

Brian Crawford Contracting Ltd  
Quarry Monitoring Programme  
Biennial Report  
2011-2013

Technical Report 2013 – 74

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September 2014



## **Executive summary**

Brian Crawford Contracting Ltd operates a quarry located on Upper Newall Road, Rahotu, in the Warea River catchment. The quarry has operated since 2004. This biennial report for the period July 2011-June 2013 describes the monitoring programme implemented by the Taranaki Regional Council to assess the Company's environmental performance during the period under review, and the results and environmental effects of the Company's activities.

The Company holds consent 6441-1 to allow it to discharge stormwater, with sixteen conditions setting out the requirements that the Company must meet.

The Council's monitoring programme for the period under review included three site inspections.

The site was found to be tidy with no discharge to the stream occurring during any of the inspections.

During the 2011-2013 monitoring period, the Company demonstrated a high level of environmental performance and compliance with the resource consent.

In the 2011-2013 period, there were no incidents recorded by the Council that were associated with Brian Crawford Contracting Ltd.

This report includes recommendations for the 2013-2015 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 is the Biennial Report for the period July 2011-June 2013 by the Taranaki Regional Council describing the monitoring program associated with the resource consent held by Brian Crawford Contracting Ltd. The Company operates a quarry situated on Newall Road, Rahotu.

This report covers the results and findings of the monitoring programme implemented by the Council in respect to consent **6441-1**, for the discharge of water into the Warea River catchment. This is the fourth Biennial Report to be prepared by the Taranaki Regional 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* (RMA) and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by Brian Contracting Ltd, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted in the Warea River catchment.

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 2013-2015 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 a discharger, and may include cultural and socio-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 Taranaki Regional Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each discharge source. 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 performance of resource users against regional plans and consents. Compliance monitoring, including impact monitoring, also enables the Council to continuously assess its own performance in resource management as well as that of resource users particularly consent holders. It further enables the Council to continually re-evaluate its approach and that of consent holders to resource management, and, ultimately, through the refinement of methods, to move closer to achieving sustainable development of the region's resources.

#### 1.1.4 Evaluation of environmental 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 an overall rating. The categories used by the Council, and their interpretation, are as follows:

- A **high** level of environmental performance and compliance indicates that essentially there were no adverse environmental effects to be concerned about, and no, or inconsequential non-compliance with conditions.
- A **good** level of environmental performance and compliance indicates that adverse environmental effects of activities during the monitoring period were negligible or minor at most, or, 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, or, there were perhaps some items noted on inspection notices for attention but these items were not urgent nor critical, and follow-up inspections showed they have been dealt with, and any inconsequential non-compliances with conditions were resolved positively, co-operatively, and quickly.
- **Improvement required (environmental) or improvement required (administrative compliance)** (as appropriate) indicates that the Council may have been obliged to record a verified unauthorised incident involving measurable environmental impacts, and/or, there were measurable environmental effects arising from activities and intervention by Council staff was required and there were matters that required urgent intervention, took some time to resolve, or remained unresolved at the end of the period under review, and/or, there were on-going issues around meeting resource consent conditions even in the absence of environmental effects. Abatement notices may have been issued.
- **Poor performance (environmental) or poor performance (administrative compliance)** indicates generally that the Council was obliged to record a verified unauthorised incident involving significant environmental impacts, or there were material failings to comply with resource consent conditions that required significant intervention by the Council even in the absence of environmental



effects. Typically there were grounds for either a prosecution or an infringement notice.

For reference, in the 2011-2013 period, 35% 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 59% demonstrated a good level of environmental performance and compliance with their consents.

## **1.2 Process description**

### **1.2.1 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).

Thirty-one operating quarries presently supply aggregate in Taranaki. These quarries are generally located in a reasonable proximity to urban areas, from which the greatest demand for aggregate stems.

Provision of aggregate to meet longer term demand will continue to be dominated by several large quarry operations. Extra demand on alluvial terraces and laharcic deposits has occurred due to the controlled river bed extraction. These resources are of good quality and are relatively plentiful. Importation of various aggregates may need to continue to meet the requirement for aggregate types not available in Taranaki.

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 the 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 and 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.

### 1.2.2 Brian Crawford Contracting Ltd

The Company's quarrying operation is located on farmland in the Warea River catchment at Newall Road, Rahotu. The quarry is small and operates on a part time basis to supply aggregate to a mostly local market. No washing is performed and there are no buildings located on site. Machinery is brought on site as required.

The quarrying area of approximately 0.5 hectare is banded and ring-drained so that stormwater is directed to a two stage settling pond system adjacent to the quarry face. Treated stormwater is discharged into an unnamed tributary of the Warea River through an overflow channel from a settlement pond.



Figure 1 The Brian Crawford Contracting Ltd quarry site, Upper Newall Road

## 1.3 Resource consents

### 1.3.1 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.

Brian Crawford Contracting Ltd holds water discharge permit **6441-1** to discharge treated stormwater from a quarry onto and into land and into an unnamed tributary of the Warea River. This permit was issued by the Taranaki Regional Council on 3 February 2005 under Section 87(e) of the RMA. It is due to expire on 1 June 2019.

Consent **6441-1** has 16 special conditions as summarised below:

Special conditions 1 and 8 refer to the management of the quarry site to minimise any adverse effects.

Special condition 2 requires quarry activity to accord with information submitted in the consent application.

Special condition 3 prohibits discharge of untreated stormwater into the tributary.

Special condition 4 requires the quarry site to be contoured and/or bunded to direct stormwater to silt control structures.

Special condition 5 requires measures to be undertaken to control erosion and minimise the amounts of sediment in stormwater discharge.

Special conditions 6 and 14 refer to the site reinstatement requirements.

Special condition 7 limits the stormwater catchment area.

Special condition 9 limits the concentration of the discharge, while conditions 10 and 11 prohibit specific effects on the receiving waters after the mixing zone.

Special condition 12 requires stock fencing of the confluence point of the tributary and the Warea River.

Special condition 13 requires the consent holder to submit site, stormwater management and contingency plans to the Council.

Special condition 15 requires renewal of the consent after five years of issue and condition 16 is a review provision.

The permit is attached to this report in Appendix I.

### **1.3.2 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.

Rule 16 of the Council's Regional Air Quality Plan for Taranaki (July 2011) allows the discharge of emissions from quarrying operations as a permitted activity, subject to compliance with various environmental performance conditions.

## **1.4 Monitoring programme**

### **1.4.1 Introduction**

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

The Taranaki Regional 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 Newall Road site consisted of two primary components.

### **1.4.2 Programme liaison and management**

There is generally a significant investment of time and resources by the Taranaki Regional 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, or new consents, advice on the Council's environmental management strategies and the content of regional plans, and consultation on associated matters.

### **1.4.3 Site inspections**

The Brian Crawford Contracting Ltd quarry site was inspected three times during the monitoring period. With regard to consent for the discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. 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.

## **2. Results**

### **2.1 Water**

#### **2.1.1 Inspections**

Three inspections were undertaken during the 2011-2013 monitoring period, the inspection notices are summarised below.

##### **31 December 2012**

The site was unmanned at the time of inspection. A very small amount of material was stockpiled onsite. There was no processing equipment onsite and the stream bed behind the quarry was flowing clear at the time of inspection.

##### **3 March 2013**

The site was unmanned. There was a small amount of equipment onsite, however there was a lot of material stockpiled. There was no run-off from the site and the stream appeared to be clean and clear below the site.

##### **28 June 2013**

Recent activity had been undertaken onsite, processing material. There was no noticeable dust or odour beyond the site boundary and material had been stockpiled. The nearby water body appeared visibly clear. The site appeared tidy and to be operating within consent conditions at the time of inspection.

### **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 Taranaki Regional 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).

In the 2011-2013 period, there were no incidents recorded by the Council that were associated with Brian Crawford Contracting Ltd.

### 3. Discussion

#### 3.1 Discussion of plant performance

Three inspections were undertaken during the period under review. Generally the site was tidy and well maintained at each inspection.

With regard to the water discharges, in general, the stormwater bunding and treatment systems were found to be operated and maintained in a satisfactory manner in the 2011-2013 monitoring period.

A stormwater plan was received in January 2011 in accordance with condition 13 of the consent.

#### 3.2 Environmental effects of exercise of water permit

The main potential environmental effect on waterways that quarries have is the discharges of wash water containing high suspended solids concentrations into nearby waterways. Such discharges may result in discolouration of the waterway near the discharge point and may result in smothering of benthic lifeforms, form a barrier to fish movement and may affect fish spawning habitats.

The Taranaki Regional Council monitors for possible effects on stream life by conducting a visual inspection of the streambed both up and downstream of the quarry.

There was no discharge from the quarry during the inspections and no adverse effects were observed on the water quality downstream of the quarry.

#### 3.3 Evaluation of performance

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

**Table 1** Summary of performance for Consent 6441-1 to discharge treated stormwater from a quarry onto and into land and into an unnamed tributary of the Warea River

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option to minimise and prevent adverse effects	Site inspection and consultation with consent holder	Yes
2. Exercise consent in accordance with information submitted in application	Site inspections	Yes
3. No discharge of untreated stormwater into tributary of the Warea River	Site inspections of treatment system and discharge point	Yes
4. Quarry site contoured and bunded to direct stormwater to silt control structures	Site inspections	Yes
5. Measures to control erosion and minimise sediment	Site inspections	Yes
6. Progressively reinstate quarry site	Site inspections	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. Stormwater catchment area <0.5 ha	Site inspections	Yes
8. Maintain silt control structures to maximise treatment and minimise discharge	Site inspections	Yes
9. Discharge not to exceed specified concentration limits	No discharge occurring	Yes
10. No specified adverse effects downstream of tributary converging with the Warea River	Visual inspection of river below mixing zone	Yes
11. No increase in turbidity downstream of tributary converging with Warea River	Visual inspection of river below mixing zone	Yes
12. Prevent stock access to convergence point of tributary and Warea River	Inspection	Yes
13. Provision of site, stormwater management and contingency plan	Received 18 January 2011	Yes
14. Complete reinstatement of site once consent lapses	Site inspection	N/A
15. Consent to lapse 5yrs after issue unless renewed according to RMA	N/A	N/A
16. Optional review provision re environmental effects	N/A	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		<b>High</b>

N/A = not applicable

During the period under review, the Company demonstrated a high level of environmental performance and compliance with the resource consents.

### 3.4 Recommendations from 2009-2011 report

In the 2009-2011 Biennial Report it was recommended:

1. THAT monitoring of discharges from Brian Crawford Contracting Ltd's Newall Road site in the 2011-2013 year continue at the same level as in 2009-2011.
2. THAT the option for a review of resource consent **6441-1** in June 2013, as set out in condition 16 of the consent, not be exercised, on the grounds that the current conditions are adequate to deal with the environmental effects of the activity.

This recommendation was implemented.

### **3.5 Alterations to monitoring programmes for 2013-2015**

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 which are discharging to the environment.

In the case of Brian Crawford Contracting Ltd, the programme for 2011-2013 was unchanged from that for 2009-2011. It is recommended that for 2013-2015, the monitoring programme continue at the same level as in 2011-2013.

A recommendation to this effect is attached to this report.

### **3.6 Exercise of optional review of consent**

Resource consent 6441-1 provides for an optional review of the consent in June 2013. Condition 16 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any significant adverse effects of the discharge on the receiving environment.

Based on the results of monitoring in the period under review, and in previous years as set out in earlier biennial compliance monitoring reports, it was considered that there were no grounds that required a review to be pursued.

## **4. Recommendation**

THAT monitoring of discharges from Brian Crawford Contracting Ltd's Newall Road site in the 2013-2015 year continue at the same level as in 2011-2013



## Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

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 <sup>3</sup>	Gmg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
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.
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.
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.
UIR	Unauthorised Incident Register.

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## **Appendix I**

**Resource consent held by  
Brian Crawford Contracting Ltd**





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

CHIEF EXECUTIVE  
PRIVATE BAG 713  
47 CLOTEN ROAD  
STRATFORD  
NEW ZEALAND  
PHONE 06-765 7127  
FAX 06-765 5097

Please quote our file number  
on all correspondence

Name of  
Consent Holder: Brian Crawford Contracting Limited  
506 Ngariki Road  
R D 34  
RAHOTU

Consent Granted  
Date: 3 February 2005

**Conditions of Consent**

Consent Granted: To discharge treated stormwater from a quarry onto and  
into land and into an unnamed tributary of the Warea  
[Teikaparua] River at or about GR: P20:896-139

Expiry Date: 1 June 2019

Review Date(s): June 2007, June 2013

Site Location: 202 Upper Newall Road, Newall

Legal Description: Pt Sec 11 Blk XIV Cape SD

Catchment: Teikaparua (Warea)

*For General, Standard and Special conditions  
pertaining to this consent please see reverse side of this document*

[www.trc.govt.nz](http://www.trc.govt.nz)

## Consent 6441-1

### 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 exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 3286 and to ensure that the conditions of this consent are met at all times. In the case of any contradiction between the documentation submitted in support of application 3286 and the conditions of this consent, the conditions of this consent shall prevail.
3. There shall be no direct discharge of untreated stormwater from the quarry into the unnamed tributary of the Warea [Teikaparua] River, as a result of the exercise of this consent.
4. The active quarry site shall be contoured and/or bunded so that all water generated in this area is directed to the silt control structures for treatment prior to discharge; and the flow of uncontaminated stormwater into this area is prevented.
5. The consent holder shall undertake measures during excavation to control erosion of exposed areas within the quarry site and to minimise the amounts of sediment contained in the stormwater discharge licensed by this consent.
6. The consent holder shall operate and progressively reinstate the quarry site in a manner which ensures that the area of exposed, unvegetated earth within the quarry's stormwater catchment is kept to a minimum at all times.
7. The maximum disturbed stormwater catchment area shall be no more than 0.5 hectare at any one time.

Consent 6441-1

8. The consent holder shall maintain and operate the silt control structures in such a manner that any discharge which may occur shall not breach the conditions of this consent. The silt control structures shall be operated, as far as practicable, so as to maximise the treatment of the stormwater, and to minimise the duration and frequency of the discharge.
9. The following concentrations shall not be exceeded in the discharge:

<b>Component</b>	<b>Concentration</b>
pH (range)	6-9
total recoverable hydrocarbons [infrared spectroscopic technique]	15 gm <sup>-3</sup>
Suspended solids	100 gm <sup>-3</sup>

This condition shall apply prior to the entry of the stormwater into the receiving waters of the unnamed tributary of the Warea [Teikaparua] River, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

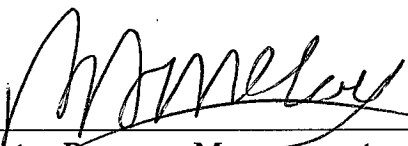
10. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the confluence of the unnamed tributary and the main stem of the Warea [Teikaparua] River, the discharge shall not give rise to any of the following effects in the receiving waters of the Warea [Teikaparua] River:
  - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
  - 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.
11. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the confluence of the unnamed tributary and the main stem of the Warea [Teikaparua] River, the discharge shall not give rise to an increase in turbidity of more than 50 % in the Warea [Teikaparua] River, as determined by NTU [nephelometric turbidity units].
12. The consent holder shall fence off the unnamed tributary above its confluence with the main stem of the Warea [Teikaparua] River to prevent stock access at all times to that area.
13. Prior to the exercise of this consent, the consent holder shall provide a site plan, stormwater management plan, and contingency plan to the Taranaki Regional Council. These plans are to outline the measures and procedures to be undertaken to prevent the spillage or accidental discharge of contaminants into the stormwater catchment, and measures to avoid, remedy or mitigate environmental effects from the exercise of this consent.
14. On cessation of quarrying operations or prior to the surrender or lapsing of this consent at the site licensed by this consent, the active quarry area, including the silt control structures, and surrounding areas shall be reinstated to the satisfaction of the Chief Executive, Taranaki Regional Council.

Consent 6441-1

15. 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.
16. 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 2007 and/or June 2013, 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 3 February 2005

For and on behalf of  
Taranaki Regional Council

  
\_\_\_\_\_  
**Director Resource Management**