

Whitaker Civil Engineering Limited
Quarry Monitoring Programme
Biennial Report
2011-2013
Technical Report 2013-80

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Executive summary

Whitaker Civil Engineering Limited operates a quarry on Waiwhakaiho Road, in the Waiwhakaiho catchment. This 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 three resource consents held by Whitaker Civil Engineering Limited include a total of 40 special conditions setting out environmental requirements that the Company must satisfy. The Company holds consents to discharge treated washwater, stormwater and cleanfill leachate, into the Waiwhakaiho River, and cleanfill into land at the quarry site.

The Council's monitoring programme for the period under review included twelve compliance monitoring inspections and the collection of one discharge sample and two receiving water samples for physicochemical analysis.

Monitoring of the site found the cleanfill area was tidy and complying with consent conditions. The ponds were due to be cleaned out. There was some product stockpiled onsite. The site was generally tidy.

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

During the period under review there were no registered unauthorised incidents associated with the site.

This report includes recommendations for the 2013-2015 year.

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1. Introduction

This report is the biennial Report for the period July 2011-June 2013 by the Taranaki Regional Council describing the monitoring programme associated with resource consents held by Whitaker Civil Engineering Limited (Whitaker Civil). The Company operates a quarry site situated on Waiwhakaiho Road near Egmont Village.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by Whitaker Civil that relate to discharges of water in the Waiwhakaiho catchment. This is the sixteenth Annual Report prepared by the Taranaki Regional Council to cover the stormwater and washwater discharges from this site and their environmental effects.

1.1 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 and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by Whitaker Civil in the Waiwhakaiho 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 Whitaker Civil 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 2013-2015 monitoring year.

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

1.2 Compliance monitoring and the Resource Management Act (1991)

The Resource Management Act 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 (e.g. 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' as is appropriate for each discharge source. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the Resource Management Act to assess the effects of the exercise of consents.

In accordance with section 35 of the Resource Management Act 1991, 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.

1.2.1 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 (such as data supplied after a deadline) 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 desirable (environmental) or improvement desirable (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 2012-2013 year, 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.

1.3 Process description

1.3.1 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).

Twenty-eight 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 laharic 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 shingle extraction in Taranaki is covered by the Resource Management Act 1991 and, if the minerals in question are Crown owned, by the Crown Minerals Act 1991.

Regional councils have no control over the provision of exclusive rights to minerals. However, regional councils do have control over the environmental effects of aggregate extraction from river and lake beds, and land in certain circumstances, and these controls may act as a constraint or limitation on allocation decisions.

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.

Sections 15 and 30 of the Resource Management Act 1991 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.

1.3.2 Whitaker Civil Engineering Limited

The Whitaker Civil Waiwhakaiho Road quarry site is located on the true right bank of the Waiwhakaiho River (Photograph 1 and Figure 1 below).

The site has washing facilities and the machinery used includes a dry crusher, screens and washers, excavators and trucks.

The area of exposed earth at the quarry site is approximately 1.5 hectares. These areas are contoured and bunded so that stormwater is directed to settling ponds within the sites for treatment, prior to discharge.

Reinstatement of excavated areas at the quarry site is carried out using cleanfill.

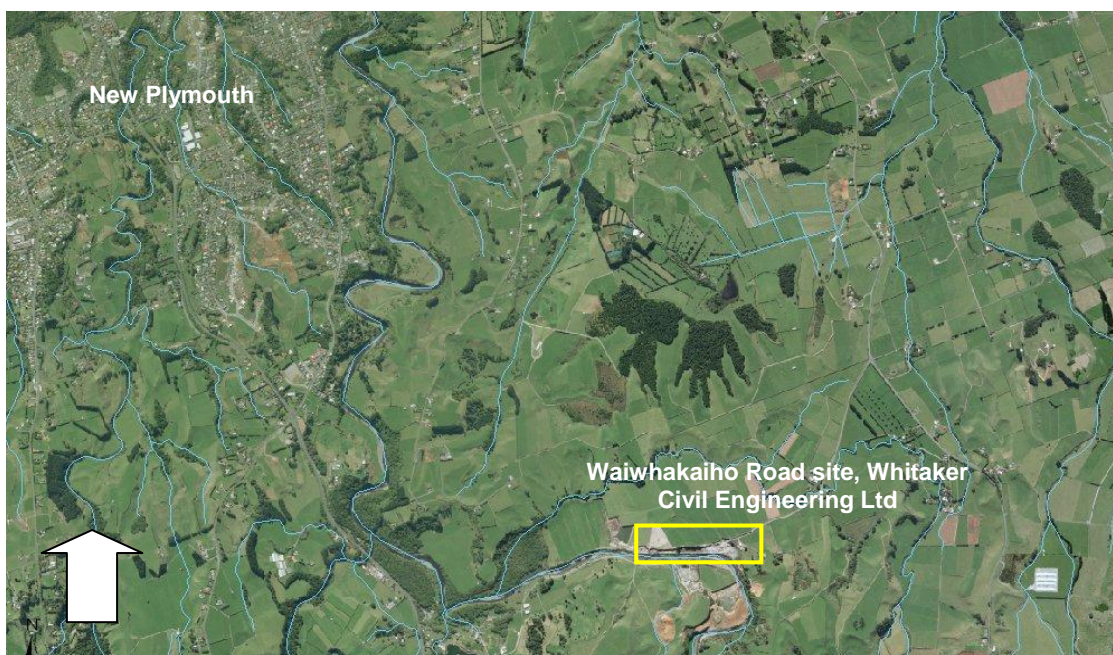


Photo 1 Approximate location of the Whitaker Civil quarry, Waiwhakaiho Road

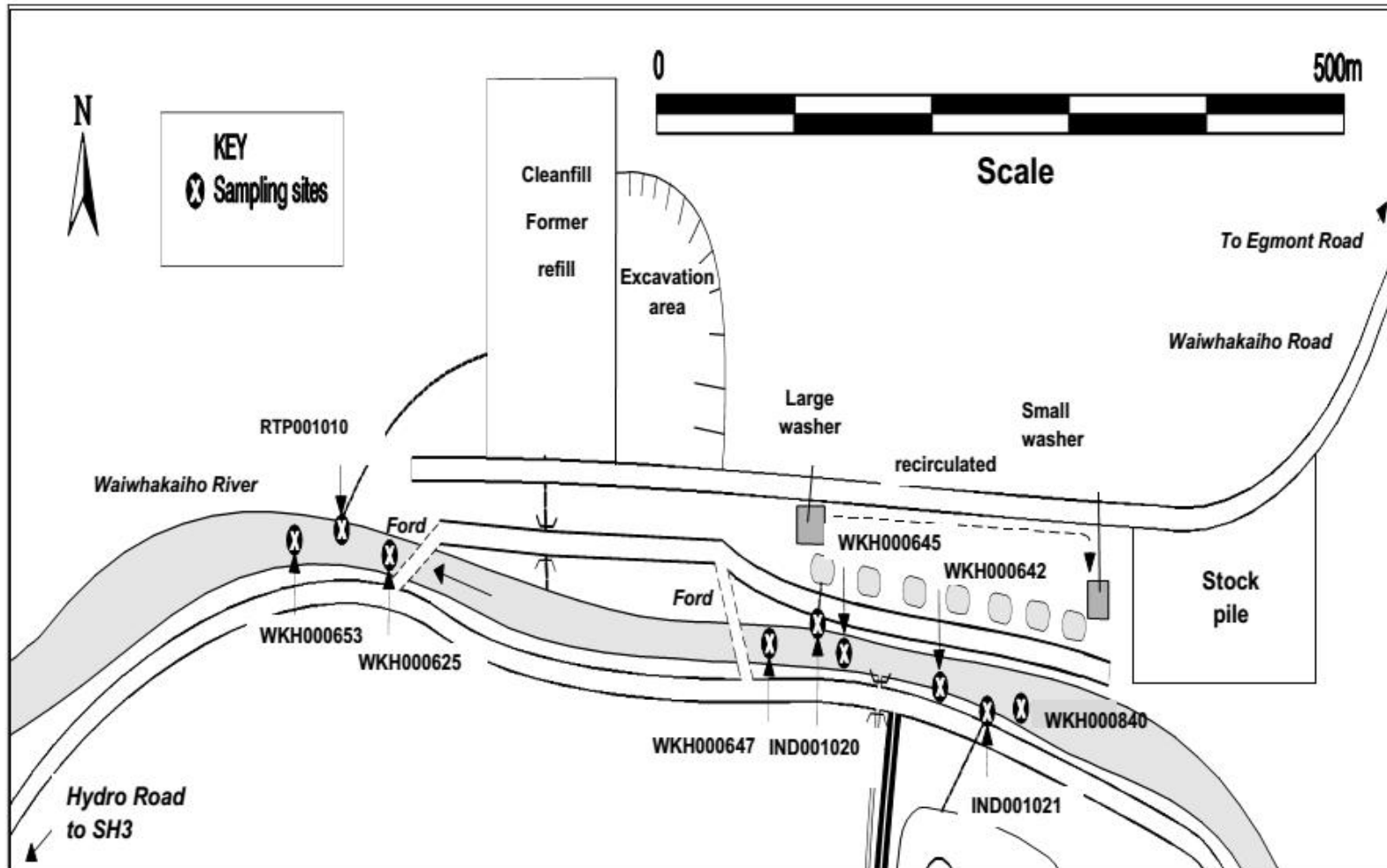


Figure 1 Whitaker Civil, Waiwhakaiho Road quarry (northern side of river) - location of sampling sites

1.4 Resource consents

1.4.1 Water abstraction permit

Section 14 of the Resource Management Act 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 Regional 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.

Whitaker Civil Engineering Limited holds no water abstraction permit. The water volume and abstraction rate required to service the Company's operations are less than 50 cubic metres per day and 1.5 litres per second respectively, therefore the activity is permitted and falls under Rule 15 of the RFWP.

1.4.2 Water discharge permit

Section 15(1)(a) of the Resource Management Act 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 Regional 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 directly into a waterbody, particularly to a river during low flow, results in a smothering of in-stream life and deterioration in aesthetic conditions and can affect downstream abstractions of water, local fisheries and recreational activities.

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.

Whitaker Civil Engineering Limited holds consent **0720-4** to discharge treated washwater from shingle washing activities onto and into land, and into the Waiwhakaiho River. This permit was granted on 30 January 2008. The permit is due to expire in June 2026.

There are 12 special conditions attached.

Conditions 1 and 2 deal with exercise of the consent.

Conditions 3 to 8 deal with the stormwater discharge.

Conditions 9 and 10 deal with effects on the receiving waters.

Conditions 11 and 12 deal with lapse and review of consent.

Whitaker Civil Engineering Ltd holds consent **7236-1** to discharge treated stormwater from the quarry site into the Waiwhakaiho River. This permit was granted on 14 February. The permit is due to expire in June 2026.

There are 12 special conditions attached to the consent.

Condition 1 requires the best practicable option.

Condition 2 prohibits untreated stormwater or washwater being discharged to the Waiwhakaiho River.

Conditions 3, 4, 6 and 10 set out requirements for silt and erosion control, and reinstatement.

Condition 5 requires riparian planting and maintenance.

Conditions 7, 8 and 9 deal with the discharge and its effects on the receiving waters.

Conditions 11 and 12 deal with lapse and review of consent.

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

1.4.3 Discharges of wastes to land

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

Whitaker Civil Engineering Limited hold consent **3900-2** to discharge cleanfill onto and into land and to discharge leachate and stormwater from a former quarry onto and into land in the vicinity of the Waiwhakaiho River. The permit is due to expire in June 2026.

There are 16 special conditions attached to this consent.

Condition 1 requires the activity to be carried out in accordance with the documentation submitted in support of the application.

Conditions 2, 3, 4, 6 and 8 deal with the materials to be discharged to the cleanfill and their placement.

Condition 5 relates to notification and information requirements.

Condition 7 relates to written approval requirements.

Condition 9 prohibits contaminants entering surface water.

Condition 10 relates to monitoring of materials dumped at the site.

Condition 11 deals with effects on the Waiwhakaiho River.

Condition 12 requires a site management plan.

Condition 13 requires the best practicable option.

Condition 14 requires the area to be stabilised and revegetated once discharge is complete.

Conditions 15 and 16 deal with lapse and review of consent.

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

1.5 Monitoring programme

1.5.1 Introduction

Section 35 of the Resource Management Act 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 Company's quarry consisted of three primary components, which are discussed below.

1.5.2 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.

1.5.3 Site inspections

The Whitaker Civil Engineering Limited site was visited twelve times during the monitoring period. The main points of interest at the visits were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. The neighbourhood and particularly the receiving waters were surveyed for environmental effects.

1.5.4 Chemical sampling

The 2011-2013 monitoring programme included sampling of the treated discharges at the washwater and stormwater outfall (site IND001020, Photo 2). The programme also included sampling (impact monitoring) of the receiving waters upstream and downstream of the discharge. Sampling was only to be undertaken when warranted, at the discretion of the inspecting officer.



Photo 2 Stormwater discharge point to Waiwhakaiho River

Washwater and stormwater discharge and receiving water samples were analysed for turbidity, suspended solids, and total recoverable hydrocarbons.

2. Results

2.1 Water

2.1.1 Inspections at the quarry site

During the 2011-2013 monitoring period the Council carried out twelve monitoring inspections at the Company's quarry site. Inspection notes are summarised below.

21 October 2011

No processing or washing was occurring at time of inspection. There was quite a bit of product stockpiled. Discharge from the ponds looked good with no visual impact on the receiving waters observed. The cleanfill consists of soil, metal, concrete and a large amount of sawdust. The council inspecting officer spoke with a staff member on site who said the sawdust was untreated and came from Taranaki Sawmills. Sawdust is unacceptable in a cleanfill whether treated or untreated. This was reported to the compliance manager. Advice was given to stop accepting sawdust as cleanfill material.

1 March 2012

The quarry was processing and washing was occurring at the time of inspection. There was quite a bit of product stockpiled. Silt ponds look satisfactory. The discharge was discoloured but having no effect on the receiving waters beyond the mixing zone. The sawdust was still being stored in the cleanfill area away from the water. The site was tidy and complying with consent conditions at the time of inspection.

7 May 2012

They were excavating, processing and washing at the time of inspection. There was some product stockpiled onsite. The sawdust that was near the water had been moved and the cleanfill area looked good. The pond discharge from the quarry was having no visual impact on the receiving water at the time of inspection. The site was tidy and complying with consent conditions at the time of inspection.

29 June 2012

The quarry was very busy at the time of inspection. There was extracting, washing and processing occurring. There was a stockpile of product. There were no ponding issues and all stormwater was being directed to the sediment ponds. The discharge from the ponds was having no visual effect on the receiving waters. The site was tidy and complying with consent conditions at the time of inspection. The cleanfill area looked good and was due to begin remediation.

3 October 2012

There had been concern with a neighbour directing dairy effluent onto the quarry site. At the time of inspection washing was taking place. The silt ponds were discharging; there was no visual impact on the receiving waters beyond the mixing zone. There was product stockpiled around the site. There were no ponding or dust issues. A new area for extraction was being opened. The cleanfill material consisted mainly of soil and clay. The site was tidy and was complying with consent conditions at the time of inspection.

28 January 2013

Processing was occurring at time of inspection. The excavation area looked good, and there was not a lot of product stockpiled. The cleanfill area was untidy. A call was made to a quarry staff member to advise that the cleanfill needed to be tidy as there would need to be a lot more monitoring and enforcement action at the Company's expense.

30 January 2013

A reinspection of the cleanfill was carried out. A Whitaker truck was dumping silt and sediment from the water treatment plant. A digger had pulled out and made a small pile of materials that should not have been dumped onsite. Advice was given to remove all prohibited material onsite.

4 February 2013

A meeting was set up with the quarry manager to discuss works that had been undertaken since the previous inspection. He said that domestic rubbish and other materials had been removed from the cleanfill, and they were waiting for fine weather to transport these wastes offsite, which also included plastic burlap wrap. Advice was given to the owner of the site that they could not dispose of green waste and other domestic waste in the cleanfill area. There was a large amount of product stockpiled at the quarry. There was no ponding or dust issues at the site. The silt ponds were discharging with no visual impact on the receiving waters. The quarry site was tidy and complying with consent conditions. However the recent dumping in the cleanfill area of the silt and sediment from the water treatment plant had discoloured surface water.

21 February 2013

A reinspection of the cleanfill was carried out. The area had been cleaned up and changed around, new bunds had been installed to catch and dry out slops from the water treatment plant. The prohibited material that was in the cleanfill area had been removed. Random inspections would still occur to ensure compliance with the cleanfill as per consent 3900-2. A water sample was taken from the discharge.

8 April 2013

The inspection was undertaken with the quarry manager. The cleanfill area looked good. The banded silt and sediment from the water treatment plant was drying out well. The dumped material consisted of clay, dirt, concrete, broken bricks and a few stumps. The extraction area for the quarry looked good. There was washing at the time of inspection, but no visual effects on the receiving waterbody. The site was operating at a satisfactory level at the time of inspection.

31 July 2013

There was a lot of product stockpiled and workers were bagging sand under a tarpaulin by the office. Processing was occurring at the time of inspection. The wash water looked good and the ponds had been cleaned out. The process of reinstating one end of the cleanfill had started. The cleanfill looked good, materials consisted of clay, dirt, concrete and sludge from Pukekura Park.

18 November 2013

There was no activity onsite and there was not a lot of product stockpiled. The cleanfill area looked good. The area that had been reinstated looked good.

They were backfilling the cleanfill area. There was a lot clay, dirt and concrete. The extraction area looked good.

2.1.2 Results of quarry stormwater/washwater monitoring

Samples were collected on 21 February 2013 during a site inspection during fine weather. Analytical results for the samples are presented in Table 1 below.

Table 1 Results of samples collected from quarry stormwater/washwater discharge, upstream and downstream 21 February 2013.

Parameter	Unit	Stormwater/washwater discharge	Consent limits on discharge	Waiwhakaiho R 50 metres u/s	Waiwhakaiho R 50 metres d/s
Hydrocarbons	g/m ³	-	<15	<0.5	<0.5
Suspended solids	g/m ³	5	<100	7	22
Turbidity	NTU	3.9	-	3.8	16

Suspended solids were below the limit of 100 g/m³ imposed by consents 0720 and 7236 at the discharge point, and therefore complied with the consent conditions. The sample was collected during fine weather, and due to the high flow in the river no effect was visible below the mixing zone. Nonetheless, maintenance of the ponds for the treatment of washwater and stormwater needs to be carried out to ensure these ponds can cope with stormwater during periods of wet weather. Hydrocarbons were not tested in this sample.

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 eg 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 year there as one incident was recorded relating to operations at the Whitaker Civil site.

21 October 2011

During routine compliance monitoring it was found that sawdust was being disposed of in the cleanfill site at Whitakers Quarry on Waiwhakaiho Road. An Abatement Notice was issued requiring the operator of the cleanfill to cease accepting sawdust as cleanfill material and for the sawdust already disposed of at the site to be removed from the cleanfill site.

3. Discussion

3.1 Discussion of site performance

During the 2011-2013 monitoring period, the Council carried out twelve compliance monitoring inspections. At all inspections the site was generally neat and tidy.

Sampling found the suspended solids level in the discharge was within consent conditions. The pond system and sediment/silt control structures may require more regular maintenance to ensure compliance with consent conditions during periods of higher rainfall.

One unauthorised incident was recorded in relation to unauthorised materials within the cleanfill, while further interventions by council may also required on a later occasion.

3.2 Environmental effects of exercise of water permit

The main potential environmental effect of quarry operations on waterways is the discharge of washwater containing high concentrations of suspended solids. Such discharges may result in discolouration of the waterway near the discharge point and may result in smothering of benthic life forms, 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, and measuring physicochemical properties of the stormwater and receiving environment.

Monitoring of the site during the 2011-2013 period found the level of suspended solids in the washwater discharge was within the consent limit. The sampling was undertaken in dry weather and the flow in the river was such that no effects were visible below the mixing zone.

3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Tables 2 - 4.

Table 2 Summary of performance for Consent 0720-4 to discharge washwater into the Waiwhakaiho River

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable environmental option	Site inspections ongoing liaison with consent holder.	Yes
2. Operation undertaken in accordance with documentation submitted with consent application	Site inspections	Yes
3. No direct discharge of untreated stormwater or washwater to the river	Site inspections and sampling	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Active quarrying area contoured and banded appropriately	Site inspections	Yes
5. Appropriate control of erosion to minimise sediment loading in stormwater discharge	Site inspections and sampling	Yes
6. Progressive reinstatement of quarry area to minimize area of exposed earth to erosion	Site inspections	Yes
7. Appropriate operation and maintenance of sediment control structures	Site inspections	More regular maintenance required
8. The discharge meets the concentration standards	Inspections and sampling.	No – SS above limits
9. Complies with standards for the effects on receiving waters	Inspections and sampling	Yes
10. Does not raise turbidity after mixing zone by more than 50%	Inspections and sampling	Yes
11. Lapse condition	N/A	N/A
12. Review of consent	Next scheduled June 2014, if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		Improvement desired

N/A = not applicable

Table 3 Summary of performance for Consent **3900-2** to discharge cleanfill

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Operation undertaken in accordance with documents submitted in application for consent.	Inspections of site	Yes
2. Contaminants discharged shall be limited to cleanfill or inert materials	Inspections of site	Yes
3. No discharge of: food waste, paper, cardboard, grass clippings, paint, oil, steel, textiles, etc	Inspections of site	Yes
4. WTP sludge from NPDC permitted onsite	No WTP sludge received over monitoring period	NA
5. Notification prior to discharge of WTP sludge	No WTP sludge received over monitoring period	NA
6. WTP sludge to be mixed with other cleanfill material as far as practicable	No WTP sludge received over monitoring period	NA

Condition requirement	Means of monitoring during period under review	Compliance achieved?
7. If uncertain about acceptability of certain material obtain written approval from TRC	Inspections of site	Yes
8. No cleanfill to be discharged within 20 metres of the top of the bank of the river	Inspections of site	Yes
9. Discharge to land shall not result in any cleanfill material entering surface water	Inspections of site and river	Yes
10. Appropriate monitoring of dumped material to prevent unwanted contaminants in the cleanfill area	Inspections of site and liaison with consent holder	Yes
11. Discharge shall not give rise to: oil, grease, change in colour, etc	Inspections of site and river	Yes
12. Provision of a detailed environmental management plan covering all aspects of the reinstatement operation	Provision, review and acceptance	Yes
13. Adopt best practicable option	Inspections of site and sampling	Yes
14. Upon completion of works the discharge site shall be stabilised and revegetated	Works not yet completed	N/A
15. Lapse of condition	NA	NA
16. Review of consent	Review of consent next scheduled for June 2014, if required	NA
Overall assessment of consent compliance and environment performance in respect of this consent		High

N/A = not applicable

Table 4 Summary of performance for Consent **7236-1** to discharge treated stormwater

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option for prevention of environmental effects	Inspections of site	Yes
2. No direct discharge of untreated stormwater from the active quarry site	Inspections of site	Yes
3. Active site is contoured and bunded appropriately	Inspections of site	Yes
4. Pond outlet stabilized and exposed erodible area no more than 2 hectares	Inspections of site	Yes
5. Undertake and maintain riparian planting	Inspections of site	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
6. Silt control structures maintained and operated appropriately	Inspections of site	Yes
7. Discharge meets concentration limits	Sampling	No – SS above limits
8. Discharge shall not give rise to: oil, grease, change in colour, etc	Inspections of site and river	Yes
9. Discharge shall not increase turbidity in the river by more than 50%	Sampling	Yes
10. Use of treatment ponds and washwater re-circulating system to reduce the water volume treated and discharged	Inspections of site	Yes
11. Lapse condition	N/A	N/A
12. Review of consent conditions	Next scheduled June 2014, if required	N/A
Overall assessment of consent compliance and environment performance in respect of this consent		Good

During the year, the Company demonstrated overall a good level of environmental performance and compliance with the resource consents.

3.4 Recommendations from the 2009-2011 Biennial Report

In the 2009-2011 Biennial Report, it was recommended:

1. THAT monitoring of discharges from Whitaker Civil Engineering Limited's site in the 2011-2013 year should continue at the same level as in 2009-2011.

This recommendation was implemented in the period under review.

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 Resource Management Act, 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 that cause emissions to the atmosphere and discharges to the environment.

The programme for 2011-2013 was unchanged from that for 2009-2011. Similarly, it is now proposed that for 2013-2015, the programme remains unchanged. A recommendation to this effect is attached to this report.

3.6 Exercise of optional review of consents

All three resource consents relating to the Whitaker Civil Engineering Limited's site provide optional reviews in June 2014. A condition in these consents allow the council to review the consent, if there are grounds that the conditions are inadequate to deal with any adverse effects on the environment arising from the exercise of these consents, which were either not foreseen at the time of application was considered or which it was not appropriate to deal with at the time.

4. Recommendation

1. THAT monitoring of discharges from Whitaker Civil Engineering Limited's site in the 2013-2015 period should continue at the same level as in 2011-2013.
2. THAT the optional review of resource consents, not be exercised in 2014.

Glossary of common terms and abbreviations

The following abbreviations and terms are used within this report:

Biomonitoring	assessing the health of the environment using aquatic organisms
BOD	biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate
BODF	biochemical oxygen demand of a filtered sample
bund	a wall around a tank to contain its contents in the case of a leak
CBOD	carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate
Condy	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m
g/m ³	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
Incident	an event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred
Intervention	action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring
Investigation	action taken by Council to establish what were the circumstances/events
MCI	macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats
mS/m	millisiemens per metre
Mixing zone	the zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
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
UIR	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan

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- Taranaki Regional Council, 2011: Whitaker Civil Engineering Limited quarry Monitoring Programme Biennial Report 2010-2011. Technical Report 2011-60.

Appendix I
Resource consents held by
Whitaker Civil Engineering



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Please quote our file number
on all correspondence

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

Name of
Consent Holder: Whitaker Civil Engineering Limited
Barrett Road
R D 4
NEW PLYMOUTH

Consent Granted
Date: 30 January 2008

Conditions of Consent

Consent Granted: To discharge treated washwater from shingle washing activities onto and into land and into the Waiwhakaiho River at or about 2608082E-6233172N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Waiwhakaiho Road, New Plymouth

Legal Description: Lot 1 DP 17552 & Pt Rekereke Block Blk X Paritutu SD

Catchment: Waiwhakaiho

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 5002. In the case of any contradiction between the documentation submitted in support of application 5002 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 Waiwhakaiho River as a result of the exercise of this consent.
4. The active quarrying area shall be contoured and bunded to ensure that:
 - all water in this area is directed to sediment 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 consent holder shall maintain and operate the sediment control structures so that any discharge will meet the conditions of this consent. The sediment 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.

8. The discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm ⁻³
total recoverable hydrocarbons	Concentration not greater than 15 gm ⁻³ [as determined by infrared spectroscopic technique]

This condition shall apply prior to the entry of the discharge into the Waiwhakaiho River, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

9. After allowing for reasonable mixing within a mixing zone extending 25 metres downstream of the point of discharge into the Waiwhakaiho River, the discharge shall not give rise to any of the following effects in the Waiwhakaiho 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.
10. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the point of discharge into the Waiwhakaiho River, the discharge shall not give rise to an increase in the turbidity of Waiwhakaiho River of more than 50%, as determined using NTU [nephelometric turbidity units].
11. This consent shall lapse on the expiry of five years after the date of issue, 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.
12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 30 January 2008

For and on behalf of
Taranaki Regional Council



Director-Resource Management



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Discharge Permit
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a resource consent is hereby granted by the
Taranaki Regional Council

Name of
Consent Holder: Whitaker Civil Engineering Limited
Barrett Road
R D 4
NEW PLYMOUTH 4374



Change To
Conditions Date: 2 June 2010 [Granted: 30 January 2008]

Conditions of Consent

Consent Granted: To discharge cleanfill onto and into land and to discharge leachate and stormwater from a former quarry landfill onto and into land in the vicinity of the Waiwhakaiho River at or about (NZTM) 1698268E-5671454N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Waiwhakaiho Road, New Plymouth

Legal Description: Lot 1 DP 17552 & Pt Rekereke Blk Blk X Paritutu SD

Catchment: Waiwhakaiho

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

Consent 3900-2

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 exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 5014. In the case of any contradiction between the documentation submitted in support of application 5014 and the conditions of this consent, the conditions of this consent shall prevail.
2. The contaminants to be discharged shall be limited to cleanfill and/or inert materials. For the purposes of this condition, "clean fill and inert materials" are defined as materials consisting of any concrete, cement or cement wastes, bricks, mortar, tiles [clay, ceramic or concrete], non-tanalised timber, porcelain, glass, gravels, boulders, shingles, fibreglass, plastics, sand, soils and clays, and/or tree stumps and roots, whether singly or in combination or mixture, or any other material [subject to condition 3] that when placed onto and into land will not render that land or any vegetation grown on that land toxic to vegetation or animals consuming vegetation.
3. The discharge of the following contaminants shall not occur: food wastes, paper and cardboard, grass clippings, garden wastes including but not limited to wastes containing foliage or other vegetation other than tree stumps and roots as permitted under condition (2), textiles, steel, galvanised metals, construction materials containing paint or fillers or sealers or their containers, oils or greases or any liquids or sludges or their containers, any industrial process by-products other than as permitted under condition (2), any poisons or solvents or their containers, batteries, general domestic refuse not otherwise described, or any wastes with the potential to render land or any vegetation grown on the land toxic to vegetation or to animals consuming such vegetation.
4. In addition to the materials listed in condition 2 residual sludge [Water Treatment Plant [WTP] sludge] sourced from New Plymouth District Council's drinking water treatment activities is permitted to be discharged to the site.

Consent 3900-2

5. At least seven days prior to any discharge of WTP sludge, the consent holder shall notify Council and supply the following information;
 - The volume of the WTP sludge to be discharged.
 - Compositional analysis of a representative sample of the WTP sludge for BOD, aluminium, manganese, lead, zinc, copper, pH, cadmium and total solids.
 - Estimated duration of the disposal activities.
6. When WTP sludge is to be disposed of at the site, the consent holder shall spread the material as thinly as possible and mix it in with other cleanfill material as far as practicable.
7. If the consent holder is uncertain as to the acceptability or not of a certain material the consent holder shall obtain written approval from the Consents Manager, Taranaki Regional Council, prior to its discharge.
8. No cleanfill or WTP sludge shall be discharged within 20 metres of the top of the bank of the Waiwhakaiho River and the stability of the riverbank shall be maintained to avoid or mitigate potential erosion at the site.
9. The discharge to land shall not result in any contaminants entering surface water.
10. With the exception of New Plymouth District Council WTP residual sludges, the consent holder shall monitor all material dumped to ensure it only contains cleanfill and inert materials.
11. The discharge shall not give rise to any of the following effects in the waters of the Waiwhakaiho 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 significant adverse effects on aquatic life
 - d) the rendering of fresh water unsuitable for consumption by farm animals.
12. Within two months of the granting of this consent, the consent holder shall produce a detailed management plan covering all aspects of the reinstatement operation, including:
 - a) Resource consent requirements
 - b) Site management
 - c) Waste acceptance criteria
 - d) Waste acceptance controls and procedures
 - e) Daily operating procedures
 - f) Environmental controls and monitoring
 - g) Emergency procedures

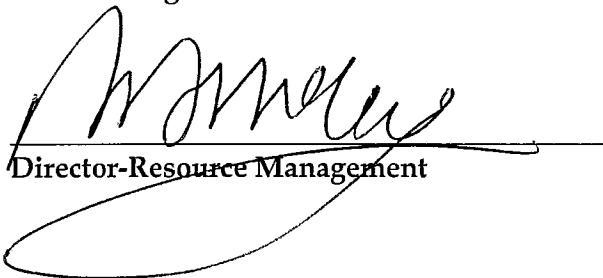
The report shall be to the satisfaction of the Chief Executive, Taranaki Regional Council.

Consent 3900-2

13. Notwithstanding any conditions within this consent, the consent holder shall at all times adopt the best practicable option or options [as defined in section 2 of the Resource Management Act 1991] to prevent or minimise any actual or potential effect on the environment arising from any discharge at the site.
14. Upon completion of the works associated with the exercise of this consent, the discharge site covered by this consent shall be stabilised and revegetated to the satisfaction of the Chief Executive, Taranaki Regional Council.
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 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 2 June 2010

For and on behalf of
Taranaki Regional Council



Director-Resource Management



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

Name of
Consent Holder: Whitaker Civil Engineering Limited
Barrett Road
R D 4
NEW PLYMOUTH

Consent Granted
Date: 14 February 2008

Conditions of Consent

Consent Granted: To discharge treated stormwater from a quarry into the
Waiwhakaiho River at or about 2607804E-6233215N

Expiry Date: 1 June 2026

Review Date(s): June 2014, June 2020

Site Location: Waiwhakaiho Road, New Plymouth

Legal Description: Lot 1 DP 17552 & Pt Rekereke Blk Blk X Paritutu SD

Catchment: Waiwhakaiho

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. There shall be no direct discharge of untreated stormwater or washwater from the quarry into the Waiwhakaiho River as a result of the exercise of this consent.
3. The active quarrying area shall be contoured and bunded to ensure that:
 - all water in this area is directed to sediment control structures for treatment prior to discharge; and
 - the flow of uncontaminated stormwater into this area is prevented.
 - no gaps are present along the bunded area running parallel to the Waiwhakaiho River.
4. The maximum disturbed stormwater catchment area shall be no more than two hectares at any time; the pond's outlet shall be stabilised.
5. For the purposes of enhancing water quality and aquatic habitat the consent holder shall undertake planting and subsequent maintenance of the riparian margins of the Waiwhakaiho River. The planting shall occur before 31 January 2010.
6. The consent holder shall maintain and operate the sediment control structures so that any discharge will meet the conditions of this consent. The sediment 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. For the sizing of the pond, the actual and future catchment areas and the Rainfall Annual Exceedance Probability (AEP) value should be considered.
7. The discharge shall meet the standards shown in the following table.

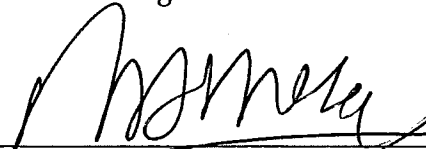
Constituent	Standard
pH	Within the range 6.0 to 9.0
Suspended Solids	Concentration not greater than 100 gm ⁻³
Total Recoverable Hydrocarbons	Concentration not greater than 15 gm ⁻³ [as determined by infrared spectroscopic technique]

This condition shall apply immediately prior to the entry of the discharge into the Waiwhakaiho River, at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

8. After allowing for reasonable mixing within a mixing zone extending 25 metres downstream of the point of discharge into the Waiwhakaiho River, the discharge shall not give rise to any of the following effects in the Waiwhakaiho 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.
9. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the point of discharge into the Waiwhakaiho River, the discharge shall not give rise to an increase in the turbidity of Waiwhakaiho River of more than 50%, as determined using NTU [nephelometric turbidity units].
10. The consent holder shall continue to carry out the washing operations using the multi-stage treatment pond system and the recirculation system back to the washing machine so that the volume of water treated and water discharged are minimised.
11. This consent shall lapse on the expiry of five years after the date of issue, 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.
12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 14 February 2008

For and on behalf of
Taranaki Regional Council



Director-Resource Management

