

DM & DL Bourke
Quarry Monitoring Programme
Biennial Report
2013-2015

Technical Report 2015-26

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Executive summary

DM & DL Bourke (the Company) operate a quarry located on Onewhaia Road, Normanby in the Waingongoro catchment. The Company holds a resource consent authorising the discharge of treated stormwater into the Waingongoro River. This biennial report for the period July 2013-June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental performance during the period under review, and the results and environmental effects of the Company's quarrying activities.

The Company holds a resource consent, which includes a total of nine conditions setting out the requirements that the Company must satisfy. This renewed consent was granted in January 2012 for a period expiring in June 2029. The next optional review is in June 2017.

During the monitoring period, the Company demonstrated an overall high level of environmental performance.

The Council's monitoring programme for the 2013-2015 period included five inspections of the site and receiving waters. No water samples were collected for chemical analyses.

During the 2013-2015 monitoring period the site was found to be generally tidy and well maintained, and as such, any stormwater that was discharged from site was subjected to appropriate treatment. There were no unauthorised incidents associated with the Company's quarry during this period.

The Company's quarry achieved a high level of both environmental and administrative performance and compliance with the resource consent in the 2013-2015 monitoring period.

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. In the 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

This report includes recommendations for the 2015-2017 monitoring period.

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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 for the period July 2013 to June 2015 and describes the monitoring programme associated with the resource consent held by the DM & DL Bourke (the Company) in relation to their quarry operation. The Company operates a quarry situated on Onewhaia Road, Normanby.

This report covers the results and findings of the monitoring programme implemented by the Council in respect to the consent held by the Company that relates to discharges of water in the Waingongoro catchment. This is the eleventh report to be prepared by the Council to cover the Company's stormwater discharges and their effects.

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 *Resource Management Act 1991* and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consent held by the Company in the Waingongoro catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted on the consent holders' site.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretation, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2015-2017 monitoring period.

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 (for example 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 Evaluation of environmental and administrative performance

Besides discussing the various details of the performance and extent of compliance by the consent holder during the period under review, this report also assigns a rating as to the 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. In the 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description

1.1.1 Background

In the past, a large percentage of aggregate production came from river-based sites within Taranaki. The Waiwhakaiho River supplied much of New Plymouth's requirements as far back as the 1950s with the Waitara River, Waiongana River, Kapuni Stream and Waingongoro River also providing a valuable source of aggregate. The aggregate source within these rivers was often over-exploited. The protective armouring of the boulders and gravel was removed in places, exposing the underlying erodible ash beds and creating deep narrow channels, which moved progressively upstream with no noticeable recovery. This brought about the need for the Shingle Extraction Bylaw introduced in 1974. Aggregate extraction from rivers was then controlled through the issue of permits accompanied by a set of conditions, with the removal of river-based aggregate being restricted to that for river control purposes only.

Historically, land-based sites required steady markets to compete with the easily won river-based extraction operations. However, in the early 1980s, due to the restriction placed on river-based aggregate extraction (and the completion of various major river control programmes and 'Think Big' projects) land-based sites became more widespread (Taranaki Regional Council, 1992).

Currently, there are twenty six quarries in the region that are monitored by the Council. These quarries are generally located in a reasonable proximity to urban areas, from which the greatest demand for aggregate stems.

Quarrying and extraction of gravel in NZ is regulated by two statutory processes. Allocation and protection of priority rights to extract gravel is obtained under the Crown Minerals Act from NZ Petroleum and Minerals, a division of the Ministry of Economic Development.

Regulatory responsibility for control of environmental effects of quarrying and extraction is under the RMA as applied by respective regional councils. In some cases these controls may act as a constraint or limitation on allocation decisions.

Sections 15 and 30 of the RMA give regional councils responsibility for the discharge of contaminants into the environment. Discharges of water into water, contaminants onto or into land that may result in water contamination, and contaminants from industrial premises into air or onto/into land, may not take place unless expressly allowed by a rule in a regional plan, a resource consent, or regulations. Aggregate extraction usually involves washing aggregates, and therefore requires the discharge of wastes. Other discharges, such as emissions to air from crushing and processing plants, disposal of spoil and solid wastes, and discharges of stormwater are also the responsibility of regional councils.

1.1.2 DM & DL Bourke quarry

The Company's quarrying operation is located on the true left bank of the Waingongoro River at Onewhaia Road, north of Normanby. The site lies on a small river terrace adjacent to the Waingongoro River, elevated four metres above the river. The quarry has been operating since 1992 both by the owners for on-farm purposes, and also by contract operators for commercial aggregate sales. The quarry produces less than 3,000 m³/year and no washing is performed at this site. Machinery includes a dry crusher and screening plant, digger, and payloader. A 600 litre diesel tank/trailer is towed in as required.



Figure 1 Location of DM & DL Bourke quarry site

The quarrying area of approximately 3,600 m² is contoured and banded. All stormwater is directed through the settling pond before discharging to the Waingongoro River. Any sediment entrained in the stormwater is able to settle to the bottom of the settling pond to ensure only clean stormwater is discharged through the pipe and into the river. The settling pond is cleaned out once a year and the channels are cleaned out as is necessary. The existing riparian buffer also helps to filter sediment from stormwater should there be any overflow. The river is bounded by a 10 metre buffer strip.

The quarry is only in operation for approximately 20-25 days out of the year. Stock typically grazes the area through out the year.

1.3 Resource consents

1.1.3 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.

Water quality is a primary concern to the Council with regard to aggregate extraction. A quarry can operate as either a 'dry' quarry discharging only stormwater or a 'washing' quarry where aggregate washing facilities are in place. Many of the quarries in Taranaki have some form of washing facility and also operate in the vicinity of a water body or have some form of discharge into a water body.

Waste water from aggregate washing has a high silt concentration. Discharge of this water into a waterbody, particularly to a river during low flow, results in a smothering of instream life and deterioration in aesthetic conditions and can affect downstream abstractions of water, local fisheries and recreational activity.

Stormwater is generally less contaminated (in terms of silt concentration) and run-off tends to occur when rivers are in higher flow. This means that the effect of silt contamination is reduced due to lower quantities, dilution and carrying capacity. The installation of appropriate stormwater diversion structures, together with construction and maintenance of contaminated stormwater and aggregate washing discharge treatment facilities are most important in maintaining water quality.

The Company hold water discharge permit **5001-2** to discharge treated stormwater from a quarry site into the Waingongoro River. This permit was issued by the Taranaki Regional Council on 19 January 2012 under Section 87(e) of the RMA.

This consent has a review date in June 2017 and will expire in June 2029.

There were nine special conditions attached to consent 5001-2.

Condition 1 stipulates that the consent holder shall adopt best practice.

Condition 2 stipulates that no aggregate washing shall take place at the quarry site.

Condition 3 requires measures to be taken to control erosion and minimise silt and sediment in the stormwater.

Condition 4 states there shall be no direct discharge of untreated stormwater into surface water.

Condition 5 requires that the site is contoured and bunded so that all water is directed to a silt control structure for treatment prior to discharge

Condition 6 sets chemical limits on the concentration of the discharge prior to entry to the receiving waters.

Condition 7 requires that the discharge cannot cause specified adverse effects beyond mixing zone.

Condition 8 requires the consent holder to provide a contingency plan to the council.

Condition 9 makes provision for a review of the consent

A copy of the resource consent is attached to Appendix I of this report.

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the RMA sets out an obligation for the Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region.

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 Company's quarry consisted of three primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans and;
- consultation on associated matters.

1.4.3 Site inspections

Five inspections were conducted over the 2013-2015 monitoring period. The main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. The neighbourhood and receiving waters were surveyed for environmental effects.

1.4.4 Chemical sampling

A sampling site (STW002062) has been established by the Council, with a sample of the discharge at the stormwater outfall to be collected once per year. Any samples collected are analysed for pH and suspended solids.

2. Results

2.1 Inspections

Council staff undertook five compliance monitoring inspections during the period under review. The inspection notices are summarised below:

1 May 2014

The site was well maintained and the extraction area was in a satisfactory condition. All stormwater collected onsite was being directed to the treatment pond. Although there was a lot of machinery onsite, only a small amount of product was stored at the time of the inspection. Of that product, some was being kept near the river boundary; it was asked that this product be monitored by staff as there was a potential risk for sediment to enter the river.

24 June 2014

The gates were open at the time of the inspection. No aggregate was being processed during the inspection. Again, there was only a small amount of processed metal stored on site. It was apparent that the extraction area was in the process of being stripped back. There was a large pile of clay and top soil present. It was noted that the stormwater pond had been used as a dump for farm rubbish. In the follow up letter, quarry staff were informed of how it is a contravention of the RMA to discharge a contaminant to groundwater. It was advised that any dumping of farm rubbish must occur at a location at least 25 metres from any waterways.

11 August 2014

No aggregate was being processed at the time of the inspection. Only a small amount of product was present on site. The new extraction area appeared well managed. The river boundary was also inspected and appeared to be in a satisfactory condition. The treatment pond also looked good.

18 November 2014

Heavy rain had preceded this inspection. The site appeared to be well managed and maintained. There were no stormwater discharge issues, nor were there any dust or odour issues. Only a small amount of product was stockpiled on site at the time of the inspection.

15 May 2015

It was raining at the time of the inspection. There was a large amount of product stockpiled on site. No aggregate was being processed at the time of the inspection. There was a small amount of stormwater ponding onsite due to recent heavy rainfall.

2.1.1 Results of discharge monitoring

No discharge or receiving environment sampling was warranted during this monitoring period as no adverse effects were identified over the course of the inspections.

2.2 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 Incident Register (IR) 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).

In the 2013-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the Company's conditions in resource consents or provisions in Regional Plans.

3. Discussion

3.1 Discussion of site performance

During the 2013-2015 monitoring period five compliance monitoring inspections of the Company's quarry were carried out. During each inspection the site was found in a generally well maintained state and was compliant with consent conditions.

3.2 Environmental effects of exercise of consents

The main potential environment effect on waterways that quarries have is the discharges of stormwater and/or wastewater containing high sediment concentrations into surface watercourses. Such discharges can result in discolouration of the waterways and may result in smothering of benthic life forms, form a barrier to fish movement and may affect fish spawning habitats.

The stormwater treatment process was found to be satisfactory and in compliance with consent conditions. In terms of site maintenance, no issues arose that may have resulted in insufficient stormwater treatment. The Waingongoro River did not appear to be adversely effected by any stormwater discharges from the quarry.

3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 1.

Table 1 Summary of performance for Consent 5001-2

Purpose: To discharge treated stormwater to the Waingongoro River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practice	Site inspections	Yes
2. Aggregate washing not permitted	Site inspections	Yes
3. Silt controls must be in place	Site inspections	Yes
4. No direct discharge into the river or tributary	Site inspections	Yes
5. Contour/ banded site to direct water to settlement pond	Site inspections	Yes
6. Constituents of discharge shall meet consent condition standards	Site inspections/samples taken as required	Yes
7. Discharge cannot cause specified adverse effects beyond mixing zone	Site inspections	Yes
8. Maintain a contingency plan for the event of a spillage and contamination	Contingency plan review by Council officers	Yes
9. Optional review provision	N/A – consent review date June 2017	N/A

Purpose: To discharge treated stormwater to the Waingongoro River		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
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 2013-2015 period, the Company achieved a high level of administrative and environmental performance and compliance with the resource consent as defined in section 1.1.4.

3.4 Recommendations from the 2011-2013 biennial report

In the 2011-2013 biennial report, it was recommended:

1. THAT monitoring of discharges from the DM & DL Bourke quarry site in 2013-2015 is extended to include a biomonitoring survey.

The monitoring programme for the 2013-2015 period included a provisional bio-monitoring survey in response to any exceedance in the allocated discharge limits. As no physicochemical sampling was warranted during this period, neither were any biomonitoring surveys.

3.5 Alterations to monitoring programmes for 2015-2017

In designing and implementing the monitoring programmes for air/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 RMA in terms of monitoring emissions/ discharges and effects, and subsequently reporting to the regional community. The Council also takes into account 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/ discharging to the environment.

It is proposed that for the 2015-2017 period, monitoring continues at the same level as during the period being reported. A recommendation to this effect is presented in section 4 of this report.

3.6 Exercise of optional review of consent

Resource consent 5001-2 does not provide for an optional review of the consent in June 2015. The next date on which the consent may be subjected to a review is June 2017.

4. Recommendations

1. THAT monitoring of discharges from DM & DL Bourke's quarry site in the 2015-2017 period continues at the same level as in the 2013-2015 period.

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.
Bund	A wall around a tank to contain its contents in the case of a leak.
Condy	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
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.
IR	Incident Register.
L/s	Litres per second.
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.
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
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.
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 subsequent amendments.
SS	Suspended solids.
Temp	Temperature, measured in °C.
Turb	Turbidity, expressed in NTU.
UI	Unauthorised Incident - an event recorded by the Council on the basis that it had potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.

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Appendix I

**Resource consent held by
DM & DL Bourke**

Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Dennis Mark & Diane Lillian Bourke
158 Onewhaia Road
R D 13
HAWERA 4673

Decision Date: 19 January 2012

Commencement
Date: 19 January 2012

Conditions of Consent

Consent Granted: To discharge treated stormwater from a quarry site
into the Waingongoro River at or about (NZTM)
1707444E-5627164N

Expiry Date: 1 June 2029

Review Date(s): June 2017, June 2023

Site Location: Onewhaia Road, Te Roti

Legal Description: Te-Rua-O-Te-Moko 1C1 Pt 1C2 Blk I Hawera SD
(Discharge source & site)

Catchment: Waingongoro

*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. No aggregate washing shall take place at the quarry site.
3. All runoff from any unvegetated area shall pass through a settlement pond or sediment trap with a minimum total capacity of:
 - a) 100 cubic metres for every hectare of exposed soil between 1 November to 30 April; and
 - b) 200 cubic metres for every hectare of exposed soil between 1 May to 31 October;unless other sediment control measures that achieve an equivalent standard are agreed to by the Chief Executive of the Taranaki Regional Council.
4. There shall be no direct discharge of untreated stormwater into surface water as a result of the exercise of this consent.
5. The active quarry site shall be contoured/bunded to:
 - ensure that all water generated in this area is directed to the stormwater treatment system prior to discharge; and
 - prevent the flow of uncontaminated stormwater into this area.
6. Constituents of the discharge shall meet the standards shown in the following table.

<u>Constituent</u>	<u>Standard</u>
suspended solids	Concentration not greater than 200 gm ⁻³
oil and grease	Concentration not greater than 15 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.

7. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the confluence with the unnamed tributary with the Patea River, the discharge shall not give rise to any or all of the following effects in the receiving water of the Patea River:
 - a) an increase of pH by more than 0.5 pH units;
 - b) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - c) any conspicuous change in colour or visual clarity;
 - d) any emission of objectionable odour;
 - e) the rendering of fresh water unsuitable for consumption by farm animals;
 - f) any significant adverse effects on aquatic life.

Consent 5001-2

8. 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.
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 2017 and/or June 2023 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 19 January 2012

For and on behalf of
Taranaki Regional Council

Director-Resource Management

