

The fire pit was visually inspected and it was found that only non tanalised timber was being burnt within the pit. A small amount of smoke was being emitted at a result of the fire, with the smoke observed to be travelling directly upwards, and not deemed to being having an adverse effect on the surrounding properties.

Timber to be burnt was being piled next to the fire pit allowing the fire to be feed with timber when appropriate, to allow better management of the fire in general.

It was reports that sprinklers had been placed on buildings at various positions about the site, allowing them to be operated when required to manage dust about the site. The inspecting officer was informed that following a successful trail of this system, more sprinklers may be placed about the site in near future.

No dust was observed being emitted from the site at the time of inspection.

9.2.2.2 Results of receiving environment monitoring

Particulates can derive from many sources, including motor vehicles (especially diesels), solid and oil-burning processes for industry and power generation, incineration and waste burning, photochemical processes, and natural sources such as pollen, abrasion and sea spray.

PM_{10} particles are linked to adverse health effects that arise primarily from the ability of particles of this size to penetrate the defences of the human body and enter deep into the lungs. Health effects from inhaling PM_{10} include increased mortality and the aggravation of existing respiratory and cardiovascular conditions such as asthma and chronic pulmonary diseases.

Taranaki Sawmills' air discharge consent limits the maximum ground level concentration of particulate of effective diameter of less than 10 micrometres (PM_{10}) so that it does not exceed 50 $\mu g/m^3$ (one hour average exposure), on more than 5 occasions per year cumulative across any and all monitoring sites, and does not exceed 120 $\mu g/m^3$ (one hour average exposure) at any time, at or beyond the boundary of the site.

In addition to this, in September 2004 the Ministry for the Environment introduced National Environmental Standards (NES) relating to certain air pollutants.
The NES for PM_{10} is 50 $\mu g/m^3$ (24-hour average). This standard must also be met irrespective of any conditions on the Company's consent.

Continuous ambient PM_{10} monitoring was conducted in the vicinity of the Taranaki Sawmills site from 15 April 2014 at 12:45 to 17 April 2014 at 07:45, 7 days after any significant rainfall. The PM_{10} monitor was located off site to the east (Figure 11). A wind rose, illustrating the wind direction and strength, is presented in Figure 12. The PM_{10} data expressed in terms of a 1 hour average, as per the Company's consent condition, is shown in Figure 13, and the time dependant PM_{10} and wind direction data for the period of monitoring is shown in Figure 14.

The PM_{10} monitor was downwind of the activities occurring on the Taranaki Sawmills site for between approximately 65 to 83 % of the time it was deployed. The results show that neither the consent limit of 120 $\mu g/m^3$ (1 hour average), nor the NES standard of 50 $\mu g/m^3$ (24 hour average) were exceeded during the monitoring period. The maximum PM_{10} concentration recorded was 190$\mu g/m^3$ on 15 April 2014 at 17:21. At this time the wind was coming from the northwest, with the monitor down wind of the log yard area.

The highest one hour moving averages were recorded prior to rainfall, between 18:00 and 18:20 on 15 April, when north westerly winds in excess of 15 km/hour were occurring. At this time the PM10 monitor was downwind of the Taranaki Sawmills site. The maximum 1 hour average recorded was approximately 30 µg/m^3.

The higher PM_{10} results were recorded during periods when the wind was from the north and the monitor was directly down wind of the Taranaki sawmills site. There was a total of 76 mm of rainfall recorded at State Highway 3 in the neighbouring Mangati catchment during the monitoring period, and the lower PM_{10} results were recorded during periods when rainfall was recorded.

Figure 11 Location of the Taranaki Sawmills PM_{10} monitoring site during the year under review

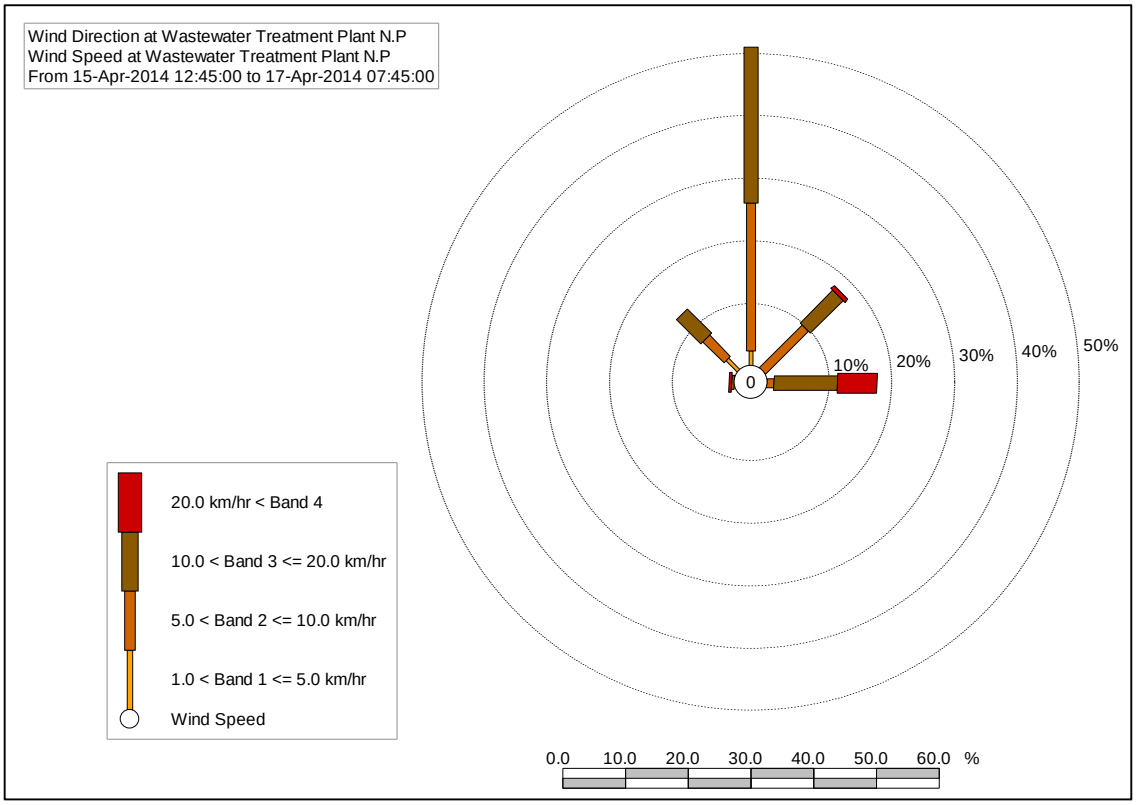

Figure 12 Wind rose illustrating the wind direction and strength over the Taranaki Sawmills PM_{10} monitoring period

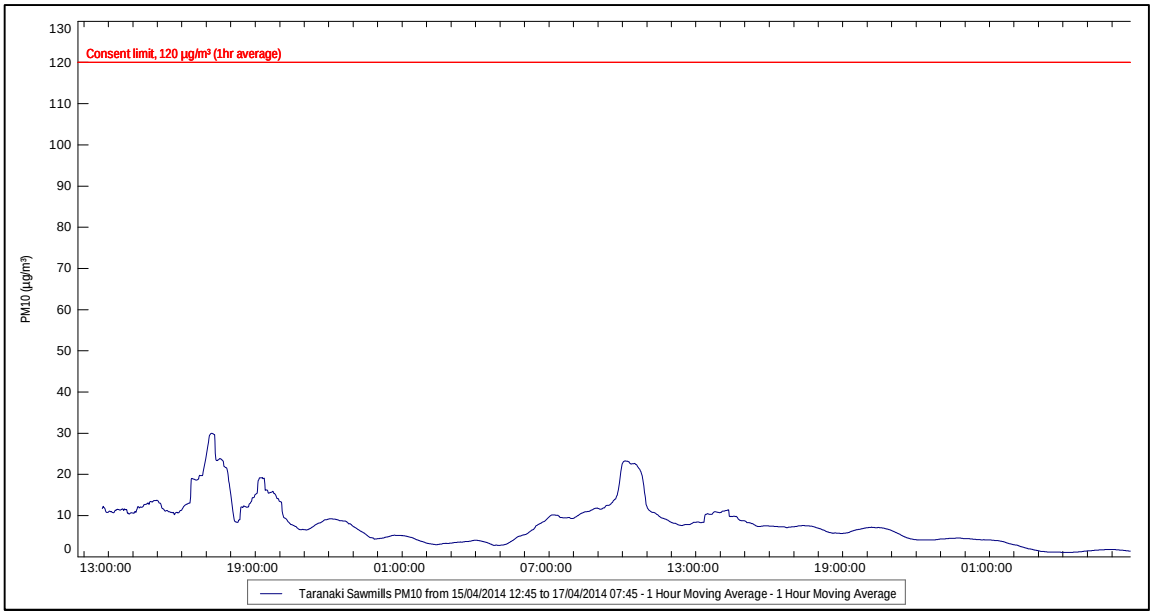

Figure 13 PM_{10} results in the vicinity of Taranaki Sawmills site expressed as a moving 1 hour average

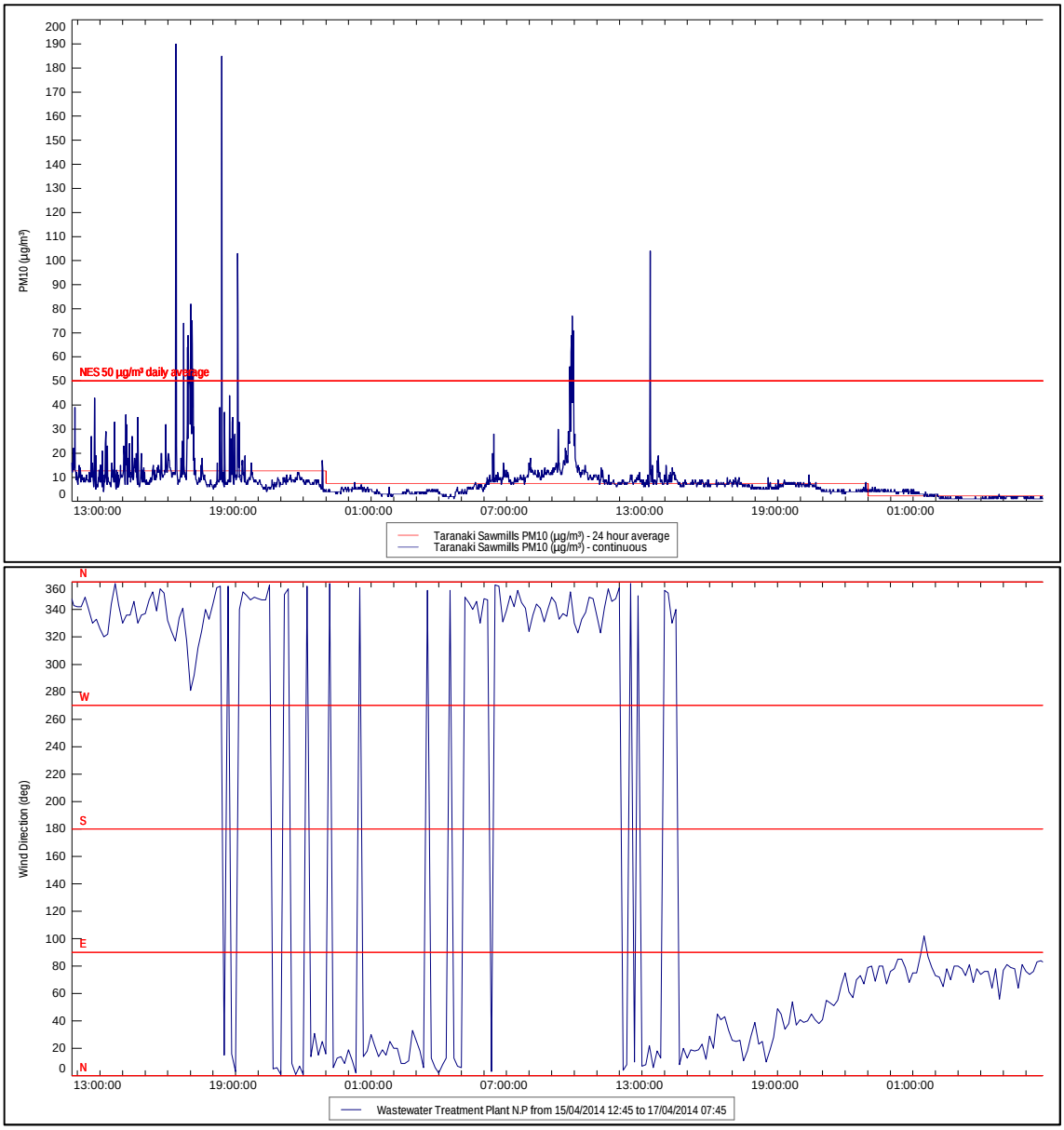

Figure 14 PM_{10}, PM_{10} (24 hour average), and wind direction for ambient monitoring in the vicinity of Taranaki Sawmills site

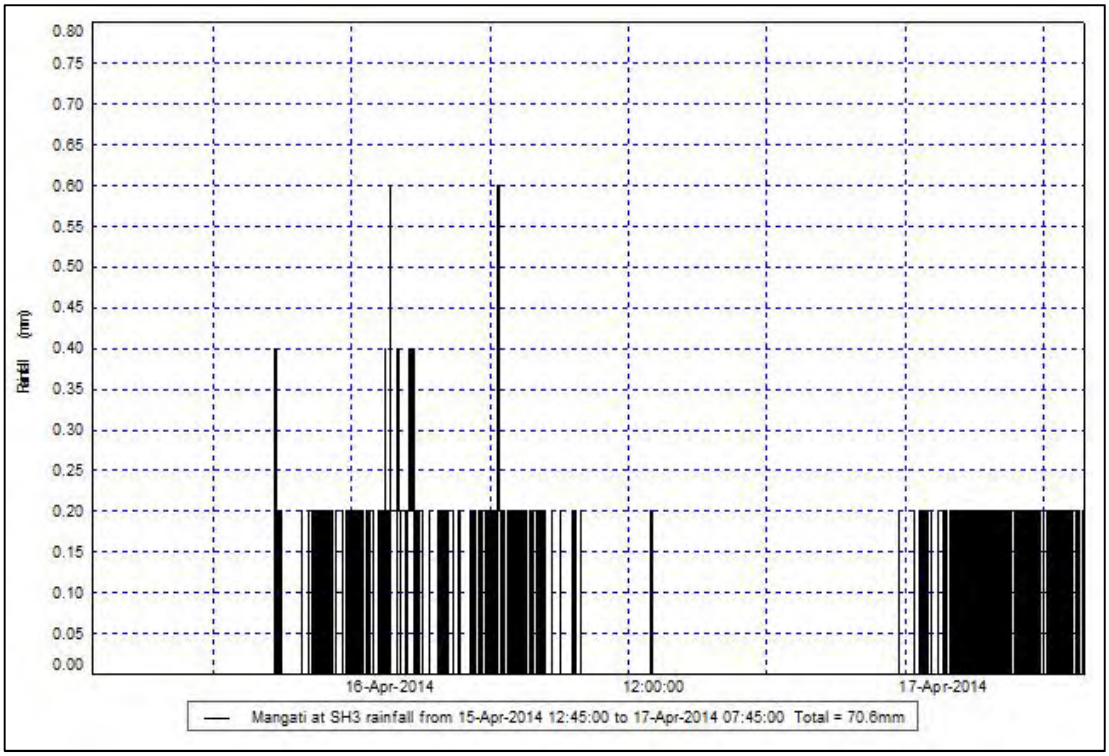

Figure 15 Rainfall recorded at SH3 in the neighbouring Mangati catchment

9.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Taranaki Sawmills Limited's site in the Waitaha catchment. A discharge sample collected during the year under review was found to be non-compliant with consent conditions and was recorded on Council's incidents register.

16 July 2014

Analysis of samples taken during routine compliance monitoring, on 25 June 2014, from Taranaki Sawmills Limited into the Waitaha Stream showed suspended solid levels to be 460 g/m^3. The consented limit on the discharge is 100g/m^3. An abatement notice was issued requiring works to be undertaken to ensure compliance with resource consent conditions at all times. Reinspection found that the abatement notice was being complied with at the time of inspection.

9.3 Discussion

9.3.1 Discussion of plant performance

Management of activities at the site was generally good during the monitoring period, with the exception of issues associated with control of the amount of sediment, and potentially nutrients, being discharged from the site. At the first inspection of the year under review the Company was asked to investigate control measures that could be implemented to improve the quality of the discharges from the site, due to on site discolouration observed. At the second inspection the Company was instructed to install silt controls in the log yard area as it appeared that previous discharges may have carried sediment over land towards the Waitaha Stream. This work was found to

have been carried out at the next inspection, and it was commented that the silt and sediment controls on site were well maintained.

Sampling results in the later part of the monitoring period indicated that the Company needs to increase self monitoring of the silt control structures on site to ensure their effectiveness as two discharge samples collected in June 2014 returned suspended solids results showing that the discharge contained levels that were over four times higher than the permitted concentration.

The three discharge samples collected were found to be compliant with the other contaminant concentrations limited by the consent, however it is noted that all three samples demonstrated elevated biochemical oxygen demand. This contaminant has the potential to support heterotrophic growths in the receiving water, though none were noted in either the discharge channels or receiving water during the year under review. Biochemical oxygen demand is not currently limited by the Company's resource consent, and the issue will investigated further during the consent renewal process.

At inspection it was found that the Company's management of air discharges from the site was good. The Company installed a water sprinkler system to enable proactive control of yard dust at the site. The trial of the system was successful, and the Company was considering expanding the areas of the site serviced by the system.

PM_{10} monitoring found that there were generally low ambient concentrations of these small suspended particulates downwind of the site, especially given the increasing wind strength towards the end of the period of monitoring. There were no offsite effects noted at inspection, nor reported to Council during the year under review. The fire-pit was found to be well managed.

9.3.2 Environmental effects of exercise of consents

There were two breaches of the suspended solids concentration given in the conditions of the Company's stormwater discharge consent during the monitoring period, however no adverse effects were noted in Waitaha Stream at the time of sampling due to turbidity of the receiving water upstream of this discharge.

It is noted that no hydrocarbons were found in the discharges or observed in the receiving waters immediately downstream of Taranaki Sawmills discharge point.

Although the discharge exhibited an elevated biochemical oxygen demand on all three of the monitoring occasions, no sewage fungus was reported to have been present in the stream at the time the sample was collected.

The PM_{10} monitoring indicated the emissions from the site are continuing to comply with consent conditions and national environmental guidelines for particulates, and no smoke, dust or odour complaints were received by Council.

During the year under review there were no adverse environmental effects found as a result of air or water discharges from the Taranaki Sawmills site.

9.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 26 and Table 27.

Table 26 Summary of performance for Consent 2333-3 Taranaki Sawmill's discharge of stormwater onto land and into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and discussion with consent holder	Request for investigation of measures that could be implemented to improve discharge quality. Two breaches of SS and elevated biochemical oxygen demand due to inadequate treatment system. Abatement notice issued
2. Implementation of a contingency plan for action to be taken to prevent spillage	Revised plan reviewed and accepted January 2013	Yes
3. Maximum stormwater discharge rate	Visual assessment during inspection and at sampling	Yes
4. Limits on chemical composition of discharge	Chemical sampling of discharges	Suspended solids limit exceeded in 2 of 3 samples
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
6. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Improvement required Good

Table 27 Summary of performance for Consent 4096-2 Taranaki Sawmill's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and discussion with consent holder	Yes
2. Minimisation of emissions due to control of plant and processes	Inspection and discussion with consent holder	Yes
3. Exercised in accordance with application	Inspection and discussion with consent holder	Yes
4. Boiler and stack operated in accordance with application	Inspection and discussion with consent holder	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Consultation prior to alterations to plant and processes	Inspection and discussion with consent holder	Yes
6. Notification in the event of coal usage for more than 72 hours in 14 days	No notifications received	N/A
7. Records of coal usage	No notifications received	N/A
8. Preparation and adherence to management plan	Observation at inspection	Yes
9. Level of environmental performance for fire-pit to be commensurate with management plan	Observation at inspection	Yes
10. Notification in the event of an incident having offsite effects	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
11. Adverse ecological effects in Taranaki from discharge not permitted	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
12. Objectionable odour at boundary not permitted	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
13. Definition of factors constituting an objectionable odour	N/A	N/A
14. Limits on objectionable suspended or deposited dust	Observation and/or ambient suspended particulate monitoring at inspection	Yes
15. Limit for ground level ambient concentration of sulphur dioxide	Not measured during the year under review. Only applicable when coal is used in the boilers	N/A
16. Limit for ground level ambient concentration of suspended particulate matter <10 microns	Two day deployment of 'Dust Trak' PM_{10} monitor	Yes
17. Noxious or toxic discharges not permitted at boundary	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
18. Limit on duration of emission of dark smoke	Observation of the surrounding area on inspection or when in the area on other business; review of any complaints received by Council	Yes
19. Minimum height of discharge	Observation during inspection. No decrease in stack height	Yes
20. Lapsing of consent	Consent exercised	N/A
21. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

During the year, improvement was required in Taranaki Sawmills level of environmental performance and the Company demonstrated a good level of administrative performance as defined in Section 1.1.5, due to activities relating to the exercise of the Company's stormwater discharge consent.

During the year under review a request was made for the Company to investigate measures that may be implemented to improve stormwater quality following discolouration being observed on site during an inspection. The Company was instructed to install silt controls in the area of the log yard, and was also subsequently abated to install additional sediment controls due to an exceedance of the suspended solids limit on the Company's stormwater discharge consent.

9.3.4 Recommendations from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

THAT the option for a review of resource consent 4096-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

9.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air and water discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

9.4 Recommendation

THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2014-2015 year continues at the same level as programmed for 2013-2014.

10. TBS Coatings Limited

10.1 Introduction

10.1.1 Process description

Abrasive blasting is used to clean and prepare surfaces for painting. The process involves blasting an abrasive substance on to the surface of the object in question. Material from the blasting process becomes airborne due to the release of high pressure air used to accelerate the abrasive media to the required cleaning velocities. Spray painting is also carried out on the site.

Emissions from abrasive blasting operations have the potential to cause nuisance and possible health risks, especially when conducted within populated areas. TBS Coatings Limited (TBS) permanent site is located within an industrial area. The environmental effects of dusts can include loss of visibility, loss of the amenity and aesthetic values of a 'clear sky', irritation to breathing, and soiling of surfaces.

TBS operates an abrasive blasting and spray painting facility at Corbett Road Bell Block. This facility was established in 1974 on a 4.5 ha property situated off Corbett Road in the south-eastern corner of the industrial area of Bell Block, New Plymouth (Figure 1 and Figure 16). It is bounded on two sides by farmland. The nearest domestic dwelling is about 250 metres to the south. The predominant winds are westerly and south-easterly.

Various items, mainly steel, are brought to the site for cleaning by dry abrasive blasting and for the application of protective coatings. Blasting occurs mostly in purpose-built enclosures, within sheds situated on the southern part of the site. The dimensions of the larger enclosure are 19.2 m x 6 m x 6 m. Items too large to fit in the booths are sometimes blasted in a paint-shed on the western part of the site, the shed itself acting as the enclosure. Occasionally, larger items are treated in the open in the yard outside the sheds, following notification to the Regional Council.

Abrasive blasting in enclosed areas is usually performed in the 'blasting booth', where garnet, is now the blast medium, or the 'grit chamber', where angular steel grit is used and recycled, however the garnet, a hard recyclable blast medium, may be used in either area.

Protective coating in enclosed areas is carried out mostly in paint rooms adjacent to the blasting sheds. Both ordinary spray painting and hot metal painting is done. The rooms are ventilated with air extraction systems, for the protection of paint workers. Coatings may also be applied in a shed on the western part of the site.

There are emissions into the air from the operations associated with blasting and coating. The blasting medium is usually dust-free, however after being propelled against surfaces to be treated, clouds of detritus are typically created. Paint fragments, rust particles, and shattered blast media may be carried several hundred metres if air pollution suppression equipment is not used. The paint may contain zinc, lead, chromate, or other chemical species of environmental concern.

The enclosed blasting facilities at this site are designed for control of emissions and recovery of blasting material. The blasting booth is a side draught booth connected to

two dust collectors (both 20,000 cubic feet/minute capacity wet scrubbers) in parallel. The grit chamber is a down draught booth connected to a grit recycling system from which blast debris is extracted to a wet scrubber. The paint shed that is occasionally used for blasting also has an air extraction system and wet scrubber.

When open blasting is performed, the item being treated in the yard is screened as completely as practicable, to contain dust emissions.

The boundaries of the site are screened on all four sides with shelter belts of trees and a filter fabric fence, to reduce passage of wind blown dust onto neighbouring properties. The trees also add aesthetic value. There is a gap, along one third of the northern boundary that is not screened which enables items that are too large to fit through the Corbett Road entrance to be brought to and from the site.

Since December 2007, TBS has predominantly used chilled iron grit, and occasionally garnet, as the blast media. This is cleaned out, screened and recycled daily. Because this generates significantly less waste material than a non-recyclable media, blast debris is no longer disposed of by burial on the site.

Sources of possible air pollution include dust from blasting inside the blasting sheds and in the large metalled yard, and from re-suspension of blast debris and scrubber sludge that has been disposed of on site in the past.

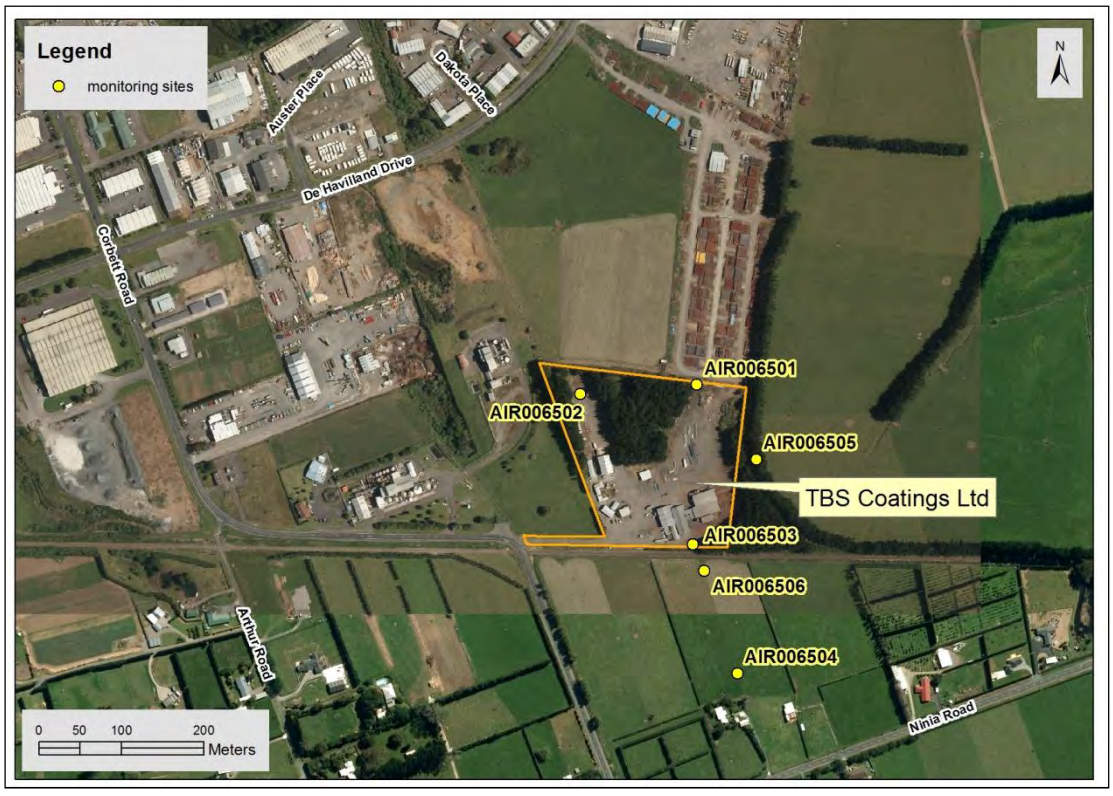

Figure 16 Property of TBS Coatings Limited, and related monitoring sites

TBS also undertakes mobile blasting operations throughout Taranaki. Portable equipment is used for the blasting and coating of fixed structures such as bridges, water tanks, pipelines, buildings and steel structures. Temporary screens are constructed around the items being worked on to contain dust emissions and

depositions, and to restrict the spread of blasting debris. In 1999, TBS started using an 'Enviroblast' lead rated portable dust collector, approved by the New South Wales Environmental Protection Agency, for the treatment of dust emissions where lead paint is being removed. Blast material collected at mobile blasting sites is disposed of by burial at landfills.

Where mobile blasting is to be done in residential or urban areas, the NPDC is given prior notification. In cases where the material to be removed or applied is likely to contain toxic substances such as lead, arsenic, chromium or zinc, Taranaki Health is informed.

10.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

TBS holds air discharge permit **4056-2** to cover discharge of emissions into the air from abrasive blasting operations and associated activities at their permanent site and from mobile abrasive blasting operations at various locations. The Council originally issued this permit to TBS on 6 May 1992 as a resource consent under Section 87(e) of the RMA for mobile blasting only. The consent was renewed on 9 August 2002 and is due to expire on 1 June 2020.

Special condition 1 states that the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the RMA, to prevent or minimise any adverse effect on the environment.

The remaining special conditions on the consent are intended to reduce the quantity, control the quality, and minimise the potential for adverse effects from the emissions from the blasting activities and associated processes. This is achieved by:

- Limiting the locations at which blasting may be undertaken and ensuring that consideration is given to weather conditions (special conditions 2, 4, and 12). In general the blasting must be undertaken within the permanent facilities where the discharge must be contained and treated to meet specific discharge limits (special conditions 9 and 11).
- Ensuring that adequate screening is in place (special conditions 9, 14, and 15).
- Controlling the blasting media used (special conditions 3 and 7).
- Requiring that certain notifications are made and/or permissions sought prior to undertaking blasting when certain "higher risk" blasting activities are undertaken (special conditions 13, 16, 17 and 18). In the case of the Council, this allows for additional requirements to be placed on the consent holder in certain circumstances, and ensures the opportunity for Council to undertake monitoring specific to those activities.
- Limiting the effects at or beyond the boundary of the property in relation to dust and odour issues (special conditions 6, 10 and 19), and surface water quality issues (special condition 20).
- Addressing housekeeping issues (special condition 5).

- Requiring that the consent holder ensures that all operators understand and comply with the conditions of the consent (special condition 8).

10.2 Results

10.2.1 Inspections

10.2.1.1 Site inspections

16 September 2013

It was found that limited activity was taking place on site at the time of the inspection. One dust scrubber was in operation near the railway tracks. Painting was taking place within the sheds on site, and as a result a noticeable odour was present on site. An odour survey was conducted on the railway tracks, and although a slight odour was noticeable, it was inconsistent and considered to be negligible.

As a result of recent rain, the site was damp and hence no dust was observed coming off the exposed gravel in the service and lay-down areas.

There was a slight westerly wind on site at the time of the inspection. A dust survey was completed using the Dust Trak-Drx. An average suspended particulate concentration of 0.78 mg/m^3 was detected at the source location below the dust scrubber outlet, the minimum and maximum values found to be 0.72 mg/m^3 and 0.99 mg/m^3 respectively.

A background dust survey undertaken provided an average ambient suspended particulate reading of 0.67 mg/m^3, with a minimum and maximum of 0.59 mg/m^3 and 0.90 mg/m^3 respectively.

It was found that the only chemical stored outside was a diesel tank. This was equipped with a large steel bund, which is emptied when required.

10 December 2013

It was found that usual business activities were taking place on site at the time of the inspection, with both dust scrubbers in operation. Both blasting and painting activities were taking place on site.

Inspection occurred following a period of wet weather, so no dust was been emitted from the general gravel areas at the site. It was noted that the recent rain was acting as a natural dust suppressant.

It was reported that the dust scrubber closest to the train tracks had been cleaned out approximately three weeks ago, and at the time of inspection it was found to be working well, with little sign of dust being emitted.

The scrubber at the opposite site of the site was in operation and some dust was being emitted. The dust emissions were believed to decrease as the machine calibrated, however this was to be monitored by staff on site to ensure this occurs.

The general site condition appeared to be clean and tidy. The fuel tank was fully bunded with approximately 30-40 cm of free board remaining. The inspecting officer was informed that this would be sucked out in the coming days.

A slight odour was noted in the immediately vicinity of the spray booth, however this quickly dissipated, and was not noted closer to the site boundary.

The Dust Trak-DRX was not used during this inspection as the device was currently unavailable.

24 February 2014
This site inspection was carried out as part of the routine compliance monitoring programme for this catchment. At the time of inspection blasting was occurring within the designated sheds on site. Both dust scrubbers were in action on site.

The Dust Trak - DRX was used to measure dust emissions from site, and these were found to be within consent conditions.

At time of inspection the weather conditions were calm with little to no wind present on site. Any dust being generated on site was found to be heading upwards and was not travelling off site.

No odours were noted on site during the inspection.

It was noted that this inspection was conducted following an extended period of dry weather. The Company was asked to continue to monitor dust emissions from site especially during periods of fine and windy weather.

20 June 2014
All booths were in operation at the time of inspection. There were no odours or discharges of abrasive materials noted. It was reported that the extraction fans/filters working well. It was suggested to site staff that some silt traps be installed in ring drains as discussed. Otherwise, the site was considered to be neat and tidy.

10.2.1.2 Mobile blasting inspections

23 April 2014
A mobile blasting inspection was carried out following notification that the Company would be undertaking blasting on Taranaki marina pontoon piles. It was found that the worksite involved that sand blasting and painting of the two first anchor piles of the Port Taranaki small boat floating marina. TBS had completely enclosed the pile and constructed a working platform. The blasting work had been completed and the blast medium and detritus was being cleaned up. There was some remaining on the work platform, and the Consent holder was asked to recover all of this with vacuuming. TBS staff advised that they would get a compressed air vacuum and do this. The Company was informed that a follow-up inspection would be conducted either later that day or the following morning

24 April 2014
A follow-up inspection was undertaken to confirm that the requested works had been carried out. It was found that all blast medium and detritus had been cleaned up, and work was commencing on preparing the second pile for blasting and erecting the enclosure. It was reported that the works were being carried out in a satisfactory manner at the time of inspection.

10.2.2 Results of receiving environment monitoring

Many industries emit dust from various sources during operational periods. In order to assess the effects of the emitted dust, industries have been monitored using deposition gauges.

Deposition gauges are basically buckets elevated on a stand to about 1.6 metres. The buckets have a solution in them to ensure that any dust that settles out of the air is not re-suspended by wind.

Gauges are placed around the site and within the surrounding community. The gauges were deployed in the vicinity of the TBS site on two occasions during the year under review, with the samples processed from the second run only. The contents of the gauges from the first deployment of gauges (in November 2013) had to be discarded, as they were heavily contaminated with brown beetles.

The rate of dustfall is calculated by dividing the weight of insoluble material (grams) collected by the cross-sectional area of the gauge (metres^2) and the number of days over which the sample was taken. The units of measurement are grams/metre^2/day (g/m^2/day).

Guideline values used by the Council for dust deposition are 4 g/m^2/30 days or 0.13 g/m^2/day deposited matter. Consideration is given to the location of the industry and the sensitivity of the surrounding community, when assessing results against these values. However, TBS have a condition on their consent that limits the dust deposition rate beyond the boundary of their property to 4 g/m^2/30 days.

Material from the gauges was sifted to remove any incidental organic debris and insects, and then analysed for solid particulates.

The number and position of deposition gauges is governed by the location of potential dust emission sources, the direction of predominant winds, and the position of sensitive areas in the surrounding environment. The sites monitored for TBS's facility are shown in Figure 16 and site descriptions are given in Table 28.

Table 28 TBS Coatings Limited - particulate deposition monitoring sites

Site code	NZTM Coordinates	Location
AIR006501*	1701416E – 5678078N	NE boundary, outside white gates - near scrubber sludge disposal area
AIR006502	1701275E – 5678067N	Inside boundary. Yard in NW corner, N of secondary blasting shed
AIR006505	1701488E – 5677988N	E boundary, at gap in shelter belt opposite blasting shed, near spent media disposal area
AIR006503*	1701411E – 5677885N	S boundary, outside fabric screen at railway line
AIR006504	1701465E – 5677729N	Paddock beside house of nearest neighbour, ~ 150m S on Ninia Road

*It is noted that sites AIR006501 and AIR006503 were moved from just inside the boundary to just outside the boundary fence prior to the start of the 2006-2007 year.

Site AIR006502 is positioned inside the property boundary screenings, and so the consent limit and guideline cannot be applied. However, measurements made at this site are useful for determining the potential for offsite effects and for assessing the source of particulates. The consent limit and guideline is applicable at sites AIR006501, AIR006503, AIR006504, and AIR006505.

Results of the monitoring for the 2013-2014 year are given in Table 29, with a summary of historical data.

Table 29 Deposition gauging results for sampling sites around the TBS Coatings Limited location in 2013-2014

Site	Sample	Date	Number of days	Deposited particulate g/m²/day	Deposited particulate g/m²/30days	Volume Litres
AIR006501	TRC148713	7-Jan-14 to 28-Jan-14	9	0.24	7.2	1.4
	Summary for data 1993-June 2013	min	8.9	0.01	0.3	0.76
		max	42	0.68	20	9.8
		median	28	0.06	1.8	1.96
		number	24	34	34	22
AIR006502	TRC148714	7-Jan-14 to 28-Jan-14	21	0.11	3.3	1.4
	Summary for data 1993-June 2013	min	8.9	0.01	0.3	0
		max	42	0.68	20	10.9
		median	28.5	0.06	1.8	2.76
		number	26	34	34	23
AIR006503	TRC148715	7-Jan-14 to 28-Jan-14	21	0.04	1.2	0.8
	Summary for data 1993-June 2013	min	8.9	0.01	0.3	0.35
		max	42	2.0	60	8.82
		median	28.1	0.12	3.6	2.06
		number	25	34	34	22
AIR006504	TRC148716	7-Jan-14 to 28-Jan-14	21	0.04	1.2	1.2
	Summary for data 1993-June 2013	min	8.9	0.01	0.3	0.47
		max	42	0.16	4.8	9.11
		median	28	0.04	1.2	2.05
		number	25	34	34	22
AIR006505	TRC148717	7-Jan-14 to 28-Jan-14	21.0	0.77	23.1	1.6
	Summary for data 1993-June 2013	min	8.9	0.03	0.9	0.68
		max	42	4.2	126	9.31
		median	28	0.2	6	2.34
		number	25	34	34	22

Results in bold indicate exceedance of the guideline values (and consent limit) at AIR006501, AIR006503, AIR006504 and AIR006505

The monitoring found that the deposited particulate collected at three of the monitoring locations at or beyond the site boundary complied with special condition 10 of consent 4056 (0.13 g/m²/day), with the on-site gauge returning a result that was below guideline.

Although there was some vegetation present in the material collected in AIR006501, the amount was not considered to be significant. The material collected had an appearance that is typical of dust re-suspended from metalled yards.

As with the previous year, the majority of the material collected on the filter from site AIR006505 had a soil like appearance, rather than having the grey or pink colourations that would be typical of yard dust or garnet blasting debris. It is noted that the paddock on the eastern boundary of the site is used for cropping.

These observations indicate that the majority of the material collected in the non-complying deposition gauges was likely to have been from activities not related to blasting, however the consent exceedance at AIR006501 may be as a result of vehicle movements in the yard.

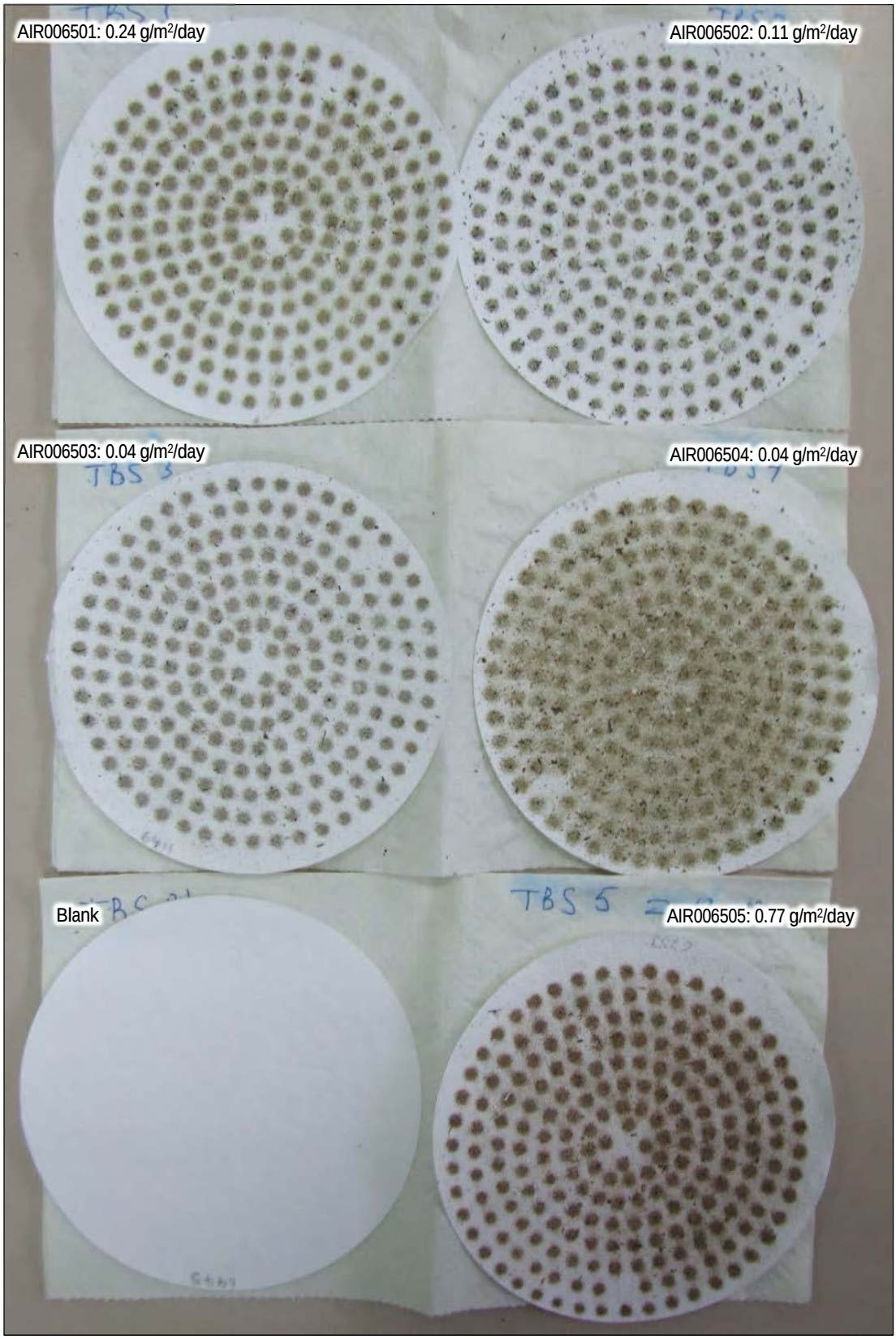

Photo 9 TBS Coatings Limited deposition gauge filters 2012- 2013 survey

10.2.3 Investigations, interventions, and incidents

In the 2013-2014 year there was one complaint received by Council in relation to air emissions from the site. The complaint was not substantiated at the time of inspection.

29 August 2013
At 9:20 AM complaint was received regarding dust being generated from the TBS site on Corbett Road, Bell Block. A site inspection was undertaken in relation to the complaint. It was reported that heavy rain had been falling prior to and during the site visit. The investigating officer was informed that work on site had begun at approximately 6:00 that morning with all three dust scrubbers working. There was no outside work taking place on site, other than machinery moving equipment about the sheds. This was producing some exhaust fumes as a result. It was observed that some dust was being generated around the dust scrubbers, however this was not visible above the roof lines of the nearby sheds. The site was also inspected from Ninia Road and no dust was visible at the site.

It was reported that there were no off-site effects noticeable visually as a result of the site activities. Site activities were compliant with resource consent conditions at the time of the inspection.

10.3 Discussion

10.3.1 Discussion of plant performance

Site inspections found that the permanent blasting facilities were kept in a good state of repair and the treatment systems were found to be well maintained.

10.3.2 Environmental effects of exercise of consents

Atmospheric particulate matter can arise from a number of sources, both natural and from human activity e.g., vegetation pollens, smoke and ash, sea spray, dust from soils and paved surfaces, and manufacturing processes. While extremely fine particles may remain floating in the atmosphere for weeks or months, coarser dusts may settle out within timeframes ranging from a few seconds to minutes.

The amount of dust and detritus generated at any industrial site is influenced by many factors. From past results of deposition gauging it is likely that factors including seasonal weather variations, vehicle traffic about the site and the type of work being conducted will have some effect on the results.

Abrasive blasting operations have the potential to create adverse effects on health and the environment as well as creating nuisance. The impact that sandblasting has is determined by the type of abrasive used (e.g. is it sand that is dust free with low silica content), the procedures followed by staff when blasting outside the blasting room (e.g. temporary screening), and the items blasted (e.g. with coatings such as lead-based paints or larger rusted areas resulting in generation of extra detritus).

The environmental effects of dusts include loss of visibility, loss of the amenity and aesthetic values of a 'clear sky', irritation to breathing, and soiling of surfaces. It has been found that background rates of dust deposition in rural areas of New Zealand are typically 0.1-1.5 g/m^2/30 days, while in urban areas rates are generally higher, in the

range of 0.6-3.0 g/m^2/30 days. From experience, rates above 3-4 g/m^2/30 days tend to lead to complaints by neighbours over the objectionable or offensive nature of dust emissions from particular sources.

Deposition gauging was conducted around the TBS site for the 35th time during the 2013-2014 monitoring year.

The gauging period from 7 January to 28 January 2014 was quite wet, with a total of 46 mm of rain. There were only 12 days with less than 0.5mm of rain, and the longest period without any rainfall was three days. The strongest winds recorded were recorded from the east.

Historical monitoring (Figure 17) has shown that particulate deposition rates in the vicinity of TBS have been quite variable. During the year under review three of the five sites were below the consent limit (or guideline value in the case of the on-site gauge).

The particulate deposition rates measured in the gauge just outside the northern boundary (AIR006501) was twice the consent limit. This monitoring location was down wind of the TBS Coatings Limited site for approximately 51 % of the gauging period. The appearance of the material collected in this gauge is consistent with re-suspended yard dust.

The gauge east of the site (AIR006505) gave the highest particulate deposition rate, and was downwind of the TBS Coatings Limited site for approximately 42 % of the time. The appearance of the material collected on the filters during the analysis of the samples from this site is not consistent with material from the abrasive blasting site, or yard dust and is more consistent with soil (Photo 9). It is noted that the paddock to the east of the TBS site, in which this gauge is located, is used for cropping, and there were strong easterly winds from the east on a day without rainfall, the day before the gauges were retrieved.

It is also noted that there are now a number of paddocks in the vicinity of the site that have little, if any, vegetative cover at times during the summer period.

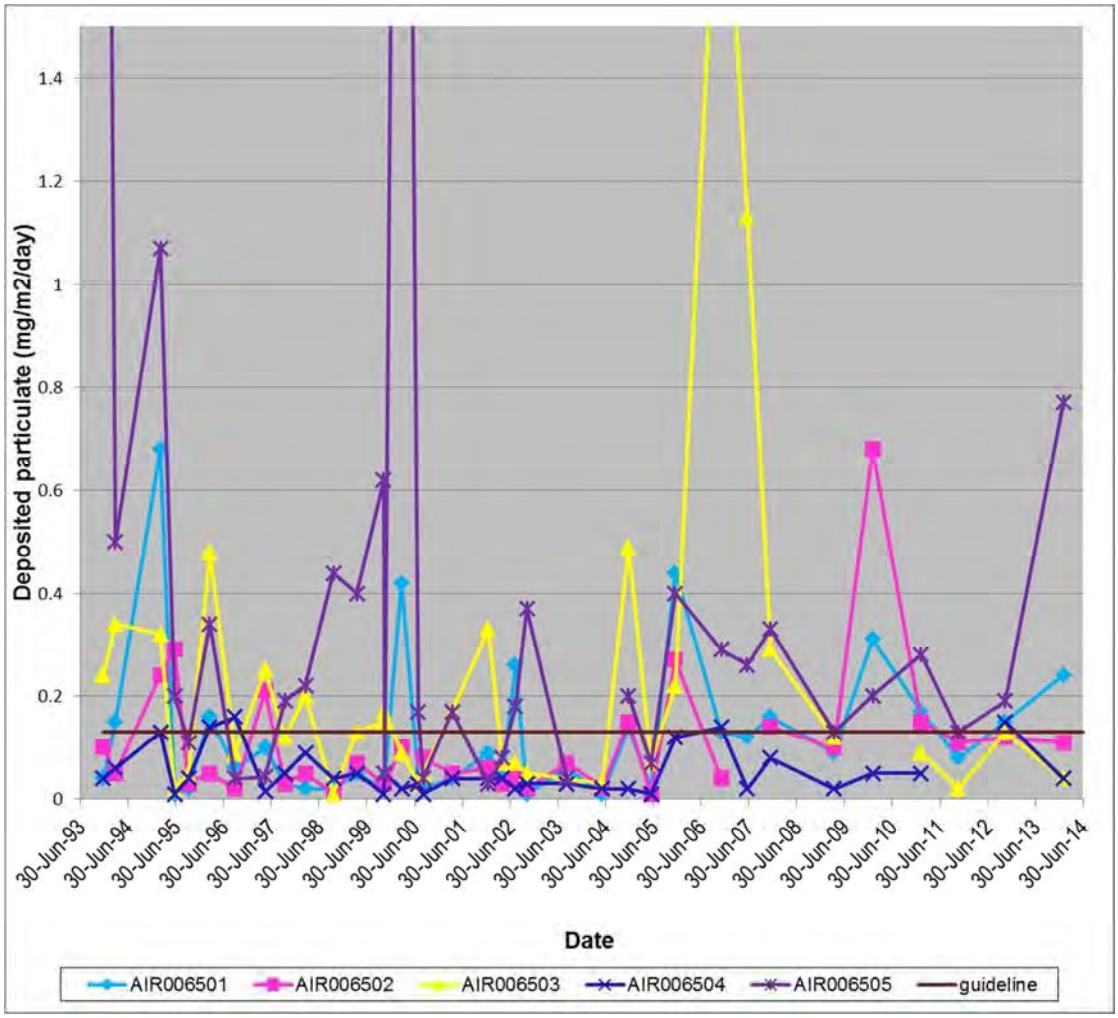

Figure 17 Deposition gauge monitoring in the vicinity of TBS Coatings, December 1993 to June 2014

A comparison of the deposition gauge data against the guideline and consent limit over time is shown in Figure 18. This shows that in recent years there have generally been two or three gauges exceeding guideline, however it has generally been considered to be as a result of organic material, or other off site sources.

Figure 19 shows that exceedances are more likely to occur at site AIR006501 (on the north eastern boundary) or at site AIR006505 (on the eastern boundary). During the year under review it is considered that the deposited particulate collected at AIR006505 is likely to be as a result of off site sources, however there is likely to be a contribution from TBS yard dust at site AIR006501.

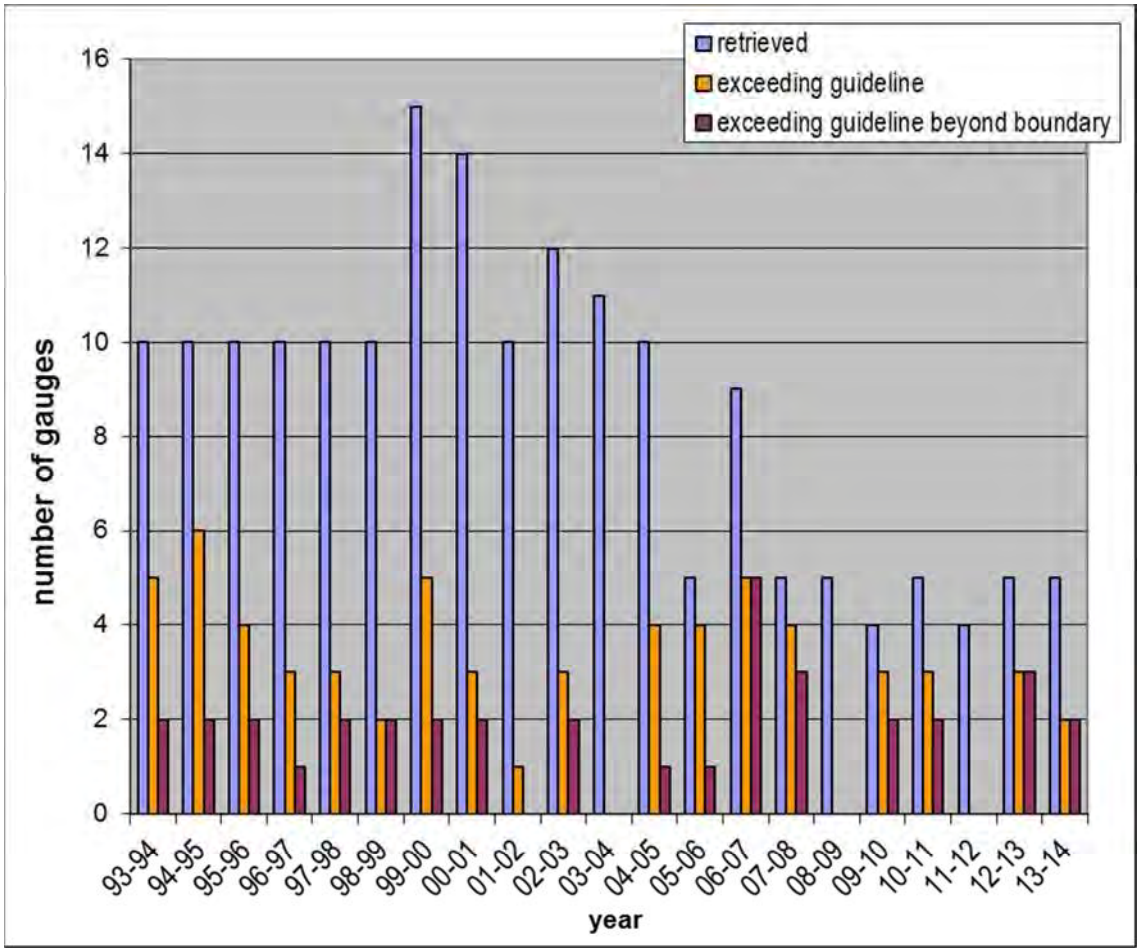

Figure 18 Summary of TBS deposition gauge guideline and consent exceedances by year

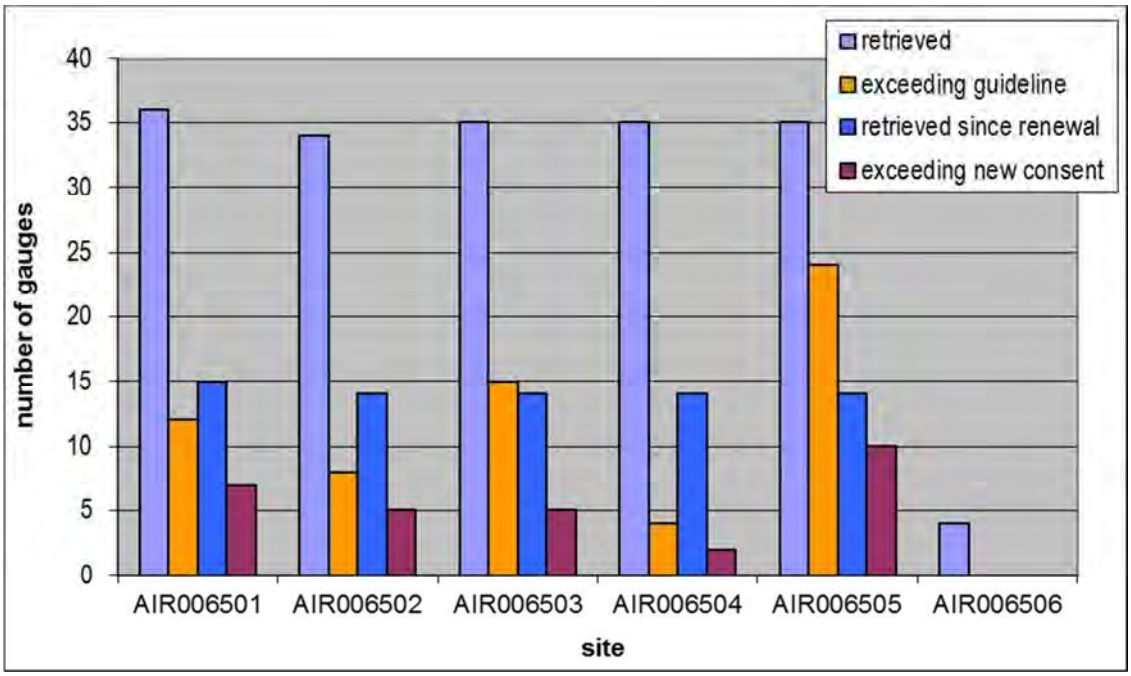

Figure 19 Summary of TBS deposition gauge guideline and consent exceedances by site

Although there was one complaint received regarding air quality issues in the vicinity of the site, this could not be substantiated at the time of inspection.

It is also noted that there were no complaints received during the 2013-2014 gauging period.

10.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 30.

Table 30 Summary of performance for Consent 4056-2 TBS Coating's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects on the environment	Inspection and discussion with consent holder	Yes
2. Blasting in enclosed facility	Inspection and discussion with consent holder	Yes
3. Sand to have low active silica content and percentage of fine particles	Sand not used during the year under review	N/A
4. Consideration of wind conditions to minimise of off-site emissions	Inspection. No substantiated complaints received	Yes
5. Clearance of blasting material	Inspection	Yes
6. Offensive and objectionable odours and dust beyond boundary not permitted	Inspection and incident investigation	Yes
7. Avoidance of dry sand blasting for yard and mobile blasting	Inspection and liaison with Company.	Yes
8. Compliance of operators with conditions	Inspection	Yes
9. Treatment of emissions prior to discharge at permanent facilities	Suspended particulate monitoring at inspection	Yes.
10. Dust deposition rate limit beyond boundary	Deposition gauge monitoring	Exceedance in 2 of 4 off site gauges, likely to be a contribution from yard dust in one of these
11. Maximum concentrations of lead, chromium and zinc	Not measured. Discussions with consent holder about materials blasted	N/A
12. Infrequent allowance of yard operations	No notification of yard blasting received. No yard blasting found at inspections	Yes
13. Notification prior to yard operations	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No yard blasting noted during year under review	N/A
14. Screening to contain emissions	No yard blasting noted during year under review	N/A
15. Screening of items to be blasted	Inspection	Yes
16. Notification to DC prior to blasting in urban areas	No urban mobile blasting noted during the year under review	N/A
17. Notification to TRC prior to blasting in close proximity to water course	Notifications received	Yes
18. Written TRC approval and notification of affected parties prior to blasting close to boundaries	No mobile blasting close to boundaries during the year under review	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
19. Ambient suspended particulate limit for public amenity areas	No mobile blasting at public amenity areas noted during the year under review	N/A
20. Effects on surface water bodies not permitted	Inspection	Yes
21. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Good
Overall assessment of administrative performance in respect of this consent		High

N/A = Not applicable
TRC = Taranaki Regional Council
DC = District Council

During the year, TBS Coatings Limited demonstrated a good level of environmental and high level of administrative performance with the resource consents as defined in Section1.1.5.

One dust complaint was received, but this was not substantiated at the time of investigation. However, an exceedance of the dust deposition rate was observed in one of the five gauges deployed, which was likely to be a result of re-suspended yard dust. Improved control over this aspect of the Company's environmental performance is desirable.

10.3.4 Recommendations from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2013-2014 year continues at the same level as in 2012-2013.

THAT the option for a review of resource consent 4056-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

10.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

10.4 Recommendation

THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2014-2015 year continues at the same level as in 2013-2014.

11. Weatherford New Zealand Limited

11.1 Introduction

11.1.1 Process description

Weatherford New Zealand Limited (Weatherford) has a 1.7 ha yard on Dakota Place for storage and maintenance of drill pipe, down-hole tools and other miscellaneous equipment used in the oil industry. New casing and drill pipe is cleaned to remove protective grease, which until the 1980's contained some copper and zinc, and a high proportion of lead. Kerosene is brushed onto the threads and the oil/kerosene mix is washed off with a water blaster. Kerosene is only used when oil and grease can not be removed by water alone. A phosphate bath is used for the etching of pipes in the lower yard. Minor amounts of waste from this process may be discharged to the stream via the lower wash pad interceptor. During the year under review it was identified that the phosphating chemical used also contains nickel and manganese.

There are two wash pads at the site. The wash pad in the upper catchment drains to a small three stage interceptor which discharges onto land just over 50 metres from the tributary. There is no bunding around either of the wash pads, so a significant volume of stormwater from the upper and lower yards flows through the interceptors during rainfall events.

The wash pad in the upper yard has not been used for washing purposes for a number of years.

The larger wash pad in the lower yard drains via an in-ground pipe to a three stage interceptor on the bank of the unnamed tributary. The pipes overhang the wash pad slightly, so a moveable catchment facility has been installed to capture wash water at the end of the wash pad to avoid discharge on to land. This wash pad is used for the majority of the wash down that occurs at the site.

The property slopes towards the Waitaha Stream where it runs along the western boundary and towards the the unnamed tributary that runs along the northern boundary. The site is mostly metalled, with only the wash pad areas sealed. There is little constructed drainage at the site and the majority of the stormwater flows overland straight into the Waitaha Stream or the tributary.

Photo 10 Weatherford New Zealand Ltd site - view from the northern corner

11.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Weatherford New Zealand Limited holds water discharge permit **4775-1** to cover the discharge of up to 180 L/s of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream. This permit was originally issued to Austoil Drilling Services Pty Limited for the discharge of treated stormwater by the Council on 5 September 1995 under Section 87(e) of the RMA. A variation to consent was granted on 30 June 1997 to also allow for the discharge of minor treated washdown water onto land. The permit was transferred to Weatherford on 15 April 2002. It was reviewed in August 2008 for the purpose of ensuring that the special conditions of the consent were adequate to deal with potential adverse effects of the discharge on the receiving environment. Consent 4775-1 expired on 1 June 2014.

An application to renew the consent was received on 29 November 2013. Council requested that the Company provide further information that, in summary, was required to better identify:

- The number and location of the discharge points,
- The nature and concentrations of the contaminants that may be present in the discharge(s) as a result of historical and on-going activities on the site,
- A consideration of alternatives, including the feasibility of directing the waste water to trade waste.

As the renewal application was received more that 6 months before the expiry of the existing consent, under Section 124 of the RMA, the Company can continue to operate under the terms and conditions of the expired consent until a decision is made on the renewal application. The special conditions of the consent are summarised below.

Special condition 1 places limits on the quality of the discharges. There is an oil and grease limit of 25 g/m^3 for the interceptor discharging to land and 15 g/m^3 for the stormwater and wash water to the Waitaha Stream.

Special condition 2 requires the construction of bunding.

Special condition 3 limits the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 4 contains review provisions.

Special condition 5 requires the provision of a management plan to ensure that the consent holder is operating activities at the site in a manner that is consistent with the best practicable option to minimise contamination in the discharges from the site.

A copy of the permit is attached to this report in Appendix I.

11.2 Results

11.2.1 Inspections

16 September 2013

Inspection found that no washdown activities were taking place on site. The site was generally clean and tidy. All chemicals were stored within a lockable storage container equipped with an internal bund/catchment tray. Some minor spills were observed around the entrance to the storage shed, however it was apparent that efforts had been made to clean these up.

It was found that there were two separators on site. It was reported that the separator that collects wash water from the upper cleaning area was not currently in use, and the inspecting officer was informed that there were no intentions to use this wash down area in the near future. The lower separator was located on the banks of the Waitaha Stream and was being used on a frequent basis, collecting and treating wash water received from the on-site wash pad.

A hydrocarbon sheen was observed on the water surface within the separator, however this decreased as the water moved through the separator, with only a small light sheen noticeable in the last section of the treatment system. The separator was not discharging at the time of the inspection, and it was noted that there were no visual effects in the stream or on the banks as a result of recent discharges.

The washdown area was clean and tidy with no signs of visible contaminants migrating off the washpad in to the general operation area of the business.

10 December 2013

It was reported that this site inspection was carried out as part of a routine monitoring programme. Inspection found that no washdown activities were taking place on the site at the time of the inspection, however the inspecting officer was informed that the lower wash down area was still used on a daily basis.

It was noted that although two separators remain on site, the wash pad in the top area of the site, from which the washings would be directed to a separator and discharge on to land on site, was not currently being used for cleaning purposes. The second separator, located near the stream, remained in use and collected washings from the pipe cleaning area. The separator was inspected and found to be working well. The majority of hydrocarbons were being captured in the first chamber, with only a light hydrocarbon sheen visible on the surface of the third chamber. The inspecting officer was informed that the separator was being cleaned out every other Friday to ensure that the discharge was within consent limits.

Hazardous substance store was found to be a lockable steel container with an internal bund system. This was clean and tidy at the time of the inspection.

The pipe cleaning area was in a good tidy condition at the time of inspection, with no sign of hydrocarbons being tracked off site.

The site was clean and tidy with evidence that weeds about the site had recently been sprayed.

The stream was visually inspected and found to be running clean and clear.

13 February 2014
It was reported that this site inspection was completed as part of routine compliance monitoring. Inspection found that the site was in clean and tidy order. All chemicals were stored within a locked steal container with an internal bund. The bund was inspected and found to be containing some spills, but it was considered that the bund was not in need of a clean out at this stage.

Empty drums were found to be stored outside the chemical storage container, however they were stored upright with the lids in place. It was considered that the manner of storage was secure enough to prevent any spillage or leakage into the surrounding environment.

The pipe cleaning area was in operation at time of inspection with all washdown water being captured and directed to the lower oil separator for treatment prior to discharge.

It was found that the separator was discharging at time of inspection and samples were taken to ensure compliance with resource consent as per the monitoring programme.

The top separator was not discharging at the time of inspection.

5 June 2014
It was reported that this site inspection carried was out as part of routine compliance monitoring.

Inspection found that no washing of drill pipe was taking place at the wash bay. The area around the wash bay was found to be reasonably clean and tidy, however the Company was asked to ensure that if any spills of washwater are observed off the concrete pad, that it is remedied immediately. There was some staining of the soil present about this area that suggests that there have been spills in the past.

Both interceptors were inspected and found to be largely free of hydrocarbons. The inspecting officer was informed that the interceptors were currently being sucked out on a fortnightly basis. The third stage of the interceptor was found to be approximately half full at the time of the inspection.

It was noted that the general site was found to be clean and tidy. It was observed that a large quantity of plastic drill caps were stored on site. It was noted that these had oil and grease present on the threads and were a likely source of contamination during periods of wet weather. This was brought to the attention of staff on site at the time of inspection.

Staff were also spoken to about the high hydrocarbon and suspended solid sampling results from a previous sampling round. It was recommended that the interceptor be more actively managed, especially during periods of wet weather. It was also recommended that silt and sediment controls be put in place to treat the stormwater leaving the site.

11.2.2 Results of discharge monitoring

The discharge to the tributary of the Waitaha Stream from the lower interceptor (TRC site code IND002031) and the discharge to land from the interceptor servicing the top

wash pad (IND002021) are sampled as part of this programme. Stormwater runoff from the yard area (STW002025) was also sampled during the year under review.

The results for the sampling undertaken in the 2013-2014 year are presented in Table 31, Table 32 and Table 33, along with a summary of historical data.

Special condition 1 of resource consent 4775 requires that the oil and grease concentration of the discharge to the Waitaha Stream tributary must not exceed 15 g/m^3, the oil and grease concentration of the interceptor discharge to land must not exceed 25 g/m^3, the pH of all discharges must be in the range 6.0 – 9.0, and the suspended solids concentration of all discharges must not exceed 100 g/m^3.

The programme provided for the interceptors to be checked, and sampled if they are discharging. Recent changes in management practices at the site associated with the interceptors have meant that the interceptors are emptied frequently (fortnightly) due to the issues that the Company had been experiencing in meeting the required water quality standards on the consent, particularly the oil and grease limit. As a result, the interceptors should discharge very infrequently.

During the period under review one sample was taken of the discharge from the upper interceptor, four samples were collected from the lower interceptor discharge, and two samples were collected from the overland flow discharging to the unnamed tributary.

Table 31 Results of sampling at Weatherford New Zealand Ltd – upper interceptor to land (IND002021)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m^3)	Dissolved reactive phosphorus (g/m^3-P)	Oil & Grease (g/m^3)	Acid soluble lead (g/m^3)	pH	Temp (°C)	Acid soluble zinc (g/m^3)
	-	-	-	*25*	-	*6-9*	-	-
Minimum	5.9	0.01	0.003	0.5	<0.05	6.2	10.3	0.644
Maximum	23	0.03	30.6	120	<0.05	7.6	19.5	1.81
Median	9.7	0.02	0.006	14	<0.05	7.2	12.5	0.983
Number	21	7	19	27	7	21	20	7
21 Jan 2014[a]	-	-	-	-	-	-	-	-
14 Feb 2014[a]	-	-	-	-	-	-	-	-
10 Jun 2014[a]	-	-	-	-	-	-	-	-
25 Jun 2014	4.3	<0.01	<0.003	Not visible / apparent	<0.05	7.3	13.3	0.621

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a Not discharging at the time of the sampling survey

The samples from the upper interceptor onto land showed that this discharge was in compliance with consent conditions at the time the surveys were undertaken. That the system was discharging on only one of the four sampling occasions also indicates that the interceptor was being emptied regularly.

The acid soluble zinc concentration found in the discharge was a new minimum for this monitoring location.

It is noted that the wash pad draining via this interceptor is no longer in use, and there is also only a limited amount of activity that occurs in this area of the site that has the potential to result in stormwater contamination.

Phosphating has been carried out exclusively at the lower washpad area for a number of years.

Table 32 Results of sampling at Weatherford New Zealand Ltd – lower interceptor to tributary (IND002031)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m^3)	Dissolved reactive phosphorus (g/m^3-P)	Oil & Grease (g/m^3)	Acid soluble lead (g/m^3)	Acid soluble manganese (g/m^3)	Acid soluble nickel (g/m^3)	pH	SS (g/m^3)	Temp (°C)	Acid soluble zinc (g/m^3)
Consent limits	-	-	-	*15*	-	-	-	*6-9*	*100*	-	-
Minimum	1.4	0.02	0.012	0.5	0.05	0.46	0.05	6.8	11	9.6	0.167
Maximum	25.5	0.62	35.6	71	0.14	2.5	0.13	8.0	49	19.2	2.00
Median	12.1	0.10	0.41	33	0.02	0.88	0.06	7.0	26	15	0.374
Number	33	7	32	38	7	3	3	34	9	30	7
21 Jan 2014[a]	16.7	0.16	1.04	9.5	0.10	0.92	0.06	7.1	-	18.4	0.322
14 Feb 2014[a]	19.8	0.07	1.65	26	0.12	1.25	0.06	7.0	29	20.3	0.224
10 Jun 2014[a]	18.1	0.08	0.647	13.0	0.12	-	-	7.0	26	14.0	0.142
25 Jun 2014	13.3	0.06	0.063	6.2	0.06	-	-	7.0	19	13.0	0.246

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a Not discharging at the time of the sampling survey

The samples from the lower interceptor showed that, with the exception of oil and grease on 14 February 2014, the discharge from this source into the unnamed tributary were in compliance with consent conditions at the time the surveys were undertaken.

Although there was one non-compliant oil and grease result obtained, it is noted that the oil and grease results obtained during the year under review were below median. The non-compliance was discussed with the consent holder at the following inspection.

Dissolved reactive phosphorus results were generally above median.

Table 33 Results of sampling at Weatherford New Zealand Ltd – stormwater overland flow to stream (STW002025)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m^3)	Dissolved reactive phosphorus (g/m^3-P)	Oil & Grease (g/m^3)	Acid soluble lead (g/m^3)	Acid soluble manganese (g/m^3)	Acid soluble nickel (g/m^3)	pH	SS (g/m^3)	Temp (°C)	Acid soluble zinc (g/m^3)
	-	-	-	*15*	-			*6-9*	*100*	-	-
Minimum	0.1	0.01	0.003	0.5	0.05	0.57	0.02	6.4	6	10.2	0.082
Maximum	19.8	0.05	0.061	3	0.05	0.77	0.02	8.1	420	21.3	0.736
Median	5.7	0.01	0.008	1.5	0.02	0.67	0.01	6.8	60	15.2	0.353
Number	17	11	18	18	11	2	2	18	14	18	11
21 Jan 2014	2.7	0.03	0.009	<0.5	0.10	0.02	<0.05	7.1	130	19.0	0.661
25 Jun 2014	10.1	0.04	0.004	<0.5	-	-	<0.05	7.1	140	13.6	1.08

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

The stormwater discharge from the site was found to comply with component concentrations given in the consent on all occasions, with the exception of suspended solids in both samples.

This was logged as an unauthorised discharge, and the Company was asked to install silt controls.

11.2.3 Investigations, interventions, and incidents

In the 2013-2014 year, it was necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Weatherford New Zealand Limited.

During the year under review there were a total of three consent exceedances, one of which was registered as an unauthorised incident on Council's unauthorised incidents register.

16 July 2014

Analysis of a stormwater sample taken during routine compliance monitoring, on 25 June 2014, found that the suspended solid result had exceeded resource consent limits at the discharge point. Although the exceedance was minor and the discharge had no environmental impacts on the stream, the Company had been asked to install silt controls earlier that month in response to the elevated suspended solids concentration found in the stormwater sample collected on 21 January 2015. At the time of sampling, no silt controls were present. A letter requesting explanation was received and accepted.

11.3 Discussion

11.3.1 Discussion of plant performance

Inspections found that the housekeeping at the site was generally of a high standard and operations were well managed. At the final compliance monitoring inspection of the year, the Company was made aware of the potential for stormwater contamination from greasy plastic end caps that were being stored outside.

During the year under review, the site was visited on a total of seven occasions for inspections and/or sampling. A discharge was found to be occurring from the upper interceptor on one occasion and from the lower wash pad interceptor on four occasions. When these discharges were sampled they were found to be compliant with consent conditions with the exception of oil and grease in the discharge from the lower interceptor to the tributary on one occasion. The Company was asked to manage the interceptor more actively.

Although there was one breach of the oil and grease limit found during the year under review, the results were all below the historical median, indicating improved management of the interceptor. However, further improvements are still required.

The overland flow of stormwater to the tributary was sampled on two occasions, with two suspended solids consent exceedances found. The Company was asked to install silt controls.

As a result of a letter from Council requesting further information during the consent renewal process, the Company engaged a consultant to undertake further investigations regarding the contaminants that might be present in the discharges from the site and the options for minimising the potential for adverse effects.

At the end of the year under review the Company was investigating the feasibility of diverting the wash water from the lower wash pad to sewer, and limiting the catchment area around the lower wash pad by redirecting stormwater from cleaner areas of the site currently draining through this system.

11.3.2 Environmental effects of exercise of consent

Observation of the Waitaha Stream and its tributary during inspection and sampling found no significant effects in the receiving water related to the Weatherford discharges. There were two exceedances of the suspended solids limit found in the overland flow of stormwater to the tributary that flows between the Weatherford and Taranaki Sawmills sites. On both occasions the turbidity of the tributary was found to be elevated, but an increase in the turbidity of the Waitaha stream itself was found on 21 January 2014. On this occasion, it was noted at the time of sampling, that the Waitaha Stream was turbid at the De Havilland Drive sites. As a result the further increase in turbidity found downstream of the Weatherford's site would have had only a minor, short term effect, at most, due to the conditions prevailing at the time of sampling.

11.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 34.

Table 34 Summary of performance for Consent 4775-1 Weatherford New Zealand Ltd discharge of treated stormwater and washdown water onto land and into stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Chemical sampling	Exceedance of oil and grease in 1 of 7 discharge samples and suspended solids found in 2 of 6 samples of discharging to the tributary
2. Construction of bunding	Site inspection	Yes
3. Discharge cannot cause specified adverse effects beyond mixing zone	Inspections and chemical sampling	Yes
4. Optional review provision re environmental effects	Consent reviewed in 2008, no further opportunities for review	N/A
5. Preparation and maintenance of stormwater management plan	Review of documentation submitted to Council	Yes
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		Good Improvement desirable

N/A = not applicable

During the year, the Weatherford New Zealand Limited demonstrated a good level of environmental performance, however an improvement is required in relation to the administrative performance with the resource consents as defined in Section 1.1.5.

Although there was one exceedance of the oil and grease limit and two exceedances of the suspended solids limit on the consent, there would have been no significant environmental impact. The Company was however, asked to manage the lower interceptor more actively and to install silt controls to treat stormwater from the site.

11.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

This recommendation was implemented.

11.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for water discharges in the region, the Council has taken into account the extent of information made available

by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

11.4 Recommendation

THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2014-2015 year continues at the same level as programmed in 2013-2014.

12. Woodwards 2008 Limited

12.1 Introduction

12.1.1 Process description

The site is located at 124 De Havilland Drive, Bell Block; approximately 6.5 km east of New Plymouth city centre. The surrounding land use is predominantly industrial or trade premises; there is also pasture bordering the site to the east which is currently used for grazing livestock.

The open fire-pit is located at the eastern side of the site approximately 75 metres south of De Havilland Drive (Figure 20); industrial premises are currently located to the north, west and south. The closest industrial premises are approximately 115 metres north of the fire pit across De Havilland Drive.

The Waitaha Stream flows through a pipe underneath the site and resurfaces on the Northern side of De Havilland Drive.

Figure 20 Woodwards 2008 Limited's property and fire pit location

The Company generates wood wastes as a result of the firewood business operating from the site. The wastes include timber blocks, bark and sawdust.

The Company aims to burn the wood wastes daily, as they are generated, to prevent the waste from becoming saturated, which would make the potential for offsite effects harder to manage. The effects are managed by taking into account wind direction and strength and by also taking into account the ratio of dry to wet material within the pit, before it is lit.

The material incinerated in the open-pit is untreated timber off-cuts/sawdust. No tanalised timber wastes or plastics are incinerated.

There are a number of potential contaminants that are discharged into the air from the combustion of wood products, however in this case these are primarily:

- particulates
- odour and dust
- carbon monoxide

There are also aesthetic effects to be considered.

Particulates

The combustion of wood in the fire-pit may release particulate matter, and it is the fine particles that can adversely affect health. However, the following management practices are implemented to ensure the fire-pit is used efficiently, thereby minimising the potential for any effects:

- supervision during burning;
- using only dry waste-wood for incineration;
- loading only small quantities into the fire-pit;
- using the fire-pit during certain conditions/times of the day;
- Other operative procedures such as visual monitoring of smoke emissions, and staff training / awareness of environmental obligations.

Odour

The primary odour associated with the activity would be the smell of smoke from the burning of waste-wood. However, odours beyond the boundary will not be offensive or objectionable if the operation is managed sensibly.

Carbon monoxide (CO)

CO is produced from the incomplete combustion of wood, and it can adversely affect human health by reducing the amount of oxygen transported to body tissue, resulting in dizziness, weakness and nausea. Effects are avoided by maintaining optimal combustion conditions within the fire-pit.

Aesthetics

Air pollutants as discussed above can contribute to a haze that lowers visibility and raises public concern. With proper management the fire-pit is not expected to impact significantly on visibility.

In summary, provided the activity is conducted in accordance with the recommended special conditions, no significant effects are anticipated.

12.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Woodwards 2008 Limited holds air discharge permit **7881-1** to cover discharge of emissions into the air from he combustion of untreated timber wastes. This permit was

issued by the Taranaki Regional Council on 17 August 2011 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

There are 9 special conditions attached to the consent.

Special condition 1 requires the Company to adopt the best practicable option having regard to particular aspects of the management of the operation and wind conditions.

Special condition 2 restricts the material that can be combusted to untreated timber only, and limits the proximity of the fire pit to the property boundary.

Special condition 3 prohibits objectionable or offensive odours beyond the property boundary.

Special condition 4 requires that the activity is supervised at all times and limits the time of day at which the fire may be lit.

Special conditions 5, 6, and 7 control dust deposition, ambient suspended particulates and noxious or toxic contaminants beyond the property boundary.

Special condition 8 is a lapse condition.

Special condition 9 contains provisions for review.

A copy of the consent is attached in Appendix I.

12.2 Results

12.2.1 Inspections

16 September 2013

Site Inspection found that the business was undertaking normal operations at the time of the inspection.

There was no burning occurring on site at the time of inspection. The fire pit was inspected, and only untreated timber was noted within the pit. The inspecting officer was informed that the fire was last lit on Thursday the previous week.

It was reported that staff were well aware of the consent conditions regarding what materials can be burnt and the consideration that must be given to wind direction.

There were no issues identified at the time of inspection.

26 November 2013

Inspection found that normal operational activities were taking place on the site at the time of inspection.

It was observed that the fire pit had been excavated and re-defined since the previous inspection, however it was noted that its general location remained the same.

The fire pit was inspected and only untreated and dry timber was found to be present. The inspecting officer was informed that the fire had not been lit since the previous

week. It was reported that staff were waiting for the wind direction to be right prior to lighting it again.

The Company was informed that it was pleasing to note that staff were aware of their obligations with regard to wind speed and direction before burning material onsite.

No issues were identified at the time of inspection.

13 February 2014
Inspection found that the fire pit remained in the same position on site as per previous inspections. It was reported that the fire had last been lit yesterday, under appropriate wind conditions.

It was found that the fire pit was clean and free of any material. It was noted that staff were well aware of what can be burnt in the pit, and that attention must be given to weather conditions when deciding whether to light a fire on site.

It was reported that no complaints had been received by Council in regards to this activity on site.

12.2.2 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the activities of Woodwards 2008 Limited.

12.3 Discussion

12.3.1 Discussion of plant performance

The site was found to be well managed during the year under review. No prohibited wastes were found in the fire pit, and staff were found to be well aware of the requirements of the consent with regard to permitted materials and taking wind conditions into consideration before commencing exercise of the consent.

12.3.2 Environmental effects of exercise of consent

No adverse environmental effects were found during the year under review.

12.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 35.

Table 35 Summary of performance for Consent 7881-1, Woodward 2008 Limited's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option. Controls over management practices and consideration of wind conditions	Inspection and discussion with consent holder	Yes
2. Combustion of only untreated wood and wood wastes. Fire pit 20 m from boundary	Inspection and discussion with consent holder. Observation of materials in fire pit	Yes
3. Offensive and objectionable odour at site boundary not permitted	Odour surveys during inspection	Yes
4. Supervision of fire. No fires to be lit after 12 noon.	Inspection and observation while council officers in the area	Yes
5. Maximum dust deposition rate of 0.13 /m^2/day	No visible dust emissions reported at the time of inspection. Deposition rate not measured	N/A
6. Maximum suspended particulates of 3 mg/m^3	No visible dust emissions reported at the time of inspection	Yes
7. Prohibits noxious and toxic levels of contaminants beyond the boundary	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes
8. Consent lapses if not exercised by 30 Sept 2016	Consent exercised	N/A
9. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

N/A Not applicable or not assessed

During the year, Woodwards 2008 Limited demonstrated a high level of environmental and high level of administrative performance with the resource consents as defined in Section 1.1.5.

12.3.4 Recommendations from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

THAT the option for a review of resource consent 7881-1 in June 2014, as set out in condition 9 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

12.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

12.4 Recommendation

THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2014-2014 year continues at the same level as programmed in 2013-2014.

13. Zelam Limited

13.1 Introduction

13.1.1 Process description

Zelam Limited (formerly Taranaki NuChem Ltd) (Zelam) has manufactured a range of specialised chemical products for the agricultural, horticultural and timber industries at a plant in the Bell Block industrial estate, New Plymouth since 1992. The size of the operation is small and many of the processes are considered to be unprofitable for the larger chemical companies to undertake.

Zelam manufactures a range of chemicals that include 18 plant protectants and growth promotants, 23 herbicides, seven insecticides, seven additives (surface active agents), four sanitation products, and ten wood protection fungicides.

Production is largely by formulation (blending active ingredients and other agents), and the production is based on batch processes (i.e. not continuous).

Three wet scrubbers are the only significant point sources that discharge emissions directly to air. Other processes discharge into the buildings.

A generalised description of the processes is as follows:

Blending with no heat: Process equipment includes an enclosed mixing vessel fitted with a mechanical stirrer and a bottom liquid take-off through a pump. Products formed include biocides and plant growth promotants. These products result from blending operations at ambient temperature. It is claimed there are no air flows or discharges to the air. A minor quantity of water is used in washing and this water is substantially trapped and retained for make-up in the next product run.

Blending with some heat: Products include biocides and wood preservatives. The operation is blending; in the case of the biocides heated with an electrical element to around 60 C. The preservatives are heated by electrical element to about 90 C. There are no air flows, but some discharges to air from the heating of benzalkonium chloride. This vapour is trapped by the hood over the vessel which is connected to a water trap. The system is designed so that all vapours, which are predominantly absorbed water and benzalkonium chloride with some benzyl chloride, dissolve in this trap. Liquid wastes from washing equipment are of the order of 40-60 litres maximum, all of which is retained and returned as make-up for the next run.

Flowables: Process equipment includes an enclosed mixing vessel fitted with a mechanical stirrer and a bottom liquid take-off through a pump to a bead mill. The air space of the mixing vessel is ventilated to a dust trap before discharge to atmosphere within the working space.

The Taratek fungicides are formulated in this process. This blending operation is done at ambient temperature. Air flows during the process are minimal but during extraction of the powdered actives from their drums, and during addition to the mixing vessel, some dust is created.

This is contained by a canopy hood over the mixing vessel and by placing a slotted hood at the lip of the raw material container. A mobile bed spray scrubber is used as make-up water for the next batch. Air volumes are low and set appropriately to suction off all dust laden air at source. Water waste is primarily washdown water, up to 60-80 litres which is retained and used as make-up water.

The only significant discharges to outside air from the plant are from three wet chemical scrubbers, one for the fungicide production shed and one for the insecticide production shed. The third one is a small scrubber for the encapsulation plant in shed five. This scrubber only runs for up to one hour per week and contains no biocides. There are also minor emissions to air from two laboratory fume cupboards and from a wood chip machine.

The gas streams entering the scrubbers contain water vapour, trace amounts of benzyl chloride, and dust. Benzyl chloride is a suspected carcinogen, a lacrimator (irritates mucous membranes), and is potentially corrosive.

Two of the scrubbers are "forced draft" scrubbers which treat the discharges from the insecticide and fungicide manufacture (Shed 2 scrubber), and herbicide manufacture (Shed 3 scrubber). The gas streams entering these scrubbers contain water vapour and small amounts of dust from the actives ingredients going into the blend. The Company has a procedure in place for the preparation and monitoring of the liquor for these scrubbers to ensure that the consent requirement to maintain the scrubber liquor at a pH of greater than 9 is satisfied. At the time this consent was granted, emissions from the quaternising process were treated by one of the forced draft scrubbers. The main driver for this pH requirement was for the effective treatment (hydrolysis) of the benzyl chloride emissions. An additional scrubber was installed during the 2008-2009 year that was dedicated to the quaternising process, which is no longer undertaken at the site. The pH requirement was retained for the "forced draft' scrubbers, as many of the other actives that might accumulate in the scrubber liquor are deactivated at this pH.

During the year under review, the Company consulted with Council regarding the installation of a new granulation plant at the site, in which a microencapsulated active ingredient would be mixed with a dispersant and inert medium, prior to extrusion, spherification and drying. Council was advised that the air streams from the mixing process would be either directed through a cyclone and baghouse prior to treatment through a wet scrubber, or would be directed directly to the wet scrubber. The gas streams from the dryer would be extracted through a cyclone and baghouse prior to treatment through a wet scrubber. An application to vary the Company's consent was received by Council, however after further consultation the application was withdrawn. Council considered that the proposed activity, with the proposed treatment systems in place, was not be substantially different from the existing activities at the site, and that this new process would be within the conditions of the current consent, with no additions or amendments necessary at this time.

13.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Zelam Limited holds air discharge permit **4059-5** to cover discharge of emissions into the air from industrial agri-chemical formulation processes and associated activities. The Taranaki Regional Council originally issued this permit to Taranaki NuChem Limited on 8 February 1995 as a resource consent under Section 87(e) of the RMA. The consent was renewed on 20 December 2000, was transferred to Zelam Limited on 30 November 2006, and renewed again on 13 February 2008 with the same purpose and conditions as consent 4059-4. An application to vary the consent was received on 24 August 2009 to better reflect the monitoring and control of an improved emission abatement system already in place for the control of benzyl chloride emissions. The varied consent was issued on 1 September 2009. It will expire on 1 June 2026.

The changes to consent related to the amendment of special conditions 7 and 8 to clarify that these conditions related only to the forced draft scrubbers, and the insertion of two new conditions relating to the control and monitoring of the liquor used in the air displacement scrubber (resulting in the renumbering of the following conditions).

Special condition 1 requires that the consent holder adopts the best practicable option to minimise emissions from the site.

Special condition 2 requires consultation with the Council prior to significant changes to operations at the site that may alter the quantity or nature of contaminants emitted from the site.

Special conditions 3 and 11 (formerly condition 10) limit effects and contaminant concentrations at or beyond the boundary of the site.

Special conditions 4 and 5 limit the concentration of contaminants in the discharge.

Special condition 6 requires the Company to keep an incident log.

Special condition 7 controls the pH of the liquor in the "forced draft" scrubbers, and special condition 9 controls the free amine concentration of the "air displacement "scrubber so that they continue to be effective.

Special conditions 8 and 10 require the Company to monitor the pH of the "forced draft" scrubber liquors and the free amine concentration of the "air displacement" scrubber liquor.

Special condition 12 (formerly condition 10) contains a provision for reviewing the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

13.2 Results

13.2.1 Inspections

16 September 2013

Site inspection found that the business was operating its usual practices at the time of inspection. All three dust scrubbers were inspected, and although none were working at the time of the inspection, there was no sign of silt/dust etc about the outlet of the scrubbers.

The biofilter beds inspected were working well at the time of the inspection. One bed was undergoing maintenance, while the remaining beds were in use. All beds were saturated, or damp to some degree, at the time of the inspection. A slight odour could be noted when standing immediately downwind of the beds, however this smell had dissipated prior to the site boundary.

It was noted that a storage tank was located on site to contain waste herbicide to allow optimum use of the biofilter beds and allowing the storage of waste during periods of wet weather, when the biofilter beds are less able to cope with large volumes of waste.

It was reported that waste water from the fungicide shed is irrigated across the lawn at the rear of the property via a soak hose. It was observed that there were some patches of burnt grass visible, however it was noted that these areas appear to re-grow quickly.

It was reported that the site was bunded, with various stormwater valves located across the site, allowing for the containment and isolation of the site should a spill occur.

There were no issues identified at the time of the inspection.

26 November 2013
Site inspection found that business was in full operation, and that the inspection coincided with a busy production period for Zelam.

All chemicals located outside were found to be stored in sealed containers and placed in a location where any spill was able to be contained on site by the use of the stormwater isolation system that is installed throughout the premise.

The biofilter beds were in use, with one bed being out of operation for maintenance purposes. It was reported that the biofilter beds are double skinned, with staff monitoring between the skins to ensure the integrity of the system.

It was found that the biofilter beds appeared to be getting used evenly, with no odour detected about the beds. It was reported that the dust scrubbers on site appeared to be operating as required.

It was noted that fungicide was irrigated across the lawn at the rear of the property via a soak hose. A couple of spots of dead grass were identified during the inspection. This was a result of an employee using a knife to create large holes in the pipe to prevent blockages. This resulted in a heavy application of fungicide to certain areas of lawn. The soak hose has since been replaced, and a more suitable application has now been achieved.

No issues were identified at the time of inspection.

24 February 2014
This site inspection was carried out as part of the routine compliance monitoring programme. Inspection found that normal operational activities were occurring on site at the time of inspection.

It was noted that the fungicide irrigated on the property did not visually appear to be causing significant detrimental effects on the grassed area on which it was spread.

4 June 2014
This site inspection was undertaken as part of routine compliance monitoring.

Inspection found that the business was conducting normal operations at the time of inspection.

All biofilter beds were in use and appeared to be working as designed. The biofilter bed on the lower portion of the site had some liquid captured between the inner and outer biofilter bed impermeable lining. It was noted that staff were to pump this liquid back into the bio-bed and monitor the containment cavity to ensure that there was no leaking from the biofilter bed. It was noted that rainwater was able to enter this cavity during specific rain and wind conditions.

There were no signs of damage to the grass as a result of a recent application of fungicide plant wash onto the area.

It was noted that the new granulation plant had arrived on site, however it was not yet assembled.

It was found that some empty containers had been stored outside, near the rear of the site, within the concrete pad area which has its run-off controlled by a storm water shut off valve. Staff were spoken to on site and were advised that they are to ensure that all containers are stored with lids in place, and any open topped containers are stored upright and disposed of immediately.

All dust scrubbers were found to be in operational order, however they were not operating at time of inspection as no agri-chemicals were being manufactured within the sheds at the immediate time of inspection.

13.2.2 Results of receiving environment monitoring

Prior to site inspections the inspecting officer conducts a survey around the plant perimeter to check for any off-site odours, visible emissions or evidence of effects on the foliage of plants in the vicinity of the site.

16 September 2013
An odour inspection was completed about the boundary of the site and no odours were noted. There were visible emissions noted coming from the plant.

26 November 2013
An odour inspection was carried out about the perimeter of the site. A slight intermittent chemical odour was noted at the front entrance of the property, however this was considered to be slight, intermittent and not objectionable.

No odour was detected at the rear property boundary near the biofilter beds.

24 February 2014
It was reported that wind conditions were calm, with only a very slight southerly wind crossing the site during the inspection. A walk of the boundary of the site noted only a slight intermittent chemical odour about the northern corner of the site. This odour was slight, and quickly dissipated about the property boundary.

No odour was noted that would have been directly associated with the biofilter beds located at the rear of the site.

4 June 2014
A walk around the perimeter of the site was undertaken to assess any odours being emitted from the site. No odours were detected at or beyond the boundary of the site that would be associated with Zelam site activities.

A sweet/damp odour was noted immediately downwind of the bio filter beds at the rear of the site, however this quickly dissipated within 2 meters of the beds and was not detectable at the site boundary.

13.2.3 Data review

Zelam Limited's consent contains requirements for the Company to monitor the pH of the forced draft scrubbers on a weekly basis (special condition 8) and free amine concentration of the air displacement scrubber prior to each production run (special condition 10), and to send this information through to Council in the form of a written report on request.

A summary of the information provided that covers the year under review is shown in Table 36. During the 2011-2012 year, Council was informed that the air displacement scrubber was no longer in use at the site, as the process had been discontinued, therefore during the year under review results were only provided for the pH of the forced draft scrubbers.

Table 36 Summary of Zelam Limited's scrubber liquor monitoring log for the year under review

	Forced draft scrubber liquors	
	Shed 2 - pH	Shed 3 - pH
Consent limit	*Minimum of 9.0*	*Minimum of 9.0*
minimum	9.27	9.14
maximum	11.33	11.96
median	9.76	9.86
number	51	51

The Company's monitoring shows that the scrubber liquors were maintained above the required minimum levels.

13.2.4 Investigations, interventions, and incidents

In the 2013-2014 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by Zelam Limited.

13.3 Discussion

13.3.1 Discussion of plant performance

Inspections found that general housekeeping were consistently good during the year under review. Some localised grass die-off was noted as times in the area used for fungicide waste water irrigation, however it was reported that the grass appeared to re-grow quickly, and that visually, it appeared that there were no significant adverse effects occurring.

Information supplied to Council in relation to the Company's self monitoring of the scrubber liquor pH showed that the scrubber liquors were maintained as per the conditions of the consent.

13.3.2 Environmental effects of exercise of consent

No significant adverse effects were found as a result of the Company's activities. No odours were noted during the off-site odour surveys, and no effects were noted on the foliage of the surrounding vegetation during the year under review.

13.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 37.

Table 37 Summary of performance for Consent 4059-5, Zelam Limited's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Minimisation of emissions to air	Inspection and discussion with consent holder	Yes
2. Consultation prior to alterations to plant or processes	Liaison during visits and consultation regarding the installation of a new granulation plant	Yes
3. Objectionable odour at site boundary not permitted	Odour surveys	Yes
4. Maximum concentration of benzyl chloride	Process not undertaken	N/A
5. Concentration of discharge of particulate matter	No visible emissions at the time of inspection	Yes
6. Immediate notification in the event of incident affecting off-site location	No incidents reported. No incidents found at inspection. No complaints received	Yes
7. pH of forced draft scrubber liquor	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Monitoring of forced draft scrubber liquor pH	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes
9. Free amine concentration of air displacement scrubber liquor	Process not undertaken	N/A
10. Monitoring of air displacement scrubber liquor free amine concentration	Process not undertaken	N/A
11. Maximum ground-level concentrations of contaminants beyond boundary	Not monitored during year under review	N/A
12. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High
Overall assessment of administrative performance in respect of this consent		High

During the year, Zelam Limited demonstrated a high level of environmental and high level of administrative performance with the resource consents as defined in Section1.1.5.

13.3.4 Recommendation from the 2012-2013 Annual Report

In the 2012-2013 Annual Report, it was recommended:

THAT monitoring programmed for consented activities at Zelam Limited in the 2013-2014 year continues at the same level as in 2012-2013.

THAT the option for a review of resource consent 4059-5 in June 2014, as set out in condition 12 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

These recommendations were implemented.

13.3.5 Alterations to monitoring programmes for 2014-2015

In designing and implementing the monitoring programmes for air discharges in the region, the Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2014-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

13.4 Recommendation

THAT monitoring programmed for consented activities at Zelam Limited in the 2014-2015 year continues at the same level as in 2013-2014.

14. Catchment unauthorised discharges

In the Waitaha catchment during the year under review, there were seven water-related, and nine air-related incidents logged on the Council database, and one self notification of an accidental discharge onto land. Of these seventeen incidents, only ten could be substantiated at the time of investigation.

Table 38 Summary of the number of potential unauthorised discharges investigated in relation to activities in the Waitaha catchment

Company	Number of substantiated unauthorised discharges	Number of unsubstantiated unauthorised discharges
Waitaha catchment joint monitoring programme		
AICA (NZ) Limited	0	1 (water)
C & O Concrete	0	0
Courtenay trading Company Limited	1 (water), 1 (air)	1 (water)
Greymouth Facilities/ Parker Drilling International of New Zealand	0	0
Intergroup Limited	0	0
New Plymouth District Council	0	0
Symons Property Developments Limited	2 (air)	2 (air)
Taranaki Sawmills Limited	1 (water)	0
TBS Coatings Limited	0	1 (air)
Weatherford New Zealand Limited	1 (water)	0
Woodwards 2008 Limited	0	0
Zelam Limited	0	0
Other monitored/consented industries	0	0
Permitted activities/other		
Agri Fert	1 (water)	0
Don Crow	0	1 (air)
Johnson Partnership	1 (air)	0
Mainfreight	1 (land)	0
The Land Company	0	1 (air)
Unsourced/unidentified	0	0
Total	10	7

Only five of the incidents were linked to the exercise of consents monitored under this programme. There was one unsubstantiated incident recorded for AICA Limited due to an error in their self monitoring results reported. There was one substantiated unauthorised discharge of contaminants to the Waitaha Stream recorded from each of the sites of Courtenay Trading Company, Taranaki Sawmills and Weatherford. There was one incident recorded for TBS Coatings Limited that could be substantiated at the time of investigation.

There were two additional unsubstantiated discharges recorded for Courtenay Trading Company prior to the granting of their consent and four incidents recorded for Symons

Property Developments Limited, however these were related to the discharge of dust from the site, not to their water discharge consent monitored under this programme. Only two of these dust complaints was substantiated at the time of inspection.

All of these incidents are discussed in more detail in the individual consent holder sections of this report.

The details surrounding the remaining incidents are summarised below.

Agri Fert

On 29 January 2014 at 12:00 AM a complaint was received regarding the Waitaha Stream running white at the culvert outlet at De Havilland Drive, Bell Block. Investigation found the stream to be discoloured, and the discharge was traced back to a property on De Havilland Drive. It was found that lime had been washed off the site as a result of an employee cleaning about the lime storage tanks. The lime had been washed into the stormwater system, which drains into the Waitaha Stream. Photographs and samples were taken.

Figure 21 Waitaha Stream downstream of De Havilland Drive - Lime wash from Agri Fert 29 January 2014

Table 39 Sample from unauthorised discharge – Lime wash from Agri Fert 29 January 2014

Sample location	Alkalinity (g/m^3 CaO_3)	Condy (mS/m @ 20°C)	pH (pH)	Temperature (deg C)	Turbidity (NTU)
Waitaha Stream upstream culvert inlet	32	12.3	6.6	17.0	8.2
Waitaha Stream – De Havilland Dr culvert exit	410	22.1	7.5	17.0	700
Lime wash, trib upstream of stream	750	31.9	7.4	16.6	1900

A letter of explanation was received, which identified that a new employee was cleaning the area around the slurry holding tank and washing the exterior of the spreaders. Rather than using a broom, spade and wheelbarrow to collect the lime build up from around the holding tank, the employee used a high volume hose. The Company has since amended their practices to eliminate the risk of a similar event in the future. This involved reviewing the actions that lead to the above discharge while ensuring that lime surplus is regularly collected off the yard, reducing any potential for wash to enter the storm water system.

An infringement notice was issued.

Don Crow
On 17 November 2013 at 12:00 AM a complaint was received regarding smoke from a fire on Airport Drive, Bell Block. Investigation found no smoke discharging beyond the boundary of the property.

Johnson Partnership (Stephen & Anne Johnson)
On 19 September 2013 at 3:47 PM two complaints were received concerning a strong poultry odour in the Bell Block area. It was identified that a poultry based fertiliser had been applied on the above property that day. It was recommended that in future the application of NPK be done in wet conditions to mitigate any potential odour leaving property, and also ensuring that the wind direction is away from residential areas.

Mainfreight Transport Ltd
On 2 May 2014 at 12:00 AM notification was received regarding a hydochloric acid spill at the Mainfreight depot, on Corbett Road, Bell Block. Investigation found that a forklift had punctured a 20 litre container of hydrochloric acid while unloading a pallet from a delivery truck. It was thought the pallet frame had broken, causing a barrel to drop, which was then punctured by the forks. The spill occurred under the covered area of the site and all of the product remained localised. The fire service were in attendance at the time, and were recovering the neutralised materials into bins for disposal. The fire crew were to wash the contaminants from their boots, and they were advised to undertake the activity away from the storm water drain, which they agreed to do.

The Land Company Limited
On 3 February 2014 at 12:00 AM a complaint was received concerning dust discharging from a subdivision development site on Glasgow Street, Bell Block. This complaint could not be substantiated at the time of investigation

Unidentified
On 7 January 2014 at 12:00 AM a complaint was received regarding a small fire that occurred in Auster Place the previous day, resulting in offensive smoke being emitted. Investigation found that a small fire consisting of recently trimmed grass and general

organic waste (branches etc) had been previously lit on the premise. It was reported that the site owner was to be spoken to, and educated regarding lighting of fires on Industrial or Trade premises. An inspection notice was sent.

15. Waitaha Stream receiving environment monitoring

15.1 Results of chemical surveys

Two full wet weather surveys were conducted during the year under review, with seven in-stream water quality sites sampled by the Council. All samples were tested for pH, conductivity, oil and grease, and turbidity. Further tests for metals, phosphorus, nitrogen, formaldehyde, and/or phenol were carried out on particular samples depending on the expected potential pollutants from industries in the vicinity of the sampling points. The results of this sampling are presented in Table 40.

The boron concentrations recorded during the year under review were similar to or higher that the respective historical medians, however they were still well below the high reliability trigger value of 0.37 g/m^3 given in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) for slightly to moderately disturbed ecosystems.

As in previous years, lead, formaldehyde and phenol were not detected during any of the monitoring surveys carried out during the year under review.

Monitoring found no significant changes in the pH or temperature of the stream during the surveys conducted. It is noted that the pH of the tributary (WTH000041) is often slightly lower than the Waitaha Stream (WTH000040 and WTH000095).

Table 40 Results of receiving environment sampling of the Waitaha Stream and tributaries, with historical median values for sampling up to 30 June 2013

Parameter		Waitaha Stream													
		Below AICA WTH000013		At DeHavilland Drive WTH000035		Trib at DeHavilland Drive WTH000037		~ 120m d/s DeHavilland Drive WTH000040		Weatherfords trib u/s confluence WTH000041		At old farm access bridge WTH000050		30m d/s Connett Road WTH000095	
21 January 2014		08:51	median	09:08	median	09:04	median	09:23	median	09:15	median	10:30	median	10:52	median
Boron	g/m^3	-	-	0.07	-	-	-	-	-	-	-	0.10	0.05	0.09	0.07
Conductivity	mS/m	11.8	13.6	6.5	12.5	11.0	13.4	11.6	13.2	7.6	13.4	10.6	14.1	6.8	14.1
Copper (dissolved)	g/m^3	-	-	-	0.004	-	-	0.004	0.004	0.005	0.004	0.005	<0.01	-	-
Dissolved reactive phosphorus	g/m^3 P	-	-	0.281	0.077	-	-	0.039	0.072	-	-	0.048	0.03	0.121	0.026
Formaldehyde	g/m^3	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Manganese (As)	g/m^3	-	-	-	-	1	-	-	-	0.28	-	-	-	-	-
Unionised ammonia	g/m^3 N	0.00005	0.00009	0.00072	0.0007	-	-	0.00088	0.0006	-	-	-	-	0.00050	0.00081
Ammoniacal nitrogen	g/m^3 N	0.038	0.052	0.290	0.238	-	-	0.280	0.302	-	-	-	-	0.238	0.318
Nickel (acid soluble)	g/m^3	-	-	-	-	-	-	-	-	<0.02	-	-	-	-	-
Oil and grease	g/m^3	b	<0.5	b	<0.5	4.6	1	b	1	b	0.6	b	0.6	9.8	1
Lead (acid soluble)	g/m^3	-	-	-	<0.05	-	-	<0.05	<0.05	-	-	-	-	-	-
pH	pH	6.6	6.7	6.8	6.8	6.6	6.8	6.9	6.8	6.5	6.6	6.7	6.9	6.7	6.9
Phenol	g/m^3	<0.02	<0.02	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	Deg.C	15.9	18.7	17.4	14.8	16.7	14.8	17.4	15.1	17.2	14.2	17.2	15	18.2	15
Turbidity	NTU	6.2	24	30	58	43	71	220	74	160	77	65	55	65	115
Zinc (dissolved)	g/m^3	-	-	-	0.086	-	-	0.075	0.085	0.065	0.137	0.049	0.094	-	-

Parameter		Waitaha Stream													
		Below AICA WTH000013		At DeHavilland Drive WTH000035		Trib at DeHavilland Drive WTH000037		~ 120m d/s DeHavilland Drive WTH000040		Weatherfords trib u/s confluence WTH000041		At old farm access bridge WTH000050		30m d/s Connett Road WTH000095	
25 June 2014	Time (NZST)	10:01	median	10:20	median	10:10	median	11:05	median	11:10	median	12:05	median	12:30	median
Boron	g/m³	-	-	-	-	-	-	-	-	-	-	0.06	0.05	0.06	0.07
Conductivity	mS/m	13.8	13.6	14.6	12.5	14.4	13.4	14.6	13.2	23.3	13.4	13.3	14.1	10.2	14.1
Copper (dissolved)	g/m³	-	-	0.004	0.004	-	-	0.003	0.004	<0.001	0.004	0.002	<0.01	-	-
Dissolved reactive phosphorus	g/m³ P	-	-	0.356	0.077	-	-	0.098	0.072	-	-	0.017	0.03	0.014	0.026
Formaldehyde	g/m³	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
Manganese (As)	g/m³	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unionised ammonia	g/m³ N	0.00001	0.00009	0.00236	0.0007	-	-	0.00105	0.0006	-	-	-	-	0.00095	0.00081
Ammoniacal nitrogen	g/m³ N	0.009	0.052	1.15	0.238	-	-	0.643	0.302	-	-	-	-	0.301	0.318
Nickel (acid soluble)	g/m³	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil and grease	g/m³	b	<0.5	b	<0.5	b	1.0	b	1.0	b	0.6	b	0.6	b	1.0
Lead (acid soluble)	g/m³	-	-	<0.05	<0.05	-	-	<0.05	<0.05	-	-	-	-	-	-
pH	pH	6.6	6.7	6.8	6.8	6.6	6.8	6.7	6.8	6.6	6.6	6.7	6.9	7.0	6.9
Phenol	g/m³	<0.02	<0.02	-	-	-	-	-	-	-	-	-	-	-	-
Temperature	Deg.C	15.4	18.7	14.8	14.8	14.6	14.8	14.9	15.1	15.6	14.2	14.5	15	14.4	15
Turbidity	NTU	6.7	24	140	58	40	71	58	74	77	77	400	55	350	115
Zinc (dissolved)	g/m³	-	-	0.226	0.086	-	-	0.183	0.085	0.042	0.137	0.050	0.094	-	-

Key: b parameter not determined, no visible hydrocarbon sheen and no odour
As Acid soluble metal

Historically the dissolved reactive phosphorus concentration has generally been elevated in the upper to middle catchment, reducing at the site below the Connett Road bridge. This is likely to be due to farming activities above the headwaters of the catchment, and the presence of a horticultural supply business upstream of De Havilland Drive. During the January 2014 survey the dissolved reactive phosphorous concentration was elevated in the Waitaha Stream at the De Havilland Drive site, and showed a general trend of decreasing concentration in a downstream direction. However, an increase was found at the bottom (Connett Road) site. It is noted that the concentrations found were below median only at the site 120 m downstream of De Havilland Drive during this survey. At the time of the June 2014 the dissolved reactive phosphorus decreased in a downstream direction, and was below median at the bottom two sites.

During the January 2014 survey the ammoniacal nitrogen was elevated below De Havilland Drive and remained relatively stable alongside the Weatherford's and Taranaki Sawmills sites, to downstream of the Connett Road discharges. The concentration was below median at all but the De Havilland Drive site. During the June 2014 survey the ammoniacal nitrogen concentrations were low at the site below AICA and elevated at De Havilland Drive. This parameter then decreased in a downstream direction, returning to a median level at the site below the Connett Road bridge. The ammoniacal nitrogen concentration found at the De Havilland Drive site was the second highest on record for this monitoring location.

It is noted that although, where elevated, the ammoniacal nitrogen concentrations were high enough to support the growth of periphyton, the concentrations of the more toxic unionised ammonia remained low. The storm pond records provided by AICA limited show that the Company was not discharging at the time of either of the sampling surveys undertaken during the year under review.

The oil and grease concentrations found in the stream during the year under review were generally low. At the time of the January 2014 survey a sheen was noted in the tributary of the Waitaha Stream at the De Havilland Drive site. A sample was taken of the flow in the roadside gutter, which enters the tributary just upstream of this site as a visible sheen was noted. The sample was found to contain 67 g/m^3 of oil and grease, but the source of this contaminant could not be identified. Although an oil and grease concentration of 1 g/m^3 was found in the Waitaha Stream below the confluence with the tributary, there was no visible sheen noted at the time of sampling. This shows that there was little, if any, effect from this discharge under the conditions prevailing at the time of sampling. An oil and grease concentration of 9.8 g/m^3 was recorded for the sample collected from the Waitaha Stream downstream of the Connett Road reticulated stormwater discharges. It was noted that the discharge on the true right bank (STW1061) had an oily sheen, and this discharge was found to contain 29 g/m^3 of oil and grease. Samples taken from the consented sites discharging via this outlet were found to be compliant with consent conditions. Again the source of this contaminant could not be identified.

There are several guidelines for zinc and copper for assessing water quality in terms of suitability for sustaining aquatic life. The United States Environmental Protection Agency (USEPA), in defining metals criteria for protection of freshwater aquatic life, has adopted the use of dissolved metals as most closely approximating the bio available fraction of metal in the water column. Previously, water quality criteria were based on total recoverable metal concentration.

The water quality criteria for dissolved copper and zinc, for water of hardness 50 g/m^3 $CaCO_3$, are 0.005 g/m^3 for Cu and 0.058 g/m^3 for Zn respectively as a 4 day average, for chronic (long term) exposure. The corresponding criteria for acute (4-hour) exposure are 0.007 g/m^3 for Cu and 0.064 g/m^3 for Zn. Only the acute criteria are applicable to wet weather sampling results, whereas both chronic and acute exposure criteria would be applicable to dry weather sampling results.

Dissolved copper was found to be at or below the acute and chronic criteria on at all sites monitored for this parameter during both surveys.

The acute exposure criterion for dissolved zinc was exceeded at only one monitored site during the January 2014 survey and at two sites during the June 2014 survey. During the June 2014 survey the dissolved zinc was found to be at it's highest in the Waitaha Stream downstream of De Havilland Drive, and although still above the acceptance criteria, decreased as it flowed past the Weatherford's site. During the January 2014 survey, although the dissolved zinc concentration was slightly above the acute water quality criteria downstream of the Weatherford's site, this parameter was not determined upstream of the site, and the June 2014 survey had found that the concentration was at it's highest at this upstream monitoring location (WTH000035).

Nickel and manganese determinations were made retrospectively on a retained preserved sample from the Weatherford tributary (WTH000041) from the survey undertaken on 21 January 2014. Although the detection limit for this initial Nickel determination is above the ANZECC low reliability trigger limit of 0.011 g/m^3, the results confirmed that this contaminant was not present at high concentrations. The Manganese concentrations were found to be well below the ANZECC trigger limit of 1.9 g/m^3.

During the January 2014 the turbidity's of the Waitaha Stream and tributaries monitored were found to be generally below median. The exceptions to this were the Waitaha Stream and Tributary downstream of the Weatherford's site (WTH000040 and WTH000041), and at the site located halfway along the boundary of the Taranaki Sawmills site (WTH000050). The stormwater from the Weatherford's site was found to contain an elevated suspended solids concentration of 130 g/m^3, and the Company was subsequently asked to install silt controls at the site.

During the June 2014 survey the turbidity of the Waitaha Stream itself, although elevated, was at or below median at all but one site above WTH000050. The source of the high turbidity at De Havilland Drive (WTH000035) and WTH000050 could not be identified at the time of sampling. Although the discharge from the reticulated stormwater on the true right bank below Connett Road was extremely high (1200 NTU), this had little, if any effect, on the stream as there was in fact a slight decrease in what was already a highly turbid stream.

The tributaries at De Havilland Drive (above and to the west of Weatherford) and the Weatherford's tributary below the eastern site boundary were found to have turbidity's that were similar to or below median.

The Waitaha Stream has a small catchment area and is coming under increasing pressure as the land upstream of Devon Road is further developed. In order to improve the water quality of the stream, the Council will be focusing on ensuring special conditions on existing consents are adequate; identifying any sites that require discharge consents; and educating site operators in the catchment to ensure that they are aware of their obligations under Rule 23 of the Regional Freshwater Plan for permitted stormwater discharges (see Appendix III).

15.2 Results of biological surveys

15.2.1 Electric fishing survey

On 27 March 2014 an electric fishing survey was undertaken at three sites in the Waitaha Stream, with the intention to quantify the fish populations in the stream to provide some indication of fish passage issues, and possible impacts from the industrial area. The sites sampled were located downstream of De Havilland Drive (site 1), around Connett Road (site 2) and upstream of the coast (site 3).

From the results of this survey, it appears that the upper reaches of the Waitaha Stream supported a depauperate fish community. Site one recorded no fish, although movement indicated the presence of an eel, and only one fish, a shortfin eel, was recorded at site 2. Site 3 recorded results more typical of a small pastoral stream, with longfin eel, shortfin eel and redfin bully all present in moderate numbers. No

freshwater crayfish were recorded at any site, which is relatively unusual, and significant numbers of worms were observed coming out of the stream sediment downstream of Connett Road while surveying, indicative of significant enrichment at this site.

It is important to note that contamination of the Waitaha Stream was observed at both sites 1 and 2 in the current survey, with site 1 having a very dark, almost black flow, which appeared to be caused by tannins (Photo 11) and a stormwater pipe near site 2 having recently discharged foamy water (Photo 12). Furthermore, this survey was originally planned for January 2014, but was abandoned due to the stream flowing almost white at site 1, which was subsequently found to be due to a lime discharge upstream of De Havilland Drive. There have also been relatively frequent discharges of raw sewage to the Waitaha Stream, primarily from the pumping station located at Connett Road which could explain the abundant population of worms observed at this location.

Photo 11 Monitoring site 1, Electric fishing survey 27 March 2014

Photo 12 Monitoring site 2, Electric fishing survey 27 March 2014

With regards to fish passage, there is a natural waterfall at the coast, which is likely to impede the passage of poor climbers past this point, except during the highest of high tides (Photo 13). There are also artificially created barriers to fish passage between sites 2 and 3, with two ponds and the SH3 crossing having perched culverts. These barriers have the potential to restrict the upstream passage of fish, reducing both species richness and abundance. This has the potential to complicate the assessment of results. Some perspective is provided by surveys undertaken in the adjacent Mangati Catchment, which also has a waterfall at the mouth, which have recorded abundant populations of eels, banded kokopu and redfin bully, with giant kokopu also present.

It is clear from the results that the stream has the potential to support good populations of redfin bully and eels, with banded kokopu also likely to be present. This can be concluded from the results at site 3, and what was previously recorded in the Mangati Stream. It is likely that banded kokopu are present in the lower catchment, but the survey technique was unlikely to record this nocturnal species. It is likely that redfin bully passage is restricted, with this species either not present or present in very low numbers upstream of SH3. However, there should still be a relatively normal population of eels upstream of this point, as habitat is suitable, and they are formidable climbers.

Photo 13 Naturally occurring waterfall in the Waitaha Stream near the coast

The extremely low numbers of eels upstream of SH3 indicates that the industrial area may be having a detrimental effect on the water quality. The behaviour of the only fish recorded in this reach indicated that it may be sick, and the abundant population of worms below Connett Road indicated significant organic enrichment. Furthermore, three independent instances of contamination were noted while performing this fish survey.

Overall, it is apparent that this catchment is suffering from a number of factors. Barriers to fish passage have restricted some fish from entering the catchment, and also from progressing up the catchment. The piping of headwaters will have detrimentally affected the hydrology of the catchment, as has the increase in impermeable surface area, as the catchment is developed. In addition, the apparent frequency of contamination reduces water quality, and has the potential to have both chronic and acute impacts on the stream biota, which either leads to fish emigration, or death. It is understood that the lower stream catchment is earmarked for urban development, with some thought being given to establishing a reserve and walkway, similar to that alongside the Mangati Stream. While this has the potential to improve habitat conditions in the lower catchment, it is important that the water quality entering this reach is of such a quality that the stream biota is not detrimentally affected.

16. Summary of recommendations

1. THAT monitoring programmed for consented activities of AICA (NZ) Limited in the 2014-2015 year continues at the level programmed for 2013-2014.

2. THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2014-2015 year continues at the level programmed for 2013-2014.

3. THAT Courtenay Trading Company Limited be removed from the Waitaha catchment monitoring programme in the 2014-2015 year, as the consent is no longer being exercised and the Company has surrendered the consent.

4. THAT monitoring of the stormwater discharge from the Intergroup Limited site in the 2014-2015 year continues at the same level as programmed for 2013-2014.

5. THAT monitoring of the stormwater discharge from the Intergroup Limited site in the 2014-2015 year continues at the same level as programmed for 2013-2014.

6. THAT monitoring programmed for consented activities of NPDC in this catchment in the 2014-2015 year continues at the same level programmed for 2013-2014.

7. THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2014-2015 year continues at the same level as programmed for 2013-2014.

8. THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2014-2015 year continues at the same level as programmed for 2013-2014.

9. THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2014-2015 year continues at the same level as in 2013-2014.

10. THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2014-2015 year continues at the same level as programmed in 2013-2014.

11. THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2014-2014 year continues at the same level as programmed in 2013-2014

12. THAT monitoring programmed for consented activities at Zelam Limited in the 2014-2015 year continues at the same level as in 2013-2014.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
Condy	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Cu*	Copper.
DRP	Dissolved reactive phosphorus.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
g/m^3	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
l/s	Litres per second.
MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
NH_4	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH_3	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.

O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
Pb*	Lead.
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PM_{10}	Relatively fine airborne particles (less than 10 micrometre diameter).
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act* 1991 and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.
UI	Unauthorised Incident.
UIR	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
Zn*	Zinc.

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

For further information on analytical methods, contact the Council's laboratory.

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Appendix I

Resource consents held by companies in the Waitaha catchment (alphabetical order)

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Aica NZ Limited 149 Corbett Road Bell Block NEW PLYMOUTH 4373
Decision Date (Change):	7 May 2002
Commencement Date (Change):	7 May 2002 (Granted: 20 March 1996)

Conditions of Consent

Consent Granted:	To discharge up to 150 litres/second of stormwater from a chemical manufacturing complex into a wetland at the headwaters of an unnamed tributary of the Waitaha Stream
Expiry Date:	1 June 2014
Review Date(s):	June 2002, June 2008
Site Location:	149 Corbett Road, Bell Block, New Plymouth
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD
Grid Reference (NZTM)	1701011E-5677852N
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

Condition 1 (changed)

1. The following limits shall not be exceeded in the discharge:

pH (within the range)	6-9	
Suspended solids	100	gm^{-3}
Oil & grease (Freon extractable)	15	gm^{-3}
Phenol	1	gm^{-3}
Ammonia - nitrogen	20	gm^{-3}
Formaldehyde	2	gm^{-3}

Conditions 2 to 6 (unchanged)

2. Allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to any of the following effects in the receiving water:

   i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   ii) any conspicuous change in the colour or visual clarity;
   iii) any emission of an objectionable odour;
   iv) any significant adverse effects on aquatic life, habitats, or ecology;
   v) the rendering of the water unsuitable for consumption by farm animals;
   vi) any undesirable biological growths.

3. The consent holder shall maintain a contingency plan, to the satisfaction of the Chief Executive, Taranaki Regional Council, for action to be taken in the event of accidental discharge or spillage of contaminants.

4. The consent holder shall keep records of the chemical monitoring of the stormwater basins and the frequency and volume of discharges as a result of exercising this consent, and shall make such records available to the Taranaki Regional Council upon request.

5. No chemicals shall be stored within the carpark catchment area which discharges directly to the Waitaha Stream.

6. The Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of a review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Transferred at Stratford on 2 April 2013

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Aica NZ Limited 149 Corbett Road Bell Block NEW PLYMOUTH 4373
Decision Date (Change):	5 October 2009
Commencement Date (Change):	5 October 2009 (Granted: 12 June 1996)

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the manufacture of formaldehyde solution and urea formaldehyde resin, together with emissions from associated activities at the plant premises
Expiry Date:	1 June 2014
Site Location:	Corbett Road, Bell Block
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD
Grid Reference (NZTM)	1701049E-5677952N

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 and 2 (changed)

1. That the total emissions of formaldehyde from all processes on the site shall not exceed in aggregate 1.2 kg/hr as formaldehyde.

2. That the total emissions of formaldehyde from either the main stack of the multi-purpose plant or the vent of the formaldehyde absorber tower of the formaldehyde synthesis plant shall not exceed 1.0 kg/hr as formaldehyde.

Condition 3 (unchanged)

3. That the exercise and the effects of the exercise of this consent shall be monitored to the satisfaction of the Chief Executive, Taranaki Regional Council.

Conditions 4 and 5 (new)

4. Without limitation to condition 3, the consent holder shall have emissions tests conducted on discharges from the "formaldehyde absorber tower", and any other treatment stack at the request of the Chief Executive, Taranaki Regional Council, to demonstrate compliance with special conditions 1 and 2. These tests shall;

a) be conducted by 1 June 2010 and every twelve months thereafter for the duration of the consent, and

b) comprise not less than three separate samples taken during operating conditions that give rise to maximum emissions from the stack, and

c) be reported to the Chief Executive, Taranaki Regional Council, within 20 working days of the samples being taken. The report shall include the results of the tests, the relevant plant operating parameters over the period of each test, all the raw data and all the calculations.

5. The emissions tests referred to in special condition 4 shall be carried out in accordance with USEPA Method 0011, or any other equivalent method subject to the written approval of the Chief Executive, Taranaki Regional Council, and these tests shall be performed by a party independent from the consent holder, appropriately qualified and experienced in such testing to the satisfaction of the Chief Executive, Taranaki Regional Council.

Condition 6 (unchanged, formerly condition 4)

6. That the consent holder shall at all times operate, maintain, supervise and monitor all processes authorised by this consent so that emissions are reduced to a practicable minimum.

Condition 7 (changed, formerly condition 5)

7. That all emissions of formaldehyde to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of formaldehyde at any point beyond the site boundary do not exceed 0.10 mg/m^3 (ambient conditions) at any time.

Conditions 8 to 12 (unchanged, formerly conditions 6 to 10)

8. That all emissions of phenol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of phenol at any point beyond the site boundary do not exceed 0.63 mg/m^3 (ambient conditions) at any time.

9. That all emissions of resorcinol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of resorcinol at any point beyond the site boundary do not exceed 1.5 mg/m^3 (ambient conditions) at any time.

10. That this consent may be reviewed by the Chief Executive, Taranaki Regional Council, at any time if there are grounds for holding that the exercise of this consent may relate to any significant adverse effects on any ecosystems including, but not limited to disturbance to habitats, plants, animals, microflora or microfauna.

11. That prior to undertaking any alteration at the plant, processes, or operations as specified in the application and supporting documentation lodged with the Taranaki Regional Council for this consent, which may significantly change the nature or quantity of contaminants discharged from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

12. That the consent holder shall provide to the Chief Executive, Taranaki Regional Council, by 30 June 1997, and again by 30 June 2001, and every six years thereafter, a written report:

    a) reviewing any technological advances in the reduction or mitigation of discharges to air from the site, how these might be applicable and/or implemented at the site, and the costs and benefits of these advances; and

    b) addressing any other issue relevant to the minimisation or mitigation of discharges to air from the site that the Chief Executive, Taranaki Regional Council, considers should be included; and

    c) detailing an inventory of discharges to air from the site of such contaminants as the Chief Executive, Taranaki Regional Council, may from time to time specify following consultation with the consent holder.

Condition 13 (changed, formerly condition 11)

13. That the consent holder shall at all times adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the discharges into the air from the site. `Best practicable option' shall be determined by the Taranaki Regional Council, taking into account the information supplied by the consent holder under special condition 12 of this consent, and following review as set out under special condition 14 of this consent.

Condition 14 (unchanged, formerly condition 12)

14. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 1998 and/or June 2002 and/or June 2008 for the purpose of:

    a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which it is appropriate to deal with at the time of review; or

    b) requiring the holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by any discharge to air; or

    c) to alter, add, or delete limits on discharge or ambient concentrations of any contaminant or contaminants.

Transferred at Stratford on 2 April 2013

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Consent 4777-1

TARANAKI REGIONAL COUNCIL

PRIVATE BAG 713
47 CLOTON ROAD
STRATFORD
NEW ZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder: C & O Concrete Products Limited
P O Box 7141 New Plymouth

Change to Conditions Date: 8 September 1997

Conditions Of Consent

Consent Granted: To discharge up to 40 litres/second of stormwater from a concrete products manufacturing premises into the Waitaha Stream at or about GR: Q19:112-409

Expiry Date: 1 June 2014 [Granted: 5 September 1995]

Review Date[s]: June 2002, June 2008

Site Location: Connett Road East Bell Block

Legal Description: Lot 25 DP 12988 Bell Dist Blk II Paritutu SD

Catchment: Waitaha

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document

Consent 4777-1

General conditions

a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and

ii) charges authorised by regulations.

Special conditions

1. THAT the following limits shall not be exceeded in the discharge:

suspended solids 200 gm^{-3} and

THAT allowing for a mixing zone of 10 metres extending downstream from the Connett Road drain, the discharge shall not give rise to a pH outside of the range 6.0-8.5.

2. THAT allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to all or any of the following effects in the receiving water:

i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;

ii any conspicuous change in the colour or visual clarity;

iii) any emission of an objectionable odour;

iv) any significant adverse effects on aquatic life, habitats, or ecology;

v) any undesirable biological growths.

3. THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Signed at Stratford on 8 September 1997

For and on behalf of
TARANAKI REGIONAL COUNCIL

DIRECTOR–RESOURCE MANAGEMENT

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Courtenay Trading Company Limited 24 Corbett Road NEW PLYMOUTH 4312
Decision Date:	4 February 2014
Commencement Date:	4 February 2014

Conditions of Consent

Consent Granted:	To discharge stormwater from a drum recycling site into the Waitaha Stream via the New Plymouth District Council stormwater network
Expiry Date:	1 June 2032
Review Date(s):	June 2016, June 2020, June 2026, and/or within 3 months of receiving notification under special condition 9
Site Location:	24 Corbett Road, New Plymouth
Legal Description:	Lot 2 DP 14672 (Discharge source & site)
Grid Reference (NZTM)	1700422E-5678818N and 1700447E-5678794N
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act 1991.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The stormwater discharged shall be from a catchment area not exceeding 2099 m^2.

3. No drums and/or IBCs (Intermediate Bulk Containers) that contain residue of bioaccumulative or ecotoxic material shall be kept onsite, unless they are inside the building, or within a dedicated bunded area with drainage to sumps, or to other appropriate recovery systems, and not directly to the site stormwater system.

4. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm^{-3}
oil and grease	Concentration not greater than 15 gm^{-3}
free chlorine	Concentration not greater than 0.2 gm^{-3}

This condition shall apply before entry of the treated stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

5. After allowing for reasonable mixing, within a mixing zone extending 5 metres downstream of the point where the discharge enters the Waitaha Stream, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life.

6. Before 31 March 2014, the consent holder shall prepare and thereafter maintain a contingency plan that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The contingency plan shall be followed in the event of a spill or unauthorised discharge and shall be certified by the Chief Executive, Taranaki Regional Council as being adequate to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

7. Before exercising this consent, the consent holder shall prepare and thereafter maintain a stormwater management plan that documents how the site is to be managed to minimise the contaminants that become entrained in the stormwater. This plan shall be followed at all times, shall be certified by the Chief Executive, Taranaki Regional Council, and shall include but not necessarily be limited to:

   a) the loading and unloading of materials;
   b) drum/IBC receipt and inspection procedures;
   c) maintenance of conveyance systems and/or pipework;
   d) general housekeeping;
   e) drum/IBC storage including specific details of how drums/IBCs that have contained bioaccumulative or ecotoxic material will be handled; and
   f) any other structural or procedural controls used to minimise the level of contaminants in the discharge.

8. The consent holder shall maintain a record of the drums/IBCs received, including where they came from, the material they held and the treatment they received, and supply these records to the Chief Executive, Taranaki Regional Council, upon request.

9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.

10. This consent shall lapse on 31 March 2019, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

11. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:

    a) during the month of June 2016 and/or June 2020 and/or June 2026 and/or
    b) within 3 months of receiving a notification under special condition 9 above;

    for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 4 February 2014

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 NEW PLYMOUTH 4342
Consent Granted Date:	10 June 2008

Conditions of Consent

Consent Granted:	To discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream at or about (NZTM) 1701124E-5678621N to 1700868E-5679211N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	175 Connett Road, Bell Block
Legal Description:	Lots 58 & 95 DP 14599
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.

3. After allowing for a mixing zone of 10 metres extending downstream of the discharge, the discharge shall not give rise to any of the following effects in the receiving waters of the Waitaha Stream:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life.

4. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 10 June 2008

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

TRK950609

COPY

TARANAKI REGIONAL COUNCIL

PRIVATE BAG 713
47 CLOTON ROAD
STRATFORD
NEW ZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

DISCHARGE PERMIT

Pursuant to the RESOURCE MANAGEMENT ACT 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	NEW PLYMOUTH DISTRICT COUNCIL PRIVATE BAG 2025 NEW PLYMOUTH
Renewal Granted Date:	6 December 1995

CONDITIONS OF CONSENT

Consent Granted:	TO DISCHARGE UP TO 1200 LITRES/SECOND OF STORMWATER FROM AN INDUSTRIAL SUBDIVISION INTO AN UNNAMED TRIBUTARY OF THE WAITAHA STREAM AT OR ABOUT GR: Q19:108-406
Expiry Date:	1 June 2014
Review Date[s]:	June 2002 and June 2008
Site Location:	CORBETT ROAD BELL BLOCK
Legal Description:	PT SEC 4 DP4954 BLK II PARITUTU SD
Catchment:	WAITAHA 393.002
Tributary:	UNNAMED TRIBUTARY

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document.

TRK950609

COPY

GENERAL CONDITIONS

(a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

(b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

(c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

(i) the administration, monitoring and supervision of this consent;
(ii) charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
(iii) charges authorised by regulations.

SPECIAL CONDITIONS

1) THAT the following limits shall not be exceeded in the discharge:

Oil and grease [Freon extractable]	$<15\ gm^{-3}$
pH in the range	6.0 - 8.5
Suspended solids	$100\ gm^{-3}$

2) THAT allowing for a mixing zone of 10 metres extending downstream of the discharge point, the discharge shall not give rise to all or any of the following effects in the receiving water:

(i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
(ii) any conspicuous change in the colour or visual clarity;
(iii) any emission of an objectionable odour;
(iv) any significant adverse effects on aquatic life, habitats, or ecology;
(v) any undesirable biological growths.

3) THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Signed at Stratford on 6 December 1995

For and on behalf of
TARANAKI REGIONAL COUNCIL

GENERAL MANAGER

TRK964988

COPY

TARANAKI REGIONAL COUNCIL

PRIVATE BAG 713
47 CLOTON ROAD
STRATFORD
NEW ZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

DISCHARGE PERMIT

Pursuant to the RESOURCE MANAGEMENT ACT 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	PARKER DRILLING INTERNATIONAL OF NEW ZEALAND LIMITED PO BOX 3194 FITZROY NEW PLYMOUTH
Consent Granted Date:	24 July 1996

CONDITIONS OF CONSENT

Consent Granted:	DISCHARGE UP TO 110 LITRES/SECOND OF STORMWATER AND 0.2 CUBIC METRES/ DAY OF TREATED WASHDOWN WATER FROM A STORAGE YARD FOR HYDROCARBON EXPLORATION DRILLING EQUIPMENT INTO AN UNNAMED TRIBUTARY OF THE WAITAHA STREAM AT OR ABOUT GR: Q19:107-408
Expiry Date:	1 June 2014
Review Date[s]:	June 2002 and June 2008
Site Location:	58 CORBETT ROAD BELL BLOCK
Legal Description:	LOT 2 DP16891 PT SECS 11 & 15 BELL DIST BLK II PARITUTU SD
Catchment:	WAITAHA 393.002
Tributary:	UNNAMED TRIBUTARY

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document.

TRK964988

GENERAL CONDITIONS

(a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

(b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

(c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

(i) the administration, monitoring and supervision of this consent;
(ii) charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
(iii) charges authorised by regulations.

SPECIAL CONDITIONS

1. THAT the following limits shall not be exceeded in the discharge:

Suspended solids	100	mg/L
Oil and grease	15	mg/L
pH [range]	6.0 - 10.0	

This condition shall apply prior to the entry of the discharge into the unnamed tributary of the Waitaha Stream, at a designated sampling point approved by the General Manager, Taranaki Regional Council.

2. THAT allowing for reasonable mixing within a mixing zone extending 10 metres downstream of the discharge pipe, the discharge shall not give rise to any of the following effects in the receiving water:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life, habitats, or ecology.

3. THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the environment.

Signed at Stratford on 24 July 1996

For and on behalf of
TARANAKI REGIONAL COUNCIL

GENERAL MANAGER

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Greymouth Facilities Limited P O Box 3394 Fitzroy NEW PLYMOUTH 4341
Decision Date:	8 May 2014
Commencement Date:	8 May 2014

Conditions of Consent

Consent Granted:	To discharge treated stormwater from a yard used for storage and maintenance of hydrocarbon exploration drilling equipment into the Waitaha Stream via the New Plymouth District Council reticulated stormwater system, and onto and into land from the skimmer pit
Expiry Date:	1 June 2032
Review Date(s):	June 2017, June 2020, June 2023, June 2026, June 2029 and/or within 3 months of receiving a notification under special condition 13
Site Location:	58 Corbett Road, Bell Block
Legal Description:	Lots 1 & 2 DP 16891 (Discharge source and site)
Grid Reference (NZTM)	1700523E-5678513N (source) 1700582E-5678541N (discharge from site) 1700889E-5679046N (discharge to stream) 1700526E-5678515N (spillway discharge point)
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

Special conditions

1. This consent authorises the discharge of stormwater onto land from the skimmer pit spillway when the capacity of the primary discharge pipe to the New Plymouth District Council reticulated stormwater system is exceeded.

2. The consent holder shall record all occasions on which a discharge authorised by condition 1 occurs. These records shall be retained and be made available to the Chief Executive of the Taranaki Regional Council upon request.

3. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

4. The stormwater discharged shall be from a catchment area not exceeding 1.065 ha

5. All stormwater shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.

6. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm^{-3}
oil and grease	Concentration not greater than 15 gm^{-3}
chloride	Concentration not greater than 50 gm^{-3}

This condition shall apply before entry of the treated stormwater into the New Plymouth District Council reticulated stormwater system at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

7. For the purpose of assessing compliance with special condition 6 the consent holder shall install and maintain access to the designated sampling point.

8. After allowing for reasonable mixing, within a mixing zone extending 10 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life.

9. The consent holder shall maintain a contingency plan that details measures and procedures to be undertaken to prevent spillage or any discharge of contaminants not authorised by this consent. The contingency plan shall be followed in the event of a spill or unauthorised discharge and shall be certified by the Chief Executive, Taranaki Regional Council as being adequate to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

10. Within three months of the granting of this consent the consent holder shall prepare and maintain a stormwater management plan that documents how the site is to be managed to minimise the contaminants that become entrained in the stormwater. This plan shall be followed at all times, shall be certified by the Chief Executive, Taranaki Regional Council, and shall include but not necessarily be limited to:

    a) the loading and unloading of materials;
    b) maintenance of conveyance systems;
    c) general housekeeping; and
    d) management of the structural and procedural controls in place to minimise the concentration of contaminant present in the discharge.

    A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

11. The discharge of stormwater from the skimmer pit spillway shall not result in the discharge of contaminants beyond the boundary of the site.

12. The concentration of hydrocarbons in the soil shall not exceed the soil acceptance criteria shown in the following table:

Contaminant		Soil acceptance criteria (mg/kg)
Total Petroleum Hydrocarbons	C_7-C_9	590
	C_{10}-C_{14}	1400
	C_{15}-C_{36}	NA[1]
Monoaromatic Hydrocarbons	Benzene	0.0054
	Toluene	1.0
	Ethylbenzene	1.1
	Xylenes	0.61
Polycyclic Aromatic Hydrocarbons	Naphthalaene	0.043
	Non-carc. (Pyrene)	1.2
	Benzo(a)pyrene	0.85

[1] *NA indicates contaminant not limiting as estimated health-based criterion is significantly higher than that likely to be encounter on site*

13. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to consents@trc.govt.nz.

14. This consent shall lapse on 30 June 2019, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

15. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:

    a) during the month of in June 2017 and/or June 2020 and/or June 2023 and/or June 2026 and/or June 2029 and/or
    b) within 3 months of receiving a notification under special condition 13 above;

    for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 8 May 2014

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Symons Property Developments Limited 179 Surrey Hill Road R D 4 NEW PLYMOUTH 4374
Decision Date:	9 May 2011
Commencement Date:	9 May 2011

Conditions of Consent

Consent Granted:	To discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream at or about (NZTM) 1700740E-5678991N and 1700804E-5679014N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	141 to 145 Connett Road East, Bell Block, New Plymouth
Legal Description:	Lot 6 DP 373725 Lot 26 DP 376382 and part of Lot 24 DP 376382 subject to survey [Discharge source & site]
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The stormwater discharged shall be from a catchment area not exceeding 3.14 ha.

3. By 13 May 2011, all stormwater from part of Lot 24 DP 376382, as identified in Appendix I attached to this consent, shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.

4. Any significant volumes of hazardous substances [e.g. bulk fuel] on site shall be:

   a) contained in a double skinned tank, or
   b) stored in a dedicated bunded area with drainage to sumps, or to other appropriate recovery systems, and not directly to the site stormwater system.

5. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm^{-3}
oil and grease	Concentration not greater than 15 gm^{-3}
chloride	Concentration not greater than 50 gm^{-3}
BOD	Concentration not greater than 5 gm^{-3}

   This condition shall apply before entry of the treated stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

6. After allowing for reasonable mixing, within a mixing zone extending 10 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life.

7. The consent holder shall maintain a contingency plan. The contingency plan shall be adhered to in the event of a spill or emergency and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, detail measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not authorised by this consent and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

8. The consent holder shall maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) the loading and unloading of materials;
   b) maintenance of conveyance systems;
   c) general housekeeping; and
   d) management of the interceptor systems.

   A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site, that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to worknotification@trc.govt.nz.

10. The consent holder shall review the Symons Group Stormwater Management Plan and Symons Spill Contingency Plan prior to making any changes to the processes or operations undertaken at the site and/or on receiving written notice from the Taranaki Regional Council of:

    - the requirement to review the Plans;
    - the matters which shall be addressed within the plan review; and
    - the reasons or anticipated results of the matters requiring review.

    The reviewed Plan(s) shall document all operations, maintenance activities, and mitigation and contingency measures and shall be submitted for approval to the Chief Executive, Taranaki Regional Council, acting in a certification capacity, at least two weeks prior to making any changes to the operations on site and/or within one month of receiving written notice of the requirement to review the Plan.

11. The data obtained from any investigations into the effectiveness of the stormwater detention tanks installed at the site is to be made available to the Chief Executive, Taranaki Regional Council upon request.

12. This consent shall lapse on 30 June 2016, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

13. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:

    a) during the month of June 2014 and/or June 2020 and/or
    b) within 3 months of receiving a notification under special condition 9 above;

    for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 May 2011

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Consent 2333-3

TARANAKI REGIONAL COUNCIL

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NEW ZEALAND
PHONE 0-6-765 7127
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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Taranaki Sawmills Limited P O Box 49 NEW PLYMOUTH
Consent Granted Date:	8 December 2000

Conditions of Consent

Consent Granted:	To discharge stormwater from a sawmill operating site onto and into land and into the Waitaha Stream at or about GR: Q19:111-407 and Q19:111-404
Expiry Date:	1 June 2014
Review Date(s):	June 2002, June 2008
Site Location:	Hudson Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 13792 Lot 18 DP 12911 Lot 2 DP 15755 Lot 1 DP 17946 Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in the Resource Management Act 1991, to prevent or minimise any adverse effects of the discharge on the receiving environment.

2. The consent holder shall provide a contingency plan to the Taranaki Regional Council, by 30 March 2001, outlining measures and procedures to be undertaken to prevent the spillage or accidental discharge of contaminants in the stormwater catchment, and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

3. The maximum stormwater discharge rate shall be no more than 540 litres per second.

4. The following concentrations shall not be exceeded in the discharge:

Component	**Concentration**
pH (range)	6.0-9.0
suspended solids	100 gm^{-3}
oil and grease	15 gm^{-3}

5. After allowing for reasonable mixing, within a mixing zone extending 10 metres downstream of the stormwater drain discharges, the discharge shall not give rise to any of the following effects in the receiving waters of the Waitaha Stream:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life.

6. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 2002 and/or June 2008, for the purpose of ensuring that the conditions are adequate to deal with any significant adverse effects of the discharge on the environment arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 8 December 2000

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4096-2

TARANAKI REGIONAL COUNCIL

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Please quote our file number on all correspondence

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Taranaki Sawmills Limited P O Box 7145 Fitzroy NEW PLYMOUTH
Consent Granted Date:	27 January 2004

Conditions of Consent

Consent Granted:	To discharge emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open firepit at or about GR: Q19:110-405
Expiry Date:	1 June 2032
Review Date(s):	June 2008, June 2014, June 2020, June 2026
Site Location:	Hudson Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 13792 Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The consent holder shall minimise the emission and effects of contaminants discharged to air from the property, by the selection of the best practicable process equipment, process control equipment, contaminant abatement equipment, and methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes at all times.

3. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of Application 2797. In the case of any contradiction between the documentation submitted in support of application 2797 and the conditions of this consent, the conditions of this consent shall prevail.

4. The Vekos boiler, stack and associated equipment shall be constructed, operated, and maintained generally as specified in the attachments to application 93/337 lodged with the Taranaki Regional Council on 18 August 1993. In the case of any contradiction between the documentation submitted in support of application 93/337 and the conditions of this consent, the conditions of this consent shall prevail.

5. Prior to undertaking any alterations to the plant, processes or operations, as specified in the application, which may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and any amendments.

6. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing as soon as is practicable, and in any case within one working day, of any use of coal as a fuel (whether as a sole fuel or blended with other fuels) on the site in the exercise of this consent. This condition applies when the intended or anticipated cumulative duration of the use of coal is more than 72 hours within any 14 day period.

7. The consent holder shall record all use of coal as a fuel, including the rate of consumption and the time and duration, and shall make this information available to the Chief Executive, Taranaki Regional Council, upon reasonable request.

8. Within three months of the granting of this consent, the consent holder shall prepare and submit to the Chief Executive, Taranaki Regional Council, a management and operations plan for the combustion of wastes in the fire pit on the property. Upon the approval of the Chief Executive, Taranaki Regional Council, the consent holder shall thereafter maintain and comply with the plan. In the case of any contradiction between the plan and the conditions of this consent, the conditions of this consent shall prevail.

9. The plan for the management and operation of combustion of wastes in the firepit shall ensure a level of environmental performance that is to no less a level than that which would be achieved by compliance with the plan submitted in application 2797, and in particular but without exclusion or limitation, section 6.1.4 (B) and Appendix 3 of that application.

10. In the event of any incident having an adverse effect beyond the boundary of the property of the consent holder, the consent holder shall, as immediately as is practicable, notify the Chief Executive, Taranaki Regional Council.

11. The discharges authorised by this consent shall not give rise to any significant adverse ecological effect on any ecosystems in the Taranaki region.

12. The discharges authorized by this consent shall not give rise to an odour at or beyond the boundary of the site that is offensive or objectionable.

13. For the purposes of condition 12, without restriction, an odour shall be deemed to be offensive or objectionable if:

    a) it is held to be so in the opinion of an enforcement officer of the Taranaki Regional Council, having regard to the duration, frequency, intensity and nature of the odour; and/or
    b) an officer of the Taranaki Regional Council observes that an odour is noticeable, and either it lasts longer than three (3) hours continuously, or it occurs frequently during a single period of more than six (6) hours; and/or
    c) no less than three individuals from at least two different properties, each declare in writing that an objectionable or offensive odour was detected beyond the boundary of the site, provided the Council is satisfied that the declarations are not vexatious and that the objectionable or offensive odour was emitted from the site as specified in (b). Each declaration shall include the individuals' names and addresses, the date and time the objectionable or offensive odour was detected, the location of the individual when it was detected and the prevailing weather conditions during the event. The declarations shall be signed and dated.

14. The discharges authorised by this consent shall not give rise to suspended or deposited dust at or beyond the boundary of the site that, in the opinion of at least one enforcement officer of the Taranaki Regional Council, is offensive or objectionable. For the purpose of this condition, ambient levels of dust in excess of the following limits are deemed to be offensive or objectionable:

    a) dust deposition rate 0.13 $g/m^2/day$; and/or
    b) suspended dust level 1.5 mg/m^3.

15. The consent holder shall control all emissions of sulphur dioxide to the atmosphere from the site, in order that the maximum ground level concentration of sulphur dioxide arising from the exercise of this consent measured under ambient conditions on land does not exceed 350 micrograms per cubic metre [one-hour average exposure] or 125 micrograms per cubic metre [twenty-four hour average exposure] at or beyond the boundary of the site.

16. The consent holder shall control all emissions of particulate of effective diameter of less than 10 micrometres (PM10) to the atmosphere from combustion sources, whether alone or in conjunction with any other emissions from the site, in order that the maximum ground level concentration of PM10 arising from the exercise of this consent measured under ambient conditions does not exceed 50 micrograms per cubic metre [one hour average exposure], on more than 5 occasions per year cumulative across any and all monitoring sites, and does not exceed 120 micrograms per cubic metre [one hour average exposure] at any time, at or beyond the boundary of the site.

17. The discharges authorized by this consent shall not give rise to a level of a contaminant or contaminants at or beyond the boundary of the site that is noxious or toxic.

18. There shall be no emissions of dark smoke from the boiler stack(s) for any continuous period of 2 minutes or for more than 4 minutes cumulative in any 60 minute period, except:

    a) during soot blowing, which may occur up to 4 times per day for a total cumulative duration of 20 minutes in any 24 hour period; and
    b) during the first 30 minutes following the lighting up of any boiler

19. The minimum height of discharge of products of combustion from the boilers shall be 12 metres above the ground level prevailing at the time of lodging the application for this consent.

20. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

21. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2008 and/or June 2014 and/or June 2020 and/or June 2026, for the purpose or purposes of:

    a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
    b) to address via a more appropriate condition or conditions any adverse effect on the environment arising from odour emissions or discharges of other contaminants to air; and/or
    c) to further specify 'best practicable option' in terms of the consent holder's management, supervision, maintenance and/or operation of its processes on the property; and/or
    d) to specify numerical values for any operating or environmental effects parameter.

Signed at Stratford on 27 January 2004

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4056-2

TARANAKI REGIONAL COUNCIL

CHIEF EXECUTIVE
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Please quote our file number on all correspondence

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	TBS Coatings Limited P O Box 7057 Fitzroy NEW PLYMOUTH
Consent Granted Date:	9 August 2002

Conditions of Consent

Consent Granted:	To discharge emissions into the air from abrasive blasting operations and associated processes at a permanent site at Corbett Road, Bell Block at or about GR: Q19:115-397, and from mobile operations at various locations throughout the Taranaki region
Expiry Date:	1 June 2020
Review Date(s):	June 2005, June 2008, June 2011, June 2014, June 2017
Site Location:	Corbett Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 11084 Pt Sec 150 Blk II Paritutu SD
Catchment:	Mangati

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

All operations

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment.

2. As far as is practicable all abrasive blasting shall be carried out in a booth, shed or other effectively facility on the consent holders site.

3. Sand used for dry blasting must contain less than 5% by dry weight free silica and less than 2% by dry weight dust able to pass a 0.15 mm sieve.

4. All abrasive blasting is to be conducted with regard to wind direction and wind strength, such that off-site emissions are kept to a practicable minimum.

5. As far as is practicable, work areas and surrounding areas shall be cleared of accumulations of sand and any other blasted material at the end of each blasting session and by the end of each working day.

6. Any discharge to air from the exercise of this consent shall not give rise to any offensive, objectionable or toxic levels of dust or odour at or beyond the boundary of the property on which the abrasive blasting is occurring.

7. Dry sand blasting shall be used in yard and mobile operations only when specified by a client. High pressure water blasting, wet sand blasting, grit blasting, vacuum blasting or an equivalent alternative process must be used when practicable.

8. It shall be the responsibility of the consent holder to ensure that all operators of abrasive blasting equipment understand and comply with all of the conditions of this consent prior to the commencement of any work for which this consent is required.

Operations conducted within permanent facilities

9. All emissions from abrasive blasting, surface preparation or surface coating operations and all other associated emissions from abrasive blasting, shall be contained and treated, as far as is practicable, prior to discharge beyond any operations enclosure. All gas streams ventilated or otherwise emitted from an enclosure shall be treated to a concentration of total particulate matter of less than 125 mg/m^3 [natural temperature & pressure] corrected to dry gas basis, at any time.

10. The dust deposition rate beyond the property boundary arising from the discharge, shall be less than 4.0 g/m^2/30 days.

11. The final discharge after any pre-treatment shall not contain lead [Pb] or Pb components at a concentration greater than 0.7 mg/m^3 as Pb, chromium [Cr] or Cr compounds at a concentration of 1.5 mg/m^3 as Cr, or zinc [Zn] or Zn compounds at a concentration of 15 mg/m^3 as Zn [discharge corrected to 0 degrees Celsius and dry gas], at any time.

Yard operations

12. From time to time, the consent holder may receive for abrasive blasting or other surface treatment, an item that, because of its bulk, weight, or other factor, cannot be treated inside the appropriate facility. Such yard operations shall not be permitted on a frequent or continual basis, or other than in exceptional circumstances.

13. Prior to commencing any yard operation as described in special condition 12 above, the consent holder shall specifically provide written notification to the Chief Executive, Taranaki Regional Council.

14. All items which cannot be treated within the properly enclosed facilities shall be screened by means of covers, tarpaulins, cladding or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris.

Mobile operations

15. All items or premises to be blasted from a mobile blasting unit shall be screened by means of covers, tarpaulins, cladding, or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris and materials to the satisfaction of the Chief Executive, Taranaki Regional Council.

16. Prior to undertaking abrasive blasting from a mobile blasting unit within residential areas, the consent holder shall notify the relevant District Council.

17. Where abrasive blasting or surface coating from a mobile blasting unit is to take place within 100 metres of a watercourse, the consent holder shall provide written notification to the Chief Executive, Taranaki Regional Council, prior to any operation commencing. The Chief Executive, Taranaki Regional Council, may require additional measures to prevent, minimise or mitigate any potential for adverse environmental effects. It shall be the responsibility of the consent holder to ascertain such measures prior to commencing an abrasive blasting operation, and to comply with any and all such measures at all times.

18. Dry abrasive blasting from a mobile blasting unit shall be conducted within 200 metres of any dwelling place or property boundary only with the written approval of the Chief Executive, Taranaki Regional Council, and then only after either public notice or individual notice to all affected owners or occupiers has been given.

19. The suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions], and the deposition of dust shall not exceed 0.13 g/m^2/day beyond the property boundary or beyond 50 metres of the discharge when sited on public amenity areas, whichever is less.

20. The discharge shall not give rise to any of the following effects in any surface watercourse:

    a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
    b) any conspicuous change in the colour or visual clarity;
    c) any emission of objectionable odour;
    d) the rendering of fresh water unsuitable for consumption by farm animals;
    e) any significant adverse effects on aquatic life;
    f) an increase in suspended solids of more than 10 g/m^3;
    g) turbidity above 4 nephelometric turbidity units [NTU], except that if the turbidity within the water body is above 3.2 NTU, no more than 25% increase in NTU;
    h) any increase in the concentration of zinc, lead, arsenic, chromium or thorium-based products.

Review

21. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2005 and/or June 2008 and/or June 2011 and/or June 2014 and/or June 2017, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 August 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Transpacific Industrial Solutions P O Box 7076 NEW PLYMOUTH
Review Completed Date:	27 August 2008 [Granted: 5 September 1995]

Conditions of Consent

Consent Granted:	To discharge up to 65 litres/second of stormwater from a truck depot premises into the Waitaha Stream at or about (NZTM) 1701210E-5678852N
Expiry Date:	1 June 2014
Site Location:	Hudson Road, Bell Block
Legal Description:	Lots 36 & 37 DP 12911 Bell Dist Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a. On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b. Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c. The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
   i. the administration, monitoring and supervision of this consent;
   ii. charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
   iii. charges authorised by regulations.

Special conditions

Condition 1 [changed]

1. Constituents in the discharge shall meet the standards shown in the following table:

Constituent	Standard
pH	Within the range 6.0 to 8.5
Suspended solids	Concentration not greater than 100 gm^{-3}
Oil and grease	Concentration not greater than 15 gm^{-3}

This condition shall apply prior to the entry of the stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

Conditions 2 to 3 [unchanged]

2. That allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to all or any of the following effects in the receiving water:

   (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   (ii) any conspicuous change in the colour or visual clarity;
   (iii) any emission of an objectionable odour;
   (iv) any significant adverse effects on aquatic life, habitats, or ecology;
   (v) any undesirable biological growths.

3. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Condition 4 [new]

4. Before 30 November 2008 the consent holder shall prepare and thereafter maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) on site hazardous substance storage;
   b) general housekeeping; and
   c) management of the interceptor systems.

Signed at Stratford on 27 August 2008

For and on behalf of
Taranaki Regional Council

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Chief Executive

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Weatherford New Zealand Limited P O Box 7162 NEW PLYMOUTH
Review Completed Date:	21 August 2008 [Granted: 5 September 1995]

Conditions of Consent

Consent Granted:	To discharge up to 130 litres/second of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream at or about (NZTM) 1701110E-5678552N
Expiry Date:	1 June 2014
Site Location:	Dakota Place, Bell Block
Legal Description:	Lots 5-7 DP 12035 Lots 2 & 3 DP 11781 Lot 4 DP 12035 Bell Dist Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Condition 1 [changed]

1. Constituents in the discharge shall meet the standards shown in the following table:

Constituent	Standard
pH	Within the range 6.0 to 9.0
Suspended solids	Concentration not greater than 100 gm^{-3}
Oil and grease [to water]	Concentration not greater than 15 gm^{-3}
Oil and grease [to land]	Concentration not greater than 25 gm^{-3}

This condition shall apply prior to the entry of the treated stormwater and wastewater into the receiving waters, and prior to the discharge of wastewater on to land at designated sampling points approved by the Chief Executive, Taranaki Regional Council.

Conditions 2 to 4 [unchanged]

2. That the consent holder shall construct bunding around the oil/petroleum storage area to avoid the contamination of stormwater to the satisfaction of the Chief Executive, Taranaki Regional Council.

3. That allowing for a mixing zone of 10 metres extending downstream of any direct discharge or from the nearest boundary of the consent holder's property, the discharge shall not give rise to all or any of the following effects in the receiving water:

i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
ii) any conspicuous change in the colour or visual clarity;
iii) any emission of an objectionable odour;
iv) any significant adverse effects on aquatic life, habitats, or ecology;
i) any undesirable biological growths.

4. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Condition 5 [new]

5. Before 30 November 2008 the consent holder shall prepare and thereafter maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) on site hazardous substance storage;
   b) general housekeeping; and
   c) management of the interceptor systems.

Signed at Stratford on 21 August 2008

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Woodwards 2008 Limited P O Box 9036 NEW PLYMOUTH 4351
Decision Date:	17 August 2011
Commencement Date:	17 August 2011

Conditions of Consent

Consent Granted:	To discharge emissions into air from the combustion of untreated timber wastes at or about (NZTM) 1701037E-5678250N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	124 De Havilland Drive, Bell Block
Legal Description:	Lot 8 DP 11912 [Discharge site]

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent including [but not limited to]:

    - having regard to the prevailing and predicted wind speed and direction at the time of burning in order to minimise offsite effects;
    - allowing the waste material to dry before burning;
    - starting a small fire with the driest material and adding further material once it is blazing, as opposed to igniting a large stack and leaving it unattended.

2. The materials for combustion are restricted to untreated wood and wood wastes; and shall be combusted only when placed in a pit no closer than 20 metres to any boundary.

3. There shall be no objectionable or offensive odour to the extent that it causes an adverse effect at or beyond the boundary of the site.

    Note: For the purposes of this condition:

    - The site is defined as Lot 8 DP 11912; and
    - Assessment under this condition shall be in accordance with the *Good Practice Guide for Assessing and Managing Odour in New Zealand, Air Quality Report 36, Ministry for the Environment, 2003.*

4. The consent holder, or an authorised agent, shall supervise burning at all times and the fires shall not be lit later than 12 noon on any day.

5. The dust deposition rate beyond the property boundary arising from the discharge shall be less than 1.3 $g/m^2/day$.

6. Any discharge to air from the site shall not give rise to any offensive, objectionable, noxious or toxic levels of dust at or beyond the boundary of the property, and in any case, suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions] beyond the boundary of the site.

7. The discharges authorised by this consent shall not give rise to a level of a contaminant or contaminants at or beyond the boundary of the site that is noxious or toxic.

8. This consent shall lapse on 30 September 2016, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 17 August 2011

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Zelam Limited P O Box 7142 NEW PLYMOUTH 4341
Change To Conditions Date:	1 September 2009 [Granted: 13 February 2008]

Conditions of Consent

Consent Granted:	To discharge emissions into the air from industrial agri-chemical formulation processes and associated processes at or about (NZTM) 1701317E-5678995N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	13 Hudson Road, Bell Block
Legal Description:	Lot 1 DP 17241 Blk II Paritutu SD

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 to 6 [unchanged]

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. Prior to undertaking any alterations to the plant, processes or operations, which may significantly alter the nature or quantity of contaminants emitted form the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

3. The discharges authorised by this consent shall not give rise to any offensive or objectionable odour at or beyond the site boundary in the opinion of an enforcement officer of the Taranaki Regional Council.

4. The concentration of benzyl chloride discharge from any vent shall not exceed 1 part per million [vol/vol].

5. The discharge of particulate matter from any vent or source shall not exceed 125 milligrams per cubic metre corrected to 0 degrees Celsius, 1 atmosphere of pressure and a dry gas basis.

6. In the event of any incident arising from the discharge of contaminants to air having an effect beyond the boundary of the site, the consent holder shall contact the Chief Executive, Taranaki Regional Council as soon as is practicable.

Conditions 7 & 8 [changed]

7. The consent holder shall maintain the scrubber liquor of the forced draft scrubbers at or greater than pH 9.

8. The consent holder shall monitor and record the pH of the forced draft scrubber liquors on a weekly basis. The consent holder shall forward this information in the form of a written report to the Chief Executive, Taranaki Regional Council, upon request.

Conditions 9 & 10 [new]

9. The consent holder shall maintain the excess free amine concentration of the scrubber liquor of the air displacement scrubber at or greater than 0.5%.

10. The consent holder shall monitor and record the excess free amine concentration of the scrubber liquor of the air displacement scrubber prior to each quaternary process run. The consent holder shall forward this information in the form of a written report to the Chief Executive, Taranaki Regional Council, upon request.

Conditions 11 & 12 [unchanged, formerly conditions 9 & 10]

11. The consent holder shall control all emissions to the atmosphere from the site so that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent measured at or beyond the boundary of the site shall not exceed:

    a) 1/30th of the relevant Occupation Threshold Value Time Weighted Average as defined in the Department of Labour Workplace Exposure Standards and Biological Indices for New Zealand; or

    b) by more than the Short Term Exposure Limit as defined in the Department of Labour Workplace Exposure Standards and Biological Indices for New Zealand; or

    c) if no Short Term Exposure Limit is set, more than three times the Time Weighted Average at any time.

12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 1 September 2009

For and on behalf of
Taranaki Regional Council

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Director-Resource Management

Appendix II

Biomonitoring report (fish survey)

Memorandum

To Lorraine Smith, Scientific Officer
From Bart Jansma, Scientific Officer
Date 24 October 2014
Document No. 1422715
Report No. BJ242

Fish survey conducted in the Waitaha Stream in relation to the industrial area, March 2014

Introduction

The Waitaha Stream catchment is a highly modified, small catchment located east of New Plymouth, bordering the Mangati, Waihowaka and Waiongana catchments. The catchment area of the Waitaha stream is approximately 300 hectares, which is about 60% the size of the Mangati Catchment. The upper reaches of the Waitaha Catchment have been heavily modified, with most headwater tributaries drained and buried, and most of the habitat removed. The catchment immediately below the drained headwaters is heavily industrialised, where numerous industrial discharges enter the Waitaha Stream. This extends to State Highway three, below which there is some urban catchment, and farmland. It is understood that it is intended for this farmland to be developed into an urban area, with the potential for a reserve alongside the Waitaha Stream, similar to that in the lower Mangati Stream catchment.

This fish survey was undertaken with the intention to quantify the fish populations in the stream, which will provide some indication of fish passage issues, and possible impacts from the industrial area. It is the first fish survey undertaken to date in this catchment, although in 1995 an investigation was undertaken in relation to an eel kill (Moore, 1995).

Methods

Three sites were sampled in this survey conducted on 27 March 2014 (Table 1, Figure 1). The sites were surveyed using the electric fishing method, which employed a Kainga EFM machine. Those fish captured were identified and counted, where possible. Inevitably some fish eluded capture, although some were identified before reaching cover. The length of each fish was estimated, following which they were released. Details of the sites surveyed are given in Table 1 and the location of sites surveyed in relation to the weir and fish pass are shown in Figure 1.

Table 1 Location of sites surveyed for fish in the Waitaha Stream on 27 March 2014

Site Number	Site code	Description	Altitude (m)	Distance Inland from sea (km)
1	WTH000035	De Havilland Drive	40	2.73
2	WTH000095	Connett Road	35	1.94
6	WTH000197	30m upstream of mouth	5	0.03

This survey was originally planned for January, but upon arrival at this time, it was observed that the stream was discoloured (Figure 1 (left top)

The Waitaha Stream catchment, including sampling sites. The dashed lines are piped sections

Photo 1), and it was decided to defer the survey for both practicality and health and safety reasons. This is because it would not have been possible to see the fish. In addition, this survey had been preceded by a sewage spill to the stream, which resulted in similar discolouration. The potential that there was sewage in the stream presented a significant risk of infection to the survey staff. Investigation subsequently determined that the discolouration was caused by a well buffered lime discharge. Due to the buffering, there was little impact on the pH of the stream.

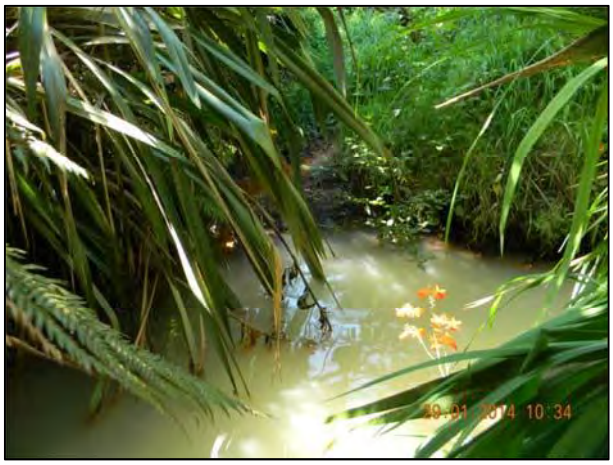


Figure 1 (left top)
The Waitaha Stream catchment, including sampling sites. The dashed lines are piped sections

Photo 1 (Left)
The Waitaha Stream at site 1 on 29 January 2014, contaminated by a lime discharge.

Photo 2 (Bottom left)
The Waitaha Stream at site 1 on 27 March 2014.

Photo 3 (Bottom right)
A foamy discharge at a stormwater pipe outlet, just downstream of Connett Road, 27 March 2014.

Results

This survey, undertaken during slow and low flows, again found discolouration at site 1. However, rather than being the grey white colour observed in January, the stream had a very dark, almost black colour, which appeared to be caused by tannins (Photo 2). As a result, visibility at site one was very limited. Visibility had improved somewhat at site 2, although the water was yellow and cloudy, while at the coast, there was little visible indication of pollution, although the stream was still discoloured, this time by what appeared to be iron oxide precipitate, being grey and cloudy. However, contamination of a different kind was observed at site 2, where a foaming discharge had recently occurred, evident by foamy water remaining in a pooled area at the stormwater pipe outlet (Photo 3).

With regards to observations relating to fish habitat, all sites had relatively good cover, with sites 1 and 2 having undercut banks and overhanging vegetation, and site 3 having undercut banks and macrophytes growing on the bed. Undercut banks, overhanging vegetation and macrophyte beds are all important to fish communities, as they provide places to hide during they day for the largely nocturnal fish community

The results of the survey conducted in the Waitaha Stream are presented in Table 2.

Table 2 Fish species recorded in the Waitaha Stream (fish lengths are estimated)

Site:		Site 1	Site 2	Site 3
Area fished:		~10m^2	~28 m^2	~15m^2
Longfin eel (*Anguilla dieffenbachii*)	Number	-	-	4
	Length range (mm)	-	-	150-350
Shortfin eel (*Anguilla australis*)	Number	-	1	3
	Length range (mm)	-	900	150-300
Redfin bully (*Gobiomorphus huttoni)*	Number	-	-	7
	Length range (mm)	-	-	20-60
Juvenile eel (*Anguilla sp.*) (<120mm)	Number	-	-	2
Juvenile bully (*Gobiomorphus sp.*) (<25mm)	Number	-	-	1
Total number of species		0*	1	3
Total number of fish		0*	1	17

*Movement was noted while sampling indicating the presence of a fish, probably an eel

Site 1

This site had the least area sampled, on account of the discolouration, but also due to the low flows restricting the amount of habitat suitable for sampling. Habitat at this site indicated that a moderate fish community could have been supported, as there was good water depth, undercut banks and overhanging vegetation. The results indicate an extremely depauperate community, with no fish confirmed as being present, although movement was noted in an area of deep water, which was most likely caused by an eel.

Site 2

This site was sampled both upstream and downstream of Connett Road. Only one fish was recorded at this site, being a large shortfin eel. It was noted at the time that this eel had atypical markings on its back, and it did not respond to the electrical current in a manner normally exhibited by eels. Normally, large eels will actively attempt to evade the electrical field, but this fish simply moved a short distance upstream, where it remained, caught up in debris (Photo 4). The area surveyed downstream of Connett Road had plentiful cover, but no fish were recorded from this area. It was noted however, that this location supported an extremely abundant population of worms, which came out of the sediment when the electrical current was applied. This was indicative of significant organic enrichment at this site. It is noted that a sewage pump station is located immediately upstream of Connett Road, and this pump station is known to overflow to the Waitaha Stream relatively frequently (Emily Roberts pers. comm.).

Photo 4 A large shortfin eel, recorded immediately upstream of Connett Road.

Site 3

This site contained habitat representative of a small rural stream, with little riparian shading, and some bank slumping. Three species were recorded at this location, being two species of eel, and redfin bully (Table 2). No large fish were recorded, with all fish likely to be less than fifteen years old (Chisnall and Hicks, 1993).

In general, the species recorded at site 3 are typical of a small pastoral stream, in terms of species richness and abundance. Other species may be present e.g. kokopu, but the electric fishing sampling technique is not suited to these nocturnal fish.

Fish barriers

A natural barrier to fish passage was observed when undertaking this survey at site 3 (Photo 5), although it had been augmented somewhat by human activities. A similar waterfall is located at the mouth of the Mangati Stream, and surveys have confirmed that species that can negotiate this waterfall include longfin and shortfin eel, redfin and common bully and banded and giant kokopu. It is therefore reasonable to assume that these species could also enter the Waitaha Stream.

In addition, two artificially created ponds located downstream of SH3 have outlets that are likely to form a barrier to fish passage, and the culvert under SH3 is a recognised barrier to

fish passage. These barriers may have influenced the community composition in the headwaters i.e. sites 1 and 2, and therefore need to be considered when drawing conclusions from the sampling results.

Photo 5 A natural barrier to fish passage in the Waitaha Stream located immediately upstream of the coast.

Summary and Conclusions

On 27 March 2014 an electric fishing survey was undertaken at three sites in the Waitaha Stream, with the intention to quantify the fish populations in the stream to provide some indication of fish passage issues, and possible impacts from the industrial area. The sites sampled were located downstream of De Havilland Drive (site 1), around Connett Road (site 2) and upstream of the coast (site 3).

From the results of this survey, it appears that the upper reaches of the Waitaha Stream supported a depauperate fish community. Site one recorded no fish, although movement indicated the presence of an eel, and only one fish, a shortfin eel, was recorded at site 2. Site 3 recorded results more typical of a small pastoral stream, with longfin eel, shortfin eel and redfin bully all present in moderate numbers. No freshwater crayfish were recorded at any site, which is relatively unusual, and significant numbers of worms were observed coming out of the stream sediment downstream of Connett Road while surveying, indicative of significant enrichment at this site.

It is important to note that contamination of the Waitaha Stream was observed at both sites 1 and 2 in the current survey, with site 1 having a very dark, almost black flow, which appeared to be caused by tannins, and a stormwater pipe near site 2 having recently discharged foamy water. Furthermore, this survey was originally planned for January 2014, but was abandoned due to the stream flowing almost white at site 1, which was subsequently found to be due to a lime discharge upstream of De Havilland Drive. There have also been relatively frequent discharges of raw sewage to the Waitaha Stream, primarily from the pumping station located at Connett Road which could explain the abundant population of worms observed at this location.

With regards to fish passage, there is a natural waterfall at the coast, which is likely to impede the passage of poor climbers past this point, except during the highest of high tides. There are also artificially created barriers to fish passage between sites 2 and 3, with two

ponds and the SH3 crossing having perched culverts. These barriers have the potential to restrict the upstream passage of fish, reducing both species richness and abundance. This has the potential to complicate the assessment of results. Some perspective is provided by surveys undertaken in the adjacent Mangati Catchment, which also has a waterfall at the mouth, which have recorded abundant populations of eels, banded kokopu and redfin bully, with giant kokopu also present.

It is clear from the results that the stream has the potential to support good populations of redfin bully and eels, with banded kokopu also likely to be present. This can be concluded from the results at site 3, and what was previously recorded in the Mangati Stream. It is likely that banded kokopu are present in the lower catchment, but the survey technique was unlikely to record this nocturnal species. It is likely that redfin bully passage is restricted, with this species either not present or present in very low numbers upstream of SH3. However, there should still be a relatively normal population of eels upstream of this point, as habitat is suitable, and they are formidable climbers.

The extremely low numbers of eels upstream of SH3 indicates that the industrial area may be having a detrimental effect on the water quality. The behaviour of the only fish recorded in this reach indicated that it may be sick, and the abundant population of worms below Connett Road indicated significant organic enrichment. Furthermore, three independent instances of contamination were noted while performing this fish survey.

Overall, it is apparent that this catchment is suffering from a number of factors. Barriers to fish passage have restricted some fish from entering the catchment, and also from progressing up the catchment. The piping of headwaters will have detrimentally affected the hydrology of the catchment, as has the increase in impermeable surface area, as the catchment is developed. In addition, the apparent frequency of contamination reduces water quality, and has the potential to have both chronic and acute impacts on the stream biota, which either leads to fish emigration, or death. It is understood that the lower stream catchment is earmarked for urban development, with some thought being given to establishing a reserve and walkway, similar to that alongside the Mangati Stream. While this has the potential to improve habitat conditions in the lower catchment, it is important that the water quality entering this reach is of such a quality that the stream biota is not detrimentally affected.

References

Chisnall, BL and Hicks, BJ., 1993: Age and growth of longfinned eels (Anguilla dieffenbachii) in pastoral and forested streams in the Waikato River basin, and in two hydroelectric lakes in the North Island, New Zealand. New Zealand Journal of Marine and Freshwater Research, 27:317-332

McDowall R.M., 2000: The Reed Field Guide to New Zealand Freshwater Fishes. Reed books, Reed Publishing (New Zealand) Ltd. 224pp.

Moore, SC., 1995: Eel kill in the Waitaha Stream, 5 December 1995. SM563.

Appendix III

Results of chemical monitoring of the Waitaha Stream and industrial drainage system

Table: Results of chemical analyses for the Waitaha Stream and industrial discharges Date: 21 January 2014

Site description	Site	Sample number	Time	B g/m³	BOD g/m³	CONDY mS/m @ 20C	CUAS g/m³	CUD g/m³	DRP g/m³ P	FORM g/m³	MNAS g/m³	NH3 g/m³ N	NH4 g/m³ N	NIAS g/m³	O&G g/m³	PBAS g/m³	PH pH	PHENOL g/m³	SS g/m³	TEMP Deg.C	TURBY NTU	ZNAS g/m³	ZND g/m³
Waitaha ~5m u/s De Havilland Dr	WTH000013	TRC148562	08:51	-	-	11.8	-	-	-	<0.1	-	0.00005	0.038	-	b	-	6.6	<0.02	-	15.9	6.2	-	-
Waitaha at De Havilland Dr	WTH000035	TRC148563	09:08	0.07	-	6.5	-	-	0.281	-	-	0.00072	0.290	-	b	-	6.8	-	-	17.4	30	-	-
unnamed trib at De Havilland Dr	WTH000037	TRC148564	09:04	-	-	11.0	-	-	-	-	-	-	-	-	4.6	-	6.6	-	-	16.7	43	-	-
Weatherfords stormwater	STW002025	TRC148565	09:03	-	-	2.7	0.03	-	0.009	-	0.10	-	-	0.02	<0.5	<0.05	7.1	-	130	19.0	-	0.661	-
Weatherfords ex oil separator to trib	IND002031	TRC148566	09:35	-	-	16.7	0.16	-	1.04	-	0.92	-	-	0.06	9.5	0.10	7.1	-	-	18.4	-	0.322	-
Weatherfords ex oil separator to land	IND002021	TRC148567	09:32	-	-	9.3	0.02	-	0.003	-	-	-	-	-	<0.5	<0.05	7.8	-	2	17.4	-	0.624	-
Waitaha 120m d/s De Havilland Dr	WTH000040	TRC148568	09:23	-	-	11.6	-	0.004	0.039	-	-	0.00088	0.280	-	b	<0.05	6.9	-	-	17.4	220	-	0.075
Weatherford unnamed trib u/s confluence	WTH000041	TRC148569	09:15	-	-	7.6	-	0.005	-	-	0.28	-	-	<0.02	b	-	6.5	-	-	17.2	160	-	0.065
Waitaha Stream at old farm access bridge	WTH000050	TRC148570	10:30	0.10	-	10.6	-	0.005	0.048	-	-	-	-	-	b	-	6.7	-	-	17.2	65	-	0.049
Un named tributary d/s Taranaki Sawmills	WTH000051	TRC148577	10:36	0.17	-	11.9	-	-	-	-	-	-	-	-	b	-	6.6	-	90	17.3	130	-	-
Taranaki Sawmill (unnamed) tributary u/s confluence with Waitaha Stream	WTH000059	TRC148578	10:03	0.06	6.0	3.8	-	-	-	-	-	-	-	-	b	-	6.5	-	100	17.5	120	-	-
Parker Drilling	STW001110	TRC148571	11:28	-	-	5.6	-	-	-	-	-	-	-	-	<0.5	-	6.8	-	5	18.2	-	-	-
NPDC U/s Connett Rd extension	STW001111	TRC148572	11:10	-	-	6.4	-	-	-	-	-	-	-	-	b	-	6.7	-	28	18.4	-	-	-
Symons Property Developments Limited	STW002083	TRC148573	10:56	-	-	17.1	-	-	-	-	-	-	-	-	<0.5	-	6.4	-	2	18.8	0.72	-	-
Pinnacle at Connett Rd bridge	STW001112	TRC148574	10:45	-	-	11.3	-	-	-	-	-	-	-	-	1.2	-	7.7	-	890	18.1	1300	-	-
C&O Concrete	STW001060	TRC148575	10:20	-	-	9.3	-	-	-	-	-	-	-	-	b	-	8.5	-	27	16.5	-	-	-
Onyx stormwater	STW001059	TRC148576	10:14	-	-	5.3	-	-	-	-	-	-	-	-	5.0	-	7.4	-	38	18.0	-	-	-
NPDC Connett Rd stormwater	STW001061	TRC148579	10:36	-	-	8.5	-	-	-	-	-	-	-	-	29	-	6.8	-	69	18.4	-	-	-
Waitaha Stream 30m d/s of Connett Rd	WTH000095	TRC148580	10:03	0.09	-	6.8	-	-	0.121	-	-	0.00050	0.238	-	9.8	-	6.7	-	-	18.2	65	-	-
Roadside drain above De Havilland Dr	SSM000068	TRC148581	09:28												67								

Key: B=Boron, g/m³; BOD=Biochemical oxygen demand, g/m³;CONDY = conductivity at 20 C, mS/m; CUD, CUAS = Copper, dissolved and acid soluble, g/m³; DRP = dissolved reactive phosphorus, g/m³P; FORM = formaldehyde, g/m³; , MNAS=Manganese, acid soluble, g/m³; NH_3 = Ammonia, g/m³N; NH_4 = Ammoniacal nitrogen, g/m³N; NIAS=Nickel, acid soluble, g/m³; NNN = Nitrate/Nitrite nitrogen, g/m³N; O&G = oil and grease, g/m³; PBAS = Lead, acid soluble, g/m³; SS = suspended solids, g/m³; TEMP = temperature, °C; TURBY = turbidity, NTU, ZND, ZNAS = Zinc, dissolved and acid soluble, g/m³

a not discharging at the time of the sampling survey

b parameter not determined, no visible hydrocarbon sheen and no odour

Table: Results of chemical analyses for the Waitaha Stream and industrial discharges Date: 25 June 2014

Site description	Site	Sample number	Time	B g/m^3	BOD g/m^3	CONDY mS/m @ 20C	CUAS g/m^3	CUD g/m^3	DRP g/m^3 P	FORM g/m^3	NH3 g/m^3 N	NH4 g/m^3 N	O&G g/m^3	PBAS g/m^3	PH pH	PHENOL g/m^3	SS g/m^3	TEMP Deg.C	TURBY NTU	ZNAS g/m^3	ZND g/m^3
Waitaha ~5m u/s De Havilland Dr	WTH000013	TRC1410454	11:01	-	-	13.8	-	-	-	<0.1	0.00001	0.009	b	-	6.6	<0.02	-	15.4	6.7	-	-
Waitaha at De Havilland Dr	WTH000035	TRC1410455	11:20	-	-	14.4	-	-	-	-	-	-	b	-	6.6	-	-	14.6	40	-	-
unnamed trib at De Havilland Dr	WTH000037	TRC1410456	11:10	-	-	14.6	-	0.004	0.356	-	0.00236	1.15	b	<0.05	6.8	-	-	14.8	140	-	0.226
Weatherfords stormwater	STW002025	TRC1410457	12:05	-	-	14.6	-	0.003	0.098	-	0.00105	0.643	b	<0.05	6.7	-	-	14.9	58	-	0.183
Weatherfords ex oil separator to trib	IND002031	TRC1410458	11:55	-	-	4.3	<0.01	-	<0.003	-	-	-	b	<0.05	7.3	-	-	13.3	-	0.621	-
Weatherfords ex oil separator to land	IND002021	TRC1410459	11:50	-	-	13.3	0.06	-	0.063	-	-	-	6.2	0.06	7.0	-	19	13.0	-	0.246	-
Waitaha 120m d/s De Havilland Dr	WTH000040	TRC1410460	11:45	-	-	10.1	0.04	-	0.004	-	-	-	<0.5	<0.05	7.1	-	140	13.6	-	1.08	-
Weatherford unnamed trib u/s confluence	WTH000041	TRC1410461	12:10	-	-	23.3	-	<0.001	-	-	-	-	b	-	6.6	-	-	15.6	77	-	0.042
Waitaha Stream at old farm access bridge	WTH000050	TRC1410462	12:30	0.09	-	21.6	-	-	-	-	-	-	b	-	7.2	-	710	12.6	790	-	-
Un named tributary d/s Taranaki Sawmills	WTH000051	TRC1410463	12:40	-	-	15.3	-	-	-	-	-	-	1.3	-	7.3	-	29	13.2	-	-	-
Taranaki Sawmill (unnamed) tributary u/s confluence with Waitaha Stream	WTH000059	TRC1410464	12:50	-	-	8.0	-	-	-	-	-	-	b	-	7.7	-	9	13.5	-	-	-
Parker Drilling	STW001110	TRC1410465	13:05	0.06	-	13.3	-	0.002	0.017	-	-	-	b	-	6.7	-	-	14.5	400	-	0.050
NPDC U/s Connett Rd extension	STW001111	TRC1410466	13:15	0.09	8.1	11.8	-	-	-	-	-	-	b	-	6.7	-	460	14.6	420	-	-
Symons Property Developments Limited	STW002083	TRC1410467	13:25	-	-	8.7	-	-	-	-	-	-	b	-	9.1	-	590	14.1	640	-	-
Pinnacle at Connett Rd bridge	STW001112	TRC1410468	13:20	-	-	6.4	-	-	-	-	-	-	b	-	7.8	-	170	14.0	-	-	-
C&O Concrete	STW001060	TRC1410469	13:30	0.06	-	10.2	-	-	0.014	-	0.00095	0.301	b	-	7.0	-	-	14.4	350	-	-
Onyx stormwater	STW001059	TRC1410470	13:58	-	-	10.1	-	-	-	-	-	-	b	-	7.3	-	83	12.0	130	-	-
NPDC Connett Rd stormwater	STW001061	TRC1410471	14:10	-	-	5.5	-	-	-	-	-	-	b	-	7.0	-	67	14.3	-	-	-
Waitaha Stream 30m d/s of Connett Rd	WTH000095	TRC1410472	14:25	-	-	5.2	-	-	-	-	-	-	0.6	-	6.9	-	46	13.7	-	-	-

Key: B=Boron, g/m^3; BOD=Biochemical oxygen demand, g/m^3;CONDY = conductivity at 20 C, mS/m; CUD, CUAS = Copper, dissolved and acid soluble, g/m^3; DRP = dissolved reactive phosphorus, g/m^3P; FORM = formaldehyde, g/m^3; MND, MNAS=Manganese, dissolved and acid soluble, g/m^3; NH_3 = Ammonia, g/m^3N; NH_4 = Ammoniacal nitrogen, g/m^3N; NID,NIAS=Nickel, dissolved and acid soluble, g/m^3; NNN = Nitrate/Nitrite nitrogen, g/m^3N; O&G = oil and grease, g/m^3; PBAS = Lead, acid soluble, g/m^3; SS = suspended solids, g/m^3; TEMP = temperature, ^oC; TURBY = turbidity, NTU, ZND, ZNAS = Zinc, dissolved and acid soluble, g/m^3

a not discharging at the time of the sampling survey

b parameter not determined, no visible hydrocarbon sheen and no odour

Appendix IX

Rule 23 of the Regional Freshwater Plan (permitted stormwater rule)

Discharge of stormwater

Activity	Rule	Standards/Terms/Conditions	Classification	Notification	Control/Discretion	Policy Reference
Discharge of stormwater into or onto land or into water (excluding those wetlands listed in Appendix II) that is not provided for by Rules 25-27	23	• The discharge shall not originate from any industrial or trade premise where the active area of the site is greater than 0.5 ha, unless there is an interceptor system in place that is designed and managed so that it will keep stormwater from entraining contaminants; • The discharge shall not originate from any industrial or trade premise where hazardous substances are used, stored or potentially spilt unless: (i) there is an interceptor system in place that is designed and managed so that it will keep stormwater from entraining contaminants; or (ii) there is an interceptor system in place that is designed and managed so that it is capable of capturing contaminated stormwater and either diverting it to trade waste or containing it and/or removing or reducing the contaminants such that: - any spills can be recovered; - the discharge shall not contain any persistent or bioaccumulative substances; - the discharge shall not breach any other specified condition of this rule; and a spill contingency and interceptor system maintenance plan is maintained and regularly updated for the site; • The discharge shall not originate from any industrial or trade premises where the movement of rock, earth or other soil material is taking place, unless that movement is being undertaken in connection with site landscaping, or the installation, construction, maintenance or demolition of buildings, structures or equipment; • The discharge shall not be greater than is able to be discharged from a pipe of 900 mm in diameter;	Permitted			

Discharge of stormwater (continued)

Activity	Rule	Standards/Terms/Conditions	Classification	Notification	Control/Discretion	Policy Reference
		• The discharge shall not cause significant erosion, scour or deposition; • Discharge that will, or is liable to enter surface water, shall not exceed the following: pH 6.0-9.0 oil and grease 15 gm^{-3} suspended solids 100 gm^{-3} BOD 5 gm^{-3} unionised ammonia 0.025 gm^{-3} free chlorine 0.2 gm^{-3} • The discharge shall not give rise to any of the following effects in receiving waters after reasonable mixing: (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; (b) any conspicuous change in the colour or visual clarity; (c) any emission of objectionable odour; (d) the rendering of fresh water unsuitable for consumption by farm animals; (e) any significant adverse effects on aquatic life.	Permitted			

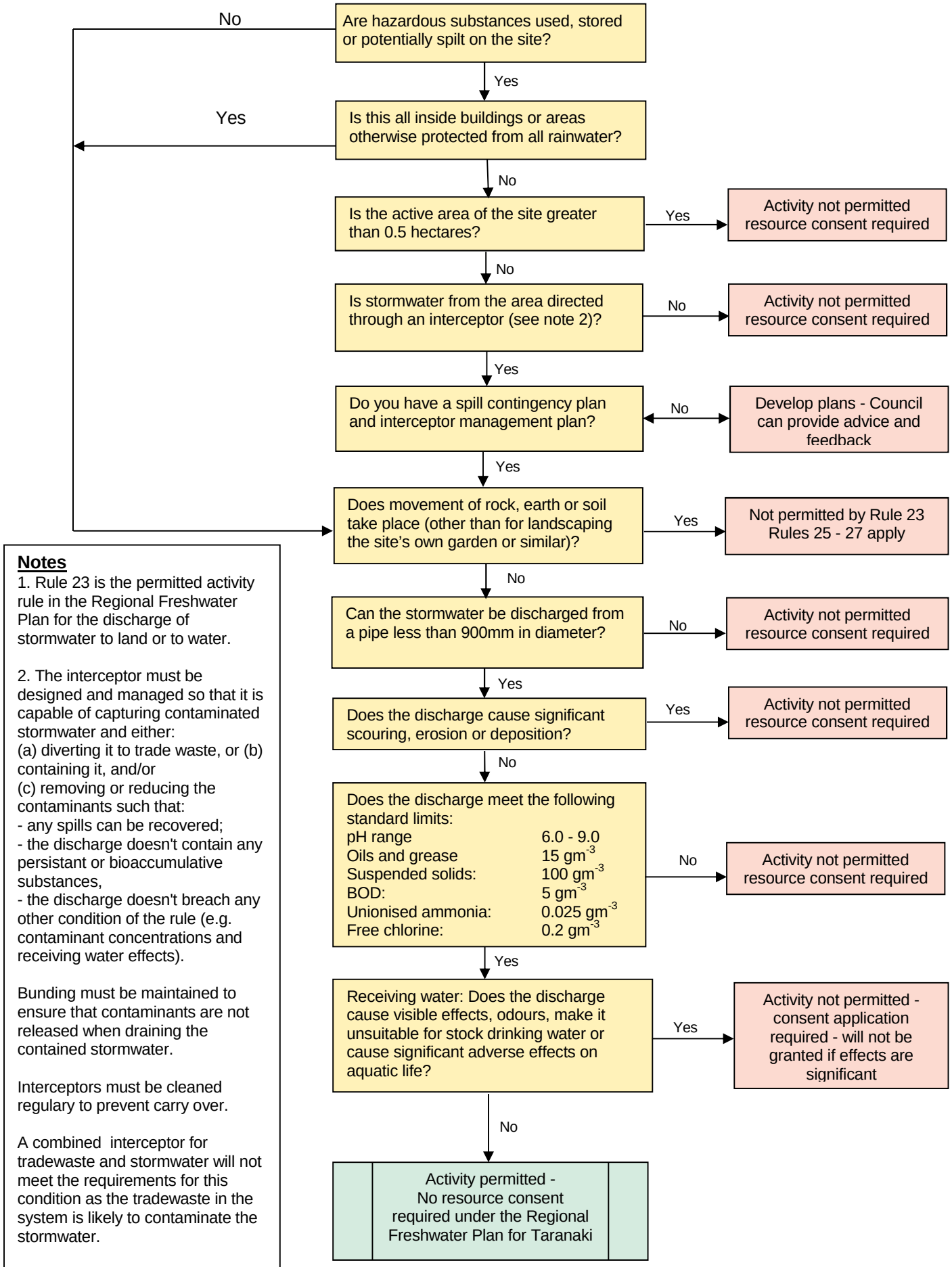
Explanation

Rule 23 provides for the large number of stormwater discharges that have no or only minor adverse effects on the environment. A resource consent is not required for stormwater discharges to either land or water so long as the discharge can comply with the conditions of this rule. The first condition restricts discharges from industrial or trade that are over 0.5 hectares in area, unless the site has a means of ensuring that stormwater will not be contaminated (a roofed site is a good example of this). The reference to the 'active area' of the site refers to that part of the site where industrial and trade activity is taking place, including areas on site where goods, products, hazardous substances or other materials are stored, used or potentially split, but does not include areas that are grassed; landscaped; or roofed; or carparks which are used exclusively for non-goods vehicles.

Any sites storing and/or using hazardous substances must either ensure that the stormwater cannot be contaminated (for example is the site is roofed) or that an interceptor system is designed and managed so that contaminated stormwater is diverted to trade waste or captured and contained and/or treated so that the contamination is removed and reduced. In this regard the bunding of hazardous substances and the capture and treatment of stormwater would enable the discharge of stormwater from sites under 0.5 hectares to be a permitted activity. The condition also requires that a contingency plan be maintained and regularly updated for the site.

The third condition restricts the discharge of stormwater from any industrial and trade premises where the movement of rock and other earth material is taking place, other than the types of minor works outlined in the condition. This is consistent with other rules in the Plan relating to stormwater discharges from soil disturbance activities.

Rule 23 also contains conditions relating to the receiving environment to ensure that adverse effects are avoided, remedied or mitigated. Conditions relate to both water quality (by specifying discharge limits and receiving water effects) and the quantity of water that is being discharged (to avoid erosion, scour or deposition).



Notes

1. Rule 23 is the permitted activity rule in the Regional Freshwater Plan for the discharge of stormwater to land or to water.

2. The interceptor must be designed and managed so that it is capable of capturing contaminated stormwater and either:
(a) diverting it to trade waste, or (b) containing it, and/or
(c) removing or reducing the contaminants such that:
- any spills can be recovered;
- the discharge doesn't contain any persistant or bioaccumulative substances,
- the discharge doesn't breach any other condition of the rule (e.g. contaminant concentrations and receiving water effects).

Bunding must be maintained to ensure that contaminants are not released when draining the contained stormwater.

Interceptors must be cleaned regulary to prevent carry over.

A combined interceptor for tradewaste and stormwater will not meet the requirements for this condition as the tradewaste in the system is likely to contaminate the stormwater.