

C D Boyd - Surrey Road
Quarry Monitoring Programme
Biennial Report
2013-2015

Technical Report 2015-40

ISSN: 1178-1467 (Online)
Document: 1538096 (Word)
Document: 1566714 (Pdf)

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October 2015

Executive summary

C D Boyd (the consent holder) operates a quarry located off Surrey Road at Inglewood, in the Waitara catchment. This report for the period July 2013-June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the consent holder's environmental performance during the period under review, and the results and environmental effects of the consent holder's activities.

The consent holder holds one resource consent to discharge treated stormwater and treated washwater into an unnamed tributary of the Mangamawhete Stream, and onto and into land. It includes a total of 18 conditions setting out the requirements that the consent holder must comply with.

During the monitoring period, the consent holder demonstrated an overall good level of environmental performance.

The Council's monitoring programme for the period under review included five inspections. No water samples were collected for physicochemical analysis.

During the monitoring period it was found that the site was generally tidy, well maintained and compliant. Silt and sediment controls tended to be suitable for the stormwater runoff generated by the quarrying operation and any deficiencies were promptly resolved.

During the 2013-2015 monitoring period there were no unauthorised incidents associated with the consent holder's quarry.

The consent holder achieved a good level of 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 by the Taranaki Regional Council (the Council) on the monitoring programme associated with the resource consent held by C D Boyd (the consent holder). The consent holder operates a quarry situated off Surrey Road, near Inglewood, in the Waitara catchment.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consent held by the consent holder that relates to discharges of water in the Waitara catchment. This is the fifth biennial report to be prepared by the Council to cover the consent holder's treated stormwater and treated washwater 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 consent held by the consent holder in the Waitara catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted at the consent holder's quarry 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 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 consent holder'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 consent holder'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

1.2.1 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).

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.

1.2.2 C D Boyd quarry, Surrey Road

The consent holder operates a quarry located on the true left bank of the Mangamawhete River off Surrey Road, Inglewood. The quarry produces up to 25,000 m³/year of aggregate. No washing is performed at this site as yet; however, a washing plant may be installed in the future. Machinery includes a screen, loader, excavator, truck, and a 5000 litre trailer mounted diesel fuel tank.

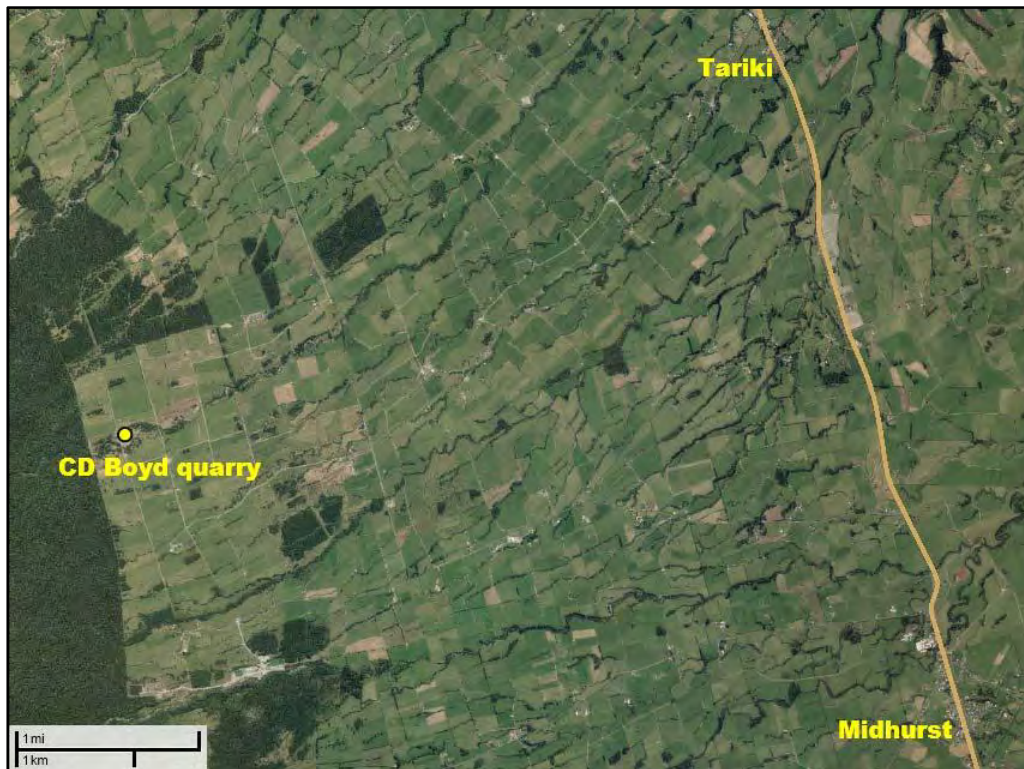


Figure 1 Location of CD Boyd quarry site

The site has been divided into three areas of approximately 1 ha each, these will be progressively excavated and reinstated. The site is contoured and bunded so that stormwater is directed to a settling pond system at the bottom of the site or to a drain at the top of the site. Wastewater is also directed into the settling ponds.



Figure 2 C D Boyd quarry, Surrey Road

1.3 Resource consents

1.3.1 Water abstraction permit

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14.

Sufficient volumes of water within streams and rivers to protect aquatic habitat is a primary concern of the Council with respect to water abstraction permits. Water abstraction for quarries is primarily only required for the washing of aggregate, and in this regard the Council encourages the recycling of both washwater and stormwater to minimise the requirement to abstract surface water. Often when combined with efficient recycling, the small volumes of surface water required to be abstracted for washing at quarries fit within the permitted activity rule [Rule 15] of the Regional Fresh Water Plan for Taranaki. That is, the abstraction volume shall not exceed 50 cubic metres per day, and the abstraction rate shall not exceed 1.5 litres per second.

No consent for abstraction of surface water is required at this quarry. Wastewater and washwater is recirculated to minimise the volume of discharge and to reduce the need for water abstraction.

1.3.2 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.

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.

Wastewater 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 consent holder holds water discharge permit **6569-1** to cover the discharge of treated stormwater and treated washwater from a quarry site onto and into land and into an unnamed tributary of the Mangamawhete Stream a tributary of the Manganui River in the Waitara catchment. This permit was issued by the Council on 8 June 2005 under Section 87(e) of the RMA. It is due to expire on 1 June 2021.

Condition 1 relates to minimising adverse effects to the environment.

Condition 2 relates to exercising the consent as described in the consent application.

Condition 3 states that no untreated discharges are to enter the stream.

Conditions 4 and 5 relate to contouring and bunding of the site, erosion control and minimising sediment in the stormwater system.

Conditions 6 and 7 relate to progressive reinstatement of the site, and fencing off of the riparian zone in block A of the quarry.

Condition 8 relates to excluding stock from the active quarry area.

Conditions 9 and 10 relate to the stormwater catchment area and the riparian management zone.

Condition 11 relates to maintenance and operation of silt control structures.

Condition 12 relates to concentration limits in the discharge.

Conditions 13 and 14 relate to discharge effects in receiving waters.

Condition 15 relates to management and contingency plans for the site.

Condition 16 relates to reinstatement of site on cessation of quarrying operations.

Condition 17 relates to consent lapse.

Condition 18 relates to review of consent conditions.

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

1.3.3 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.

Rule 16 of the Council's Regional Air Quality Plan for Taranaki (July 2013) 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 obligations 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 consent holder's quarry site 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

The consent holder's quarry site was visited five times during the monitoring period. With regard to the consent to 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. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics,

including potential odour, dust, noxious or offensive emissions. The receiving environment was surveyed for environmental effects.

1.4.4 Chemical sampling

The monitoring programme includes physicochemical sampling of the treated discharge at the outfall, if warranted. Samples are analysed for pH and suspended solids. No samples were collected in the monitoring period under review.

2. Results

2.1 Water

2.1.1 Inspections

6 January 2014

There was a lot of machinery onsite, including a new crusher. There was a large amount of stockpiled product. The quarry was not processing at the time of the inspection. Silt and sediment controls were working well.

12 March 2014

The quarry was not operating at the time of the inspection but there was a lot of machinery onsite and a large amount of stockpiled product. It was identified that additional silt and sediment controls required installation. A pile of sawdust had been dumped onsite prior to this inspection. Following the inspection it was requested that quarry staff refrain from dumping sawdust and that silt and sediment controls be installed.

12 August 2014

The quarry was not operating at the time of the inspection. There was a lot of machinery onsite and only a small amount of stockpiled product. The settlement ponds required further enlargement. Following the inspection, quarry staff were asked to enlarge them. Otherwise, the extraction area and surrounding site was found to be in a satisfactory condition. A large pile of demolition timber was also noted on site.

25 May 2015

The quarry was not operating at the time of the inspection but there was a large amount of stockpiled product. The extraction area and surrounding site was found to be in a satisfactory condition. Specific areas for improvement were also identified and discussed with the quarry operator. It was asked that the silt and sediment traps be cleaned out in the near future. The construction of a small bund along the track edge was discussed for the purpose of ensuring all stormwater was directed back into the extraction area and through the silt and sediment controls.

30 June 2015

Crushing was taking place at the time of the inspection. There was a lot of material stockpiled onsite. The extraction area was found to be in a satisfactory condition. There were no ponding or dust issues.

2.1.2 Results of discharge monitoring

The collection of a discharge sample was not warranted during any of the inspections over the 2013-2015 monitoring period.

2.2 Air

2.2.1 Inspections

Visual checks were undertaken during these inspections. It was found that site operation and management was such that no dust or other discharges to air were found to be objectionable.

2.3 Investigations, interventions, and incidents

The monitoring programme for the period 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 consent holder 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 consent holder 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 consent holder'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 consent holder's Surrey Road quarry site were carried out. Over the course of the inspections the site was generally found to be tidy, well maintained and compliant. Due to the mobile nature of the extraction site, the quarry was occasionally found to be lacking the optimal silt and sediment controls. However, quarry management endeavoured to uphold the condition of these controls by fulfilling any requests or suggestions made by the Inspecting Officer.

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.

Silt and sediment controls tended to be suitable for the stormwater runoff generated by the quarrying operation. Any deficiencies were promptly resolved, following instruction from the Council. As no aggregate washing occurred during the period under review, the potential for silt and sediment pollution in the Mangamawhete Stream was reduced. In conclusion, the results of monitoring have indicated that the effects of discharges from this quarry into the receiving environment are likely to be negligible.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 1.

Table 1 Summary of performance for Consent 6569-1

<i>Purpose: To discharge treated stormwater and washwater onto and into land and into water</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to minimise adverse effects	Inspections of site	Yes
2. Exercise of consent as described in application	Inspections of site	Yes
3. No direct discharge of untreated stormwater	Inspections of the site and treatment system	Yes
4. Contouring and bunding of site	Inspections of site	Yes
5. Control erosion	Inspections of site	Yes
6. Progressively reinstate site	Inspections of site	Yes

<i>Purpose: To discharge treated stormwater and washwater onto and into land and into water</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. Fencing of riparian zone	Inspections of site	Yes
8. Exclude stock from quarry area	Inspections of site	Yes
9. Maximum stormwater catchment area	Inspections of site	Yes
10. Minimum riparian zone	Inspections of site	Yes
11. Maintain and operate silt control structure	Inspections of site	Yes – deficiencies were identified, however
12. Concentration limits	Inspections and sampling	Yes
13. Mixing zone	Inspections and sampling	Yes
14. Limits on turbidity increase	Inspections and sampling	Yes
15. Stormwater management plan and contingency plan for the site	Received	Yes
16. Reinstatement prior to surrender or lapse of consent	N/A	N/A
17. Consent lapse	N/A	N/A
18. Review	Expires 1 June 2021	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		Good

N/A= Not applicable

The consent holder achieved a good level of environmental and administrative performance and compliance with resource consent 6569-1 in the 2013-2015 monitoring period. The site was generally well maintained, however, deficiencies in the silt and sediment controls were observed. Although these issues were promptly resolved, these deficiencies have resulted in the consent holder receiving a good environmental and administrative performance rating. In the future, a proactive, best-practice approach to stormwater management will warrant a high performance rating.

3.4 Recommendations from the 2011-2013 Biennial Report

In the 2011-2013 Biennial Report, it was recommended:

1. THAT monitoring of discharges from CD Boyd quarry in the 2013-2015 monitoring period continues at the same level as in 2011-2013.

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 Act 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 the monitoring programme for 2015-2017 remains unaltered from that of 2013-2015. Recommendations to this effect are made in section 4.

3.6 Exercise of optional review of consent

Resource consent 6569-1 does not provide for an optional review in June 2016.

4. Recommendations

1. THAT monitoring of discharges from CD Boyd quarry in the 2015-2017 monitoring period continues at the same level as in 2013-2015.
2. THAT the effects of turbidity and sedimentation on receiving waters be minimised by operating and maintaining the settling pond system in accordance with the conditions of consent 6569-1 and best quarry management practices.

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.
Conductivity	An indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Fresh g/m ³	Elevated flow in a stream, such as after heavy rainfall. Grammes per cubic metre, and equivalent to milligrammes 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.

For further information on analytical methods, contact the Council's laboratory.

Bibliography and references

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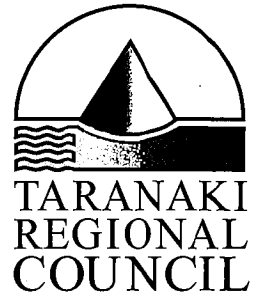
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Appendix I

**Resource consent held by
C D Boyd**



**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
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: C D Boyd
P O Box 44
INGLEWOOD

Consent Granted
Date: 8 June 2005

Conditions of Consent

Consent Granted: To discharge treated stormwater and treated washwater from a quarry site onto and into land and into an unnamed tributary of the Mangamawhete Stream a tributary of the Manganui River in the Waitara catchment at or about GR: Q20:114-142

Expiry Date: 1 June 2021

Review Date(s): June 2007, June 2009, June 2015

Site Location: Norfolk Road, Inglewood

Legal Description: Secs 9 & 10 Blk XII Egmont SD

Catchment: Waitara

Tributary: Manganui
Mangamawhete

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

Consent 6569-1

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 resource consent.
2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 3575 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 3575 and the conditions of this consent, the conditions of this consent shall prevail.
3. There shall be no direct discharge of untreated stormwater or washwater from the quarry into the unnamed tributary of the Mangamawhete Stream, as a result of the exercise of this consent.
4. The active quarry site shall be contoured/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. Only rock and soil derived from the quarry site shall be used for reinstatement.
7. On reinstatement of the area described as quarry Block A the consent holder shall fence off of a riparian buffer zone of at least 15 metres wide on the Mangamawhete Stream in the section shown as proposed fencing on Conservation Plan CP195.
8. Stock shall be excluded from accessing the active area of quarry Blocks A, B and C at all times.

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9. The maximum disturbed stormwater catchment area shall be no more than two hectares at any one time.
10. The consent holder shall maintain a minimum riparian management zone of 13 metres wide in all areas covered under CP195.
11. The consent holder shall properly and efficiently 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 washwater, and to minimise the duration and frequency of the discharge.

12. The following concentrations shall not be exceeded in the discharge:

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

This condition shall apply prior to the entry of the wastewater into the receiving waters of the Mangamawhete Stream, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

13. After allowing for reasonable mixing within a mixing zone extending 25 metres downstream of the confluence between the unnamed tributary and the Mangamawhete Stream, the discharge shall not give rise to any of the following effects in the receiving waters of the Mangamawhete Stream:
 - 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.
14. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the confluence of the unnamed tributary and Mangamawhete Stream, the discharge shall not give rise to an increase in the turbidity of Mangamawhete Stream of more than 50 %, as determined using NTU [nephelometric turbidity units].
15. 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.

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16. 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.
17. 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.
18. 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 2009 and/or June 2015, 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 June 2005

For and on behalf of
Taranaki Regional Council



Director-Resource Management