

Civil Quarries Ltd – Everett Road Quarry  
Monitoring Programme  
Annual Report  
2018-2019

Technical Report 2019-92

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## Executive summary

Civil Quarries Ltd (the Company) operates a quarry located on Everett Road at Everett Park, in the Kurapete catchment. This report for the period July 2018 to June 2019 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities.

The Company holds two resource consents, which include a total of 25 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to allow it to take and use groundwater and one consent to discharge stormwater and treated groundwater into an unnamed tributary of the Kurapete stream.

### **During the monitoring period, Civil Quarries Ltd demonstrated an overall level of environmental performance that required improvement.**

The Council's monitoring programme for the year under review comprised four scheduled inspections, which included stormwater discharge and stream samples collected for physicochemical analysis. A biomonitoring survey of receiving waters was also carried out, as was the annual hydrology inspection for the water take consent.

The monitoring showed that generally the site was well maintained and had no visual impact on the water quality of the receiving waters. By comparison with previous years, the monitoring indicated an improvement in the discharge quality from the quarry. A biomonitoring survey carried out in summer showed no detrimental impact of quarry activities on the macroinvertebrate community of the Kurapete Stream. There were however still two incidents of an exceedance of a consent condition in relation to turbidity limits in the Kurapete Stream. Due to an analytical error, the non-compliances were not identified within a timeframe of which enforcement action could be taken. Subsequent sampling events found conditions were being complied with and discharges from the site were found to be having no adverse effects on instream biota. The Company was issued with a warning regarding future compliance with consent conditions. These issues have also been the subject of abatement and infringement notices in previous monitoring periods.

During the year, the Company demonstrated a level of environmental performance that required improvement and a good level of administrative performance with the resource consents as defined in Section 1.1.4. During the year under review the consent variations were completed, the company installed flowmeters on both water take and discharge points, the stormwater and washwater systems were upgraded and a Stormwater Management Plan (SMP), Contingency Plan and Environmental Monitoring Programme (EMP) were submitted. However improvements are required in stormwater management due to issues mentioned above and the EMP needs to be implemented, including drilling of the groundwater monitoring bores.

For reference, in the 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance is improving.

This report includes recommendations for the 2019-2020 year, including a recommendation relating to an optional review of consent 1113-5.1 and 10247-1.1.



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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 2018 to June 2019 by Taranaki Regional Council (the Council) describing the monitoring programme associated with resource consents held by Civil Quarries Ltd (the Company). The Company operates a quarry situated on Everett Road at Everett Park. Variations to the consents held by the Company were issued in early June 2019, as such this report will assess compliance against both the previous and current versions of the consents.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to abstractions and discharges of water in the Kurapete catchment. This is the 24<sup>th</sup> annual report to be prepared by the Council to cover the quarry's water discharges and their effects; it is the third report under the current Company's management.

### 1.1.2 Structure of this report

**Section 1** of this report is a background section. It sets out general information about:

- consent compliance monitoring under the *Resource Management Act 1991* (RMA) and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Kurapete catchment;
- the nature of the monitoring programme in place for the period under review; and
- a description of the activities and operations conducted in the Company's site/catchment.

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

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

**Section 4** presents recommendations to be implemented in the 2019-2020 monitoring year.

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); and
- 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 Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

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

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

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

#### Environmental Performance

**High:** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving 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 during investigations of incidents reported to the Council by a third party, 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 during investigations of incidents reported to the Council by a third. 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 during investigations of incidents reported to the Council by a third party. 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 2018-2019 year, consent holders were found to achieve a high level of environmental performance and compliance for 83% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 13% of the consents, a good level of environmental performance and compliance was achieved.<sup>1</sup>

## 1.2 Process description

The Company's quarrying operation is located adjacent to the true right bank of the Kurapete Stream at Everett Road, near Inglewood. The current site is approximately 10 ha in total area, encompassing active excavation areas, stormwater treatment ponds, stockpiling and processing areas. Processing facilities include machinery for dry crushing and a washing and screening plant. Some aggregate washing is performed at the site, generating washwater that must be managed as part of the site operations. Photo 1 shows the process area, including the new washwater treatment ponds, and the current excavation area in the background.

Figure 1 shows the quarry location and discharge points; a more detailed map on stormwater and washwater ponds can be found in Appendix 2. The new washwater treatment system is a series of ponds in the quarry basin (Ponds A1-A4), beside the new sand wash plant. Washwater is pumped back to the sand wash plant via a pump station from pond A4. The system is closed loop and does not discharge to the tributary.

The site has both a primary and a secondary 'emergency' stormwater system. The quarrying area is contoured and bunded so that stormwater is directed to the first of the settling ponds (Pond A) in the base

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<sup>1</sup> The Council has used these compliance grading criteria for 15 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

of the quarry floor. Groundwater from the lowest point of the quarry is pumped out to be used for washing and excess water is pumped to Pond A. Water then continues through the primary treatment system - Ponds B, C and D before reaching the final Pond F. There is an emergency overflow pipe from Pond A to the secondary system - Pond E in the upper quarry area, which then flows through ponds 3 and 4 to Pond F. Discharge from Pond F is via a steel pipe access culvert to the tributary, which flows approximately 600 m before joining the Kurapete Stream, upstream of the Everett Road Bridge. Gravel filtered surface runoff from the entrance to the quarry, off Everett Road, and the upstream farm drainage enter the northern boundary drain, which also discharges into the unnamed tributary.



Photo 1 Everett Road Quarry view from upper pond area, looking at new washwater treatment ponds and active excavation area.

### 1.3 Resource consents

The Company holds two resource consents, the details of which are summarised in the table below, along with the superseded consents. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

A summary of the various consent types issued by the Council is included Appendix I, as are copies of all permits held by the Company during the period under review.

Table 1 Resource consents held by the Company during the 2018-2019 monitoring period

Consent number	Purpose	Granted	Review	Expires
<i>Water abstraction permits</i>				
<b>10247-1</b>	To take groundwater incidental to quarry operations and for aggregate washing purposes	1 Dec 2016	-	Superseded
<b>10247-1.1</b>	To take groundwater incidental to quarry operations and for aggregate washing purposes	11 Jun 2019	Jun 2020	1 Jun 2033
<i>Water discharge permits</i>				
<b>1113-5</b>	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	1 Dec 2016	-	Superseded
<b>1113-5.1</b>	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	11 Jun 2019	Jun 2020	1 Jun 2033

## 1.4 Monitoring programme

### 1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

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 Everett Road Quarry site consisted of four 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;
- discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

### 1.4.3 Site inspections

The Everett Road site was visited five times during the monitoring period. With regard to consents for the abstraction of or 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, as well as an inspection of recently installed flow gauges. Sources of data being collected by the Company were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

#### 1.4.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone.

The stormwater discharge was sampled on four occasions, and the sample analysed for electrical conductivity, pH, total hydrocarbons and total suspended solids. The Kurapete Stream was sampled on four occasions, and the samples analysed for electrical conductivity, pH, total hydrocarbons, total suspended solids and turbidity.

#### 1.4.5 Biomonitoring surveys

A biological survey was performed on the Kurapete Stream to determine whether or not the discharge of treated stormwater and groundwater has had a detrimental effect upon the communities of the stream.

## 2 Results

### 2.1 Water

#### 2.1.1 Inspections

##### 26 October 2018

Scheduled inspection undertaken by two investigating officers. It was noted that rainfall had occurred the night before. The wash pad was active at the time of inspection. Water discharging from the site appeared visually very slightly turbid and downstream of the discharge was clear. Scheduled samples were taken. New ponds had been installed as per proposed in the consent review application and the quarry size had increased.

##### 13 February 2019

Scheduled inspection undertaken by an investigating officer. Overall the site was observed to be well bunded with all runoff directed to the treatment system. No washing was taking place at the time of inspection and all wash water contained within a close loop system. The discharge water appeared visually ok and scheduled samples were taken.

##### 14 May 2019

Scheduled inspection undertaken by an investigating officer. At the time of inspection, recent rainfall had occurred. Works were being undertaken to comply with requirements of the upcoming consent review. The unnamed tributary was running slightly turbid with slight foaming, however no discolouration was present in the Kurapete Stream. Scheduled samples were taken.

##### 12 June 2019

Scheduled inspection undertaken by an investigating officer. At the time of inspection, there had been recent heavy rainfall. No washwater was discharging from the pond system. Stormwater was discharging and was slightly turbid, however this looked to have cleared prior to reaching the Kurapete Stream. Scheduled samples were taken.

#### 2.1.2 Results of abstraction and discharge monitoring

Abstraction monitoring will be undertaken in the forthcoming monitoring period as the flowmeters were only installed end of June 2019. Groundwater bores are still to be installed on the site boundary to monitor for groundwater drawdown effects.

Sampling locations are described in Table 2 and indicated on the map in Figure 1.

Table 2 Locations and details of sampling sites

Site	Location	GPS coordinates	Site code
Quarry stormwater	At discharge outlet (stormwater included after Feb 1998)	1710431E 5668301N	IND002022
Kurapete Stream	100 m upstream of Everett Road bridge (upstream of quarry tributary)	1710640E 5668709N	KRP000960
Unnamed tributary	5 m upstream of the Kurapete Stream confluence (600 m downstream of discharges at quarry)	1710658E 5668713N	KRP000975
Kurapete Stream	At the Everett Road bridge (approximately 100 m downstream of quarry tributary)	1710695E 5668758N	KRP000980

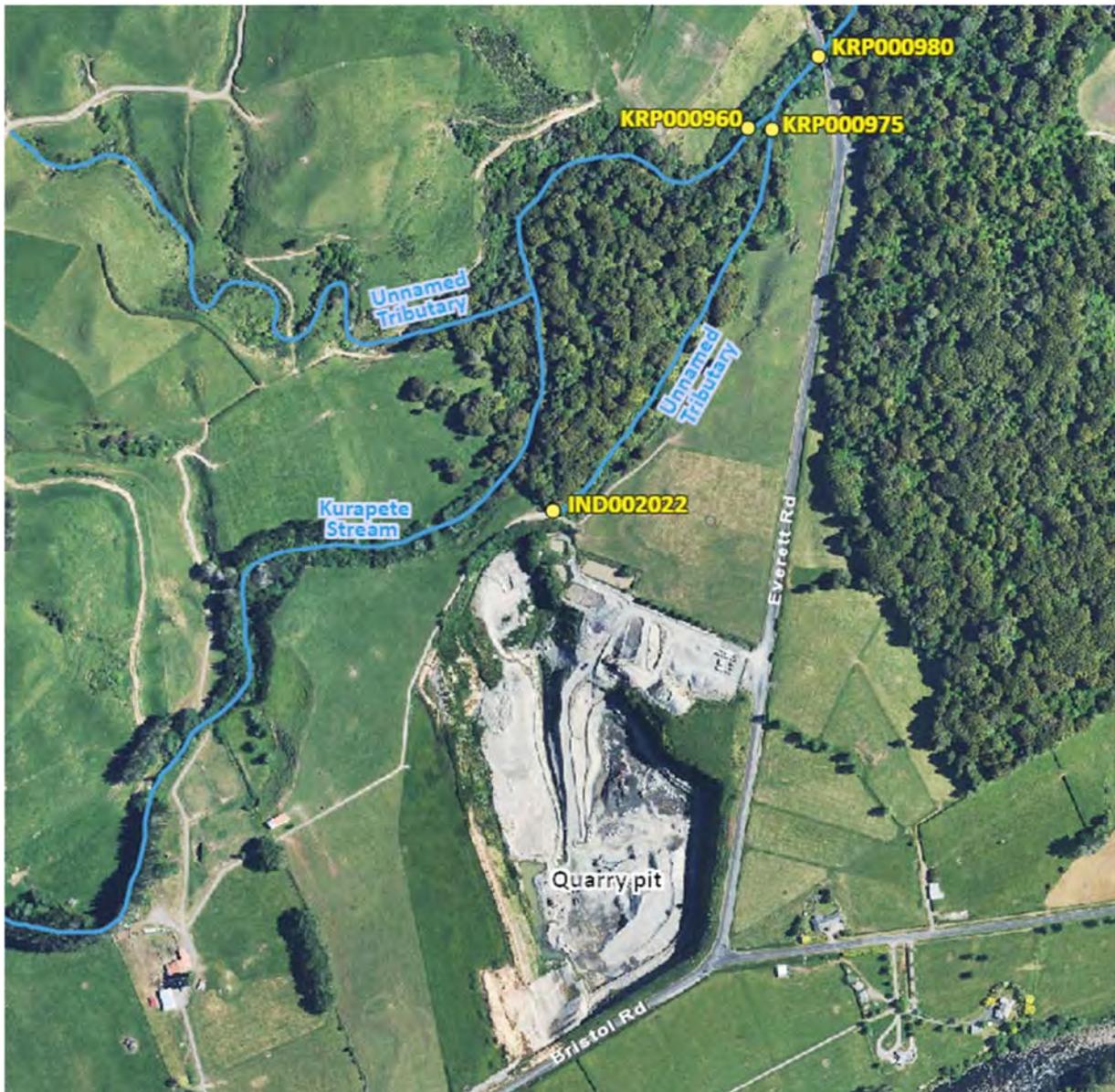


Figure 1 Sampling site locations, Everett Road Quarry

Discharge and surface water results from 2018-2019 monitoring period are presented in Tables 3-6 against the range of results at each site over the period July 2000 to June 2018.

During the monitoring period, the stormwater discharge from the quarry was compliant with consent conditions at the time of each inspection (see Table 3).

Table 3 Stormwater discharge monitoring results for IND002022

Discharge (IND002022)								
Parameter	Unit	Consent limits	Minimum	Maximum	TRC184373	TRC190730	TRC192074	TRC192327
			July 2000 - June 2018		26-Oct-18	13-Feb-19	14-May-19	12-Jun-19
			-	-	12:00	12:40	10:50	13:00
Electrical conductivity	mS/m	-	8.8	49.7	42.7	43.4	60.2	55.4
pH	pH	<b>6-9</b>	6.3	7.9	7.7	7.8	6.8	7.3
Suspended solids	g/m <sup>3</sup>	<b>100</b>	6	650	17	12	13	15

Discharge (IND002022)								
Parameter	Unit	Consent limits	Minimum	Maximum	TRC184373	TRC190730	TRC192074	TRC192327
			July 2000 - June 2018		26-Oct-18	13-Feb-19	14-May-19	12-Jun-19
			-	-	12:00	12:40	10:50	13:00
Total hydrocarbons	g/m <sup>3</sup>	<b>15</b>	-	-	<4	<4	<4	<4

Monitoring results from the Kurapete Stream showed the samples taken from all sampling points on 14 May 2019 and 12 June 2019 were compliant with consent conditions at the time of sampling. The samples taken on 26 October 2018 and 13 February 2019 showed non-compliances in the turbidity results. The downstream sample (KRP000980, Table 6) must be less than 50% NTU higher than the upstream sample (KRP000960, Table 4). The downstream result in October 2018 was 1.1 NTU over the 50% threshold. The downstream result in February 2019 was 3.7 NTU over the 50% threshold. All other parameters were within consent conditions. These results are discussed further in Section 3.1.

Table 4 Kurapete Stream monitoring results for the upstream site

Kurapete Stream Upstream (KRP000960)							
Parameter	Unit	Minimum	Maximum	TRC184374	TRC190731	TRC192076	TRC192328
		July 2000 - June 2018		26-Oct-18	13-Feb-19	14-May-19	12-Jun-19
		-	-	11:25	13:10	10:15	12:30
Electrical conductivity	mS/m	7.3	31.2	14.6	17.9	12.6	12.3
pH	pH	7.1	7.9	7.8	7.8	7.4	7.4
Suspended solids	g/m <sup>3</sup>	2	650	<5	<5	<3	<3
Turbidity	NTU	1	710	1.73	1.55	1.59	1.57
Total hydrocarbons	g/m <sup>3</sup>	-	-	<0.7	<0.7	<0.7	<0.7

Table 5 Monitoring results for the confluence of the Kurapete Stream and Unnamed tributary

Downstream - tributary confluence (KRP000975)							
Parameter	Unit	Minimum	Maximum	TRC184375	TRC190732	TRC192075	TRC192329
		July 2000 - June 2018		26-Oct-18	13-Feb-19	14-May-19	12-Jun-19
		-	-	11:32	13:20	10:25	12:20
Electrical conductivity	mS/m	11.1	41.6	15.6	33.1	44.5	48.8
pH	pH	6.8	7.8	7.7	7.8	7.2	7.3
Suspended solids	g/m <sup>3</sup>	3	79	< 5	7	5	9
Turbidity	NTU	2	65	2.7	8.7	5.7	8.7
Total hydrocarbons	g/m <sup>3</sup>	-	-	<0.7	<0.7	<0.7	<0.7

Table 6 Kurapete Stream monitoring results for the downstream site

Downstream - bridge (KRP000980)							
Parameter	Unit	Minimum	Maximum	TRC184376	TRC190733	TRC192077	TRC192330
		July 2000 - June 2018		26-Oct-18	13-Feb-19	14-May-19	12-Jun-19
		-	-	11:40	13:00	10:30	12:50
Electrical conductivity	mS/m	7.9	21	17	31.7	14.5	18.3
pH	pH	7	7.8	7.5	7.7	7.3	7.4
Suspended solids	g/m <sup>3</sup>	2	170	<5	6	<3	<3
Turbidity	NTU	1	150	3.7 (2.6)*	6.0 (2.3)*	2.0 (2.4)*	2.5 (2.4)*
Total hydrocarbons	g/m <sup>3</sup>	-	-	<0.7	<0.7	<0.7	<0.7

\*Turbidity limit based on upstream result (Table 4).

### 2.1.3 Results of receiving environment monitoring

The Council's standard 'kick-sampling' technique was used at three established sites to collect streambed macroinvertebrates from the Kurapete Stream. Samples were processed to provide number of taxa (richness), Macroinvertebrate Community Index (MCI) and SQMCI scores and EPT taxa for each site.

Taxa richness is the most robust index when ascertaining whether a macroinvertebrate community has been exposed to toxic discharges. It can also be a reflection of limited food or habitat availability which might be expected if suspended or settled silt was an issue at a site. The MCI is a measure of the overall sensitivity of the macroinvertebrate community to the effects of organic pollution in stony streams. It is based on the presence/absence of taxa with varying degrees of sensitivity to environmental conditions. The SQMCI takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. It may also provide more relevant information than the MCI in relation to non-organic impacts. Differences in either the MCI or the SQMCI between sites indicate the degree of adverse effects (if any) of the discharges being monitored. EPT taxa (mayflies, stoneflies and caddisflies) are generally more sensitive to fine suspended sediment (Clapcott, et al. 2011) compared with other macroinvertebrate taxa and are therefore particularly useful indicators of potentially harmful sediment discharges.

There was only minor variation among sites for taxa richness. Taxa richness were lower than historic medians for all three sites and has decreased over the last three surveys but this would be unrelated to quarry activities. Site 1 had 'good' macroinvertebrate health and both 'impact' sites were in 'fair' health, with MCI scores that were not significantly different to the 'control' site score and historic medians. The SQMCI score for site 1 was indicative of 'good' water quality and sites 2 and 3 were in 'fair' health but again the scores were not significantly different between sites. Furthermore, sites 2 and 3 had scores significantly higher than historic medians indicating better than usual macroinvertebrate community health.

The community composition between sites showed only small differences in EPT (mayflies, stoneflies and caddisflies) taxa number and percentage of total taxa. EPT taxa are generally more sensitive to fine suspended sediment compared with other macroinvertebrate taxa and are therefore particularly useful indicators of potentially harmful sediment discharges. No change in % EPT taxa between sites 1 and 2 occurred for the current survey which indicated that sediment discharges were not negatively affecting the macroinvertebrate communities. Overall, the survey indicated that quarry discharges entering the stream from a small tributary draining the quarry area were not having a negative effect on macroinvertebrate communities.

Copies of biomonitoring reports for this site are available from the Council upon request.

## 2.2 Incidents, investigations, and interventions

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

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

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 individual/organisation is indeed the source of the incident (or that the allegation cannot be proven).

Table 7 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to the Company's activities during the 2018-2019 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

A Council Officer discovered a non-compliance whilst reviewing surface water and stormwater sampling results. Initially the sampling results from the 26 October 2018 and 13 February 2019 were deemed compliant with special condition 18 of resource consent 1113-5.0, which limits the turbidity of the Kurapete Stream, downstream of the discharge point. Due to an error in comparison between sampling points, compliance was incorrectly given at the time. It was since found that the results were non-compliant, but as the environmental impact was deemed minor and the following inspections with sampling (14 May 2019 and 12 June 2019) showed compliance, no enforcement action was taken. The Investigating Officer who took the samples also reported that there was no visual discolouration of the discharge, unnamed tributary or stream on either occasion. The Company was notified of the non-compliant results and reminded of the details of special condition 18.

Due to the long process of the Company making variations to the consent conditions and completing upgrades to the stormwater treatment system, flowmeters had not been installed at the site since the issuing of the original consent. The Council visited the site in March 2019 to inspect potential locations for the flowmeters and offer advice. After delays in the issuing of the consent variations, the Council pursued the issue and flowmeters were installed and verified in June 2019, as required by the new consent conditions in consents 1113-5.1 and 10247-1.1.

The groundwater monitoring bores had also not been installed as the process of finding a suitable driller and gaining access to neighbouring properties and/or roadside land proved more complicated than anticipated. Updates to the monitoring programme were given, detailing suitable locations and depths for the monitoring bores. A meeting was held between Council staff and the Company in December 2019 to determine a timeline for installing the bores without further delays. A plan of action will be provided by the Company by 31 December 2019, with drilling contracts confirmed and a hydrogeologist engaged to supervise the drilling by 31 January 2020. Two bores will be drilled by 30 June 2019 and the final bore will be drilled by 31 December 2020. The Council will follow up before each due date to ensure the timeline is complied with.

Table 7 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
26/10/2018	Turbidity limits slightly exceeded in the downstream sample	N	No	Given the low level breach and delays in reporting this, the Company was notified of breach of consent and given warning
13/02/2019	Turbidity limits slightly exceeded in the downstream sample	N	No	Given the low level breach and delays in reporting this, the Company was notified of breach of consent and given warning
26/03/2019	Flowmeters had not been installed, cited to be pending issue of consent variation	N	No	The Council worked with the Company to ensure flowmeters were installed before the deadline given in the new consent variation
26/03/2019	Groundwater bores had not been installed due to various delays in finding a driller, locating suitable positions and discussions with landowners.	N	No	Council is still working with the Company to complete the installation of the bores. A timeline of works will be provided by 31 December 2019 and bores will be completed by 31 December 2020.

## 3 Discussion

### 3.1 Discussion of site performance

As with previous annual reports, it is difficult to assess site performance as the consent variations mentioned in the 2017-2018 report were not granted until June 2019, the end of this monitoring period. The proposed changes meant that works required in the original consent were likely to differ from the works required in the new consent. In light of this, an allowance had been made to allow the Company to defer some of the work required to meet consent conditions, until such a point that the requirements of any varied consent conditions were finalised. It was considered that such a delay would not result in any adverse environmental effects.

One of the outstanding special conditions was to install flowmeters at the groundwater take and stormwater discharge points. As mentioned in section 2.2, this was delayed until after the consent variations were completed and were installed within the timeframes stipulated on the new consent. Documentation of certification was also provided within the specified timeframe. The Company also installed a third flowmeter to monitor the flow of water through the secondary stormwater system. The other outstanding special condition was to install three groundwater monitoring bores. As these need to be drilled to around 80m deep, the drilling requires a considerable amount of planning and supervising. Gaining access to suitable locations outside the Company's site has also been problematic. As explained in section 2.2, the Council has agreed to the Company spreading out the drilling of these bores over the next year. The drilling will be supervised by a hydrogeologist to ensure they are drilling into an aquifer that interacts with the quarry floor.

The required EMP that monitors the effects of the activity on the surrounding aquifer was submitted to Council within the timeframe specified in the new consent conditions. The monitoring programme covers collating climate data, details of where the groundwater bores will be drilled and how they will be monitored, proposed stream flow monitoring and how this data will be reported on and presented to Council when required.

The Company has been working on upgrades to the stormwater treatment system and reticulating washwater treatment system. The new stormwater system is comprised of a primary system and an emergency secondary system. Together the systems provide more than double the required holding capacity for a quarry of this size. The new sand washwater system is completely separate from the stormwater system and is able to draw from the first primary stormwater pond when needed. The scale of the upgrades was intended to future proof the quarry for further extractions. However poor sampling results during the year indicated further work needs to be done to ensure enough settling time in the ponds to remove fine particles from suspension. The Company is dedicated to continuous improvement and plan to keep working on the stormwater treatment system and improving the management of it.

The SMP has been accepted by council and covers an explanation of the pond systems including the recycling and disposal of washwater, a pond inspection and maintenance schedule, staff training, planned water quality monitoring and details of the flowmeter positioning. The Contingency Plan is in the final stages of completion and comprehensively covers staff training, an explanation of the risks on site, how to prevent spills, the resources available for responding to spills and the set response procedures for three types of spills on site.

### 3.2 Environmental effects of exercise of consents

The main potential environmental effect of quarrying activities on waterways is associated with discharges of stormwater containing fine silt particles and high suspended solids concentrations. These discharges can result in discolouration of the receiving waters, smother benthic life forms and form a barrier to fish movement and/or affect fish spawning habitats. This has been shown to be particularly relevant in the lower

reaches of the Kurapete Stream, near its confluence with the Manganui River (TRC, 2018). The Civil Quarries site is particularly important as it is immediately upstream of the DoC Everett Park Scenic Reserve, which is a popular location for swimming and fishing.

Biomonitoring reports over the last three years have shown the discharge from the quarry has consistently had no negative effect on the macroinvertebrate community of the Kurapete Stream. Over the five years prior, under previous ownership the quarry discharges generally had minimal effect, except in the last year of ownership in which discharges had significant negative impacts on stream health (TRC, 2016 A). The water quality upstream of the quarry has generally improved over the years, necessitating an improvement in the discharge quality from the quarry site.

Over the 2018-2019 monitoring period there were no instances of discharge causing significant negative effects on the receiving environment. The Investigating Officer did not record any changes in visual water clarity in the Kurapete Stream. It is noted however that on two instances, the NTU limit was exceeded downstream of the mixing zone. This highlights that even if the water is visually clear, it may still be outside consent limits due to the sensitive nature of the receiving environment and improved upstream water quality. This re-iterates the need for continual improvement of the stormwater treatment system.

Due to the extensive nature of the quarry operation, there is potential that groundwater levels in the surrounding area are being effected by the dewatering operation onsite. This effect will be monitored and reported on in the coming monitoring period, after the installation of groundwater monitoring bores.

### 3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Table 8 to Table 11. Compliance is assessed against both versions of the consent, as the new consent was granted during the monitoring period.

Table 8 Civil Quarries Ltd summary of performance for consent 1113-5 (1 July 2018 to 11 June 2019)

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Company to upgrade pond system as per supplied documentation	Inspections of treatment system and discharge point, liaison with Council	Yes
2. Upgrades to be completed within three months of issuing of consent	Inspections of treatment system and discharge point, liaison with Council	No – deferred until after consent variation
3. Provision of stormwater management plan	Plan to be supplied following change to consent conditions	No – deferred until after consent variation
4. Company to isolate washwater from stormwater unless due to heavy rain events	Inspections of treatment site	Yes
5. Location of discharge point	Inspections of treatment system and discharge point	Yes
6. Company to adopt best practicable option	Inspections of treatment system and discharge point, liaison with Council, sampling of discharge and receiving waters	Yes
7. Limits quarry catchment area	Inspections	Yes

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
8. Maximum discharge rate to not exceed 10 L/s	Inspections and supply of water meter data	No – not assessed
9. Company to install and maintain water meter and datalogger on discharge	Inspections, meter verification and supply of water meter data	No – deferred until after consent variation
10. Company to notify prior to modifying processes or equipment	Notification if and when required	N/A
11. No discharge of untreated stormwater/washwater/ groundwater	Inspections of treatment system and discharge point	Yes
12. Washwater treatment system to be bunded	Inspections of treatment system	Yes
13. Active quarry site to be contoured and bunded to direct water into treatment system	Inspections of treatment system	Yes
14. Measures taken to reduce sediment in the discharge	Inspections of treatment system and discharge point	Yes
15. Company to maintain silt control structures	Inspections of treatment system and discharge point	Yes
16. Discharge concentration limits	Physicochemical sampling	Yes
17. Discharge to not adversely affect receiving waters	Inspection and physicochemical sampling of receiving waters, biological sampling	Yes
18. Turbidity limit for receiving waters relative to discharge	Physicochemical sampling	No
19. Contingency plan maintained	Plan received	Yes
20. Optional review of consent	No review sought by Council	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		<b>Good Improvement required</b>

N/A = not applicable

**Table 9 Civil Quarries Ltd summary of performance for consent 10247-1 (1 July 2018 to 11 June 2019)**

<b>Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Abstraction rate shall not exceed 10 L/s	Inspections and data review	No – deferred until after consent variation
2. Installation and maintenance of water meter and datalogger at water take	Inspections and data review	No – deferred until after consent variation

<b>Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
3. Abstraction data formatting and supply requirements	Abstraction data review	No – deferred until after consent variation
4. Flow meter to be verified	Inspection and certification to be supplied	No – deferred until after consent variation
5. Company to notify if recording equipment repairs are required	Notification if and when required	N/A
6. Company to undertake groundwater monitoring programme	Indicative monitoring programme received, possible modifications depending on outcome of changes to consents	No - no groundwater bores installed
7. Water meters to be accessible for data retrieval	Inspections	N/A
8. Company to adopt best practicable option to minimise adverse effects on groundwater	Inspections, data review, groundwater level monitoring	No - no monitoring programme undertaken
9. Optional review of consent	No review sought by Council	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		<b>Improvement required</b> <b>Improvement required</b>

N/A = not applicable

Table 10 Civil Quarries Ltd summary of performance for consent 1113-5.1 (11 June 2019 to 30 June 2019)

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Maximum discharge rate to not exceed 20 L/s	Inspections and supply of water meter data	N/A – no data
2. Exception of exceedance of condition 1 due to 'heavy rain'	Inspections and supply of water meter data	N/A – no data
3. Provision of stormwater management plan by 1 August 2019	Plan accepted by Council	Yes
4. No washwater to enter stormwater unless due to 'heavy rain'	Inspections of stormwater and washwater treatment systems	Yes
5. Location of discharge point	Inspections of treatment system and discharge point	Yes
6. Company to adopt best practicable option	Inspections of treatment system and discharge point, liaison with Council, sampling of discharge and receiving waters	Yes

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
7. Limits quarry catchment area	Inspections of site	Yes
8. Company to install and maintain water meter and datalogger on discharge	Inspections, meter verification and supply of water meter data	Yes
9. Specifications on discharge records	Auditing of discharge records	N/A – no data
10. Measuring and recording equipment to be accessible for data retrieval	Inspection	Yes
11. Active quarry site to be contoured and bunded to direct water into treatment system	Inspections of treatment system and site	Yes
12. Discharge concentration limits	Physicochemical sampling	Yes
13. Discharge to not adversely affect receiving waters	Inspection and physicochemical sampling of receiving waters, biological sampling	Yes
14. Turbidity limit for receiving waters relative to discharge	Physicochemical sampling	Yes
15. Contingency plan maintained	Plan received	Yes
16. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		<b>High</b>
Overall assessment of administrative performance in respect of this consent		<b>High</b>

N/A = not applicable

Table 11 Civil Quarries Ltd summary of performance for consent 10247-1.1 (11 June 2019 to 30 June 2019)

<b>Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Abstraction rate shall not exceed 20 L/s	Inspections and data review	N/A – no data
2. Installation and maintenance of water meter and datalogger at water take	Inspections and data review	N/A – no data
3. Abstraction data formatting and supply requirements	Abstraction data review	N/A – no data
4. Flow meter to be verified	Inspection and certification to be supplied at least once every 5 years	Yes
5. Company to notify if recording equipment repairs are required	Notification if and when required	N/A

Purpose: <i>To take groundwater incidental to quarry operations and for aggregate washing purposes</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
6. Company to undertake groundwater monitoring programme	Monitoring programme has been supplied	No – timeline of works has been established
7. Water meters to be accessible for data retrieval	Inspections	Yes
8. Company to adopt best practicable option to minimise adverse effects on groundwater	Inspections, data review, groundwater level monitoring	No – monitoring programme still in progress
9. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		<b>Improvement required High</b>
Overall assessment of administrative performance in respect of this consent		

N/A = not applicable

Table 12 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2017	1113-5	-	-	1	-
	10247-1	-	-	1	-
2018	1113-5	-	-	1	-
	10247-1	-	-	1	-
Totals		-	-	4	-

During the year, the Company demonstrated a level of environmental performance that required improvement and a good level of administrative performance with the resource consents as defined in Section 1.1.4. During the year under review the consent variations were completed, the company installed flowmeters on both water take and discharge points, the stormwater and washwater systems were upgraded and a SMP, Contingency Plan and EMP were submitted. However improvements are required in stormwater management as there were some issues complying with turbidity limits in the receiving waters and the EMP needs to be implemented, including drilling of the groundwater monitoring bores.

### 3.4 Recommendations from the 2017-2018 Annual Report

In the 2017-2018 Annual Report, it was recommended:

1. THAT in the first instance, the Company completes the work specified in their application to change the conditions of discharge permit 1113-5 and abstraction permit 10247-1, including modification of their existing water circulation systems, and installation of an appropriate groundwater monitoring programme.
2. THAT should there be issues with environmental or administrative performance in 2018-2019, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

3. THAT monitoring as per the accepted consent conditions commences immediately or enforcement action be undertaken.

The changes to consent conditions were completed and upgrades to the stormwater and washwater treatment systems were made. The groundwater monitoring programme has not yet been implemented, but further interventions have produced a timeline of works that has been agreed upon.

### 3.5 Alterations to monitoring programmes for 2019-2020

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- 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 exercising resource consents.

It is proposed that for 2019-2020 the monitoring programme shall be undertaken as per 2018-2019. Any additional monitoring will be discussed after the implementation of the groundwater monitoring bores.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site(s) in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2019-2020.

### 3.6 Exercise of optional review of consent

Resource consent 1113-5.1 provides for an optional review of the consent in June 2020. Condition 16 allows the Council to review the consent for the purposes of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the 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, specifically including the turbidity limits set in condition 14.

Resource consent 10247-1.1 provides for an optional review of the consent in June 2020. Condition 9 allows the Council to review the consent for the purposes of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or requiring continuous measuring and recording of the flow immediately downstream of the take site.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

## 4 Recommendations

1. THAT in the first instance, the agreed timeline of works for implementing the EMP, including drilling of groundwater monitoring bores be carried out without delays.
2. THAT monitoring of consented activities at Civil Quarries in the 2019-2020 year continue at the same level as in 2018-2019.
3. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
4. THAT the option for a review of resource consent(s) in June 2020, as set out in condition 16 of consent 1113-5.1 and condition 9 or consent 10247-1 not be exercised, on the grounds that aspects of the monitoring programme still need to be implemented and effects have not yet been determined.

## 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.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 25°C and expressed in mS/m.
EMP	Environmental Monitoring Programme
EPT (taxa)	Ephemeroptera, Plecoptera, Tricoptera Index (mayflies, stoneflies and caddisflies)
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
Incident Register	The 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.
L/s	Litres per second.
m <sup>2</sup>	Square Metres.
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.
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.
MPN	Most Probable Number. A method used to estimate the concentration of viable microorganisms in a sample.
mS/m	Millisiemens per metre.
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
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	<i>Resource Management Act 1991</i> and including all subsequent amendments.

SMP	Stormwater Management Plan
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.

For further information on analytical methods, contact a Science Services Manager.

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# Appendix I

## Resource consents held by Civil Quarries Ltd

(For a copy of the signed resource consent  
please contact the TRC Consents department)

Consent number	Purpose	Granted	Review	Expires
<i>Water abstraction permits</i>				
<b>10247-1</b>	To take groundwater incidental to quarry operations and for aggregate washing purposes	1 Dec 2016	-	Superseded
<b>10247-1.1</b>	To take groundwater incidental to quarry operations and for aggregate washing purposes	11 Jun 2019	Jun 2020	1 Jun 2033
<i>Water discharge permits</i>				
<b>1113-5</b>	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	1 Dec 2016	-	Superseded
<b>1113-5.1</b>	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	11 Jun 2019	Jun 2020	1 Jun 2033

### Water abstraction permits

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. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

### Water discharge permits

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

### Air discharge permits

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. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

### Discharges of wastes to land

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

### Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Land use permits are issued by the Council under Section 87(a) of the RMA.

### Coastal permits

Section 12(1)(b) of the RMA stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is

expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Coastal permits are issued by the Council under Section 87(c) of the RMA.



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

Name of  
Consent Holder:                   Inglewood Metal Limited  
  PO Box 44  
  Inglewood 4347

Decision Date:                    10 November 2016

Commencement Date:            1 December 2016

**Conditions of Consent**

Consent Granted:                To discharge treated stormwater and treated groundwater  
  from quarry activities into an unnamed tributary of the  
  Kurapete Stream

Expiry Date:                    1 June 2033

Review Date(s):                Annual reviews for the first 5 years and biennial reviews  
  thereafter

Site Location:                   Everett Road, Inglewood

Grid Reference (NZTM)        1710454E-5668324N

Catchment:                    Waitara

Tributary:                      Manganui  
  Kurapete

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

**General condition**

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

**Special conditions**

1. The consent holder shall implement all upgrades proposed for the stormwater and washwater ponds at the site, as described in the detail provided in the application and particularly in the 'Stormwater Management' plan prepared by BTW Company Limited, Referenced 1601-03, Sheet 1, Revision 4, dated 23 August 2016 and shown in Attachment 1 of this consent. The ponds shall be of dimensions and characteristics specified below.

	Pond Reference	Minimum Depth (m)	Minimum Surface Area (m <sup>2</sup> )	Minimum Volume (m <sup>3</sup> )	Maximum Inlet Discharge rate (m <sup>3</sup> / hr.)	Minimum Retention Time (hrs.) @ 10l/s
<b>Washwater Ponds</b>	Pond 1	1	415	415	15	27.7
	Pond 2	1.5	410	615	15	41.0
<b>Stormwater Ponds</b>	Pond 3	1.5	828	1242	51	24.4
	Pond 4	1.5	137	206	51	4.0
	Pond 5	1.5	190	285	51	5.6
	Pond 6	1.5	43	65	51	1.3

*Advice Note: The sizes and retention times are a minimum but may need to be larger to ensure that all other conditions are met.*

2. The upgrades required in condition 1 above shall be completed within three months of the issue of this consent and prior to any further expansion of the active quarry stormwater catchment area from 11 ha.
3. Within one month of the issue of this consent, the consent holder shall provide a stormwater management plan for the quarry. The site shall be operated in accordance with the 'Stormwater Management Plan' approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The plan shall detail how the site will be managed to achieve compliance with the conditions of this consent and shall include but not be limited to:
  - a) monitoring the water quality and rate of the discharge into the receiving water;
  - b) treatment of stormwater, groundwater and incidental groundwater, prior to the discharge into the streams;
  - c) management/recycling of washwater on site;
  - d) disposal of recycled washwater;
  - e) management of the pond treatment systems;
  - f) maintenance of required pond depths and capacities including the minimisation of sediment and silt in the ponds;
  - g) storage and disposal of silt cleaned out from ponds;
  - h) reporting on the exercise of the consent;
  - i) measures and procedures to ensure that pond capacities are retained and maintained, including:

## Consent 1113-5.0

- i. frequency of pond cleaning;
  - ii. minimisation of sediment and silt in the ponds;
  - iii. implementing silt and sediment control measures and cut-off drains; and
  - iv. stockpiling of material cleaned out from the ponds in a way that ensure silt is not remobilised.
4. The consent holder shall implement and maintain a circulatory system that prevents any washwater entering the stormwater treatment system, unless due to heavy rain within a previous 24 hours. For the purposes of this consent 'heavy rain' refers to rainfall, as recorded at the Taranaki Regional Council rainfall recorder located at 'Manganui at Everett Park' that exceeds the intensities listed in the following table:

Time period	Rainfall Intensity (mm)
30 minute	18.6
1 hour	25.4
2 hour	36.9
6 hour	67.7
12 hour	92.1
1 day	111.1
2 day	140

5. The discharge into the unnamed tributary of the Kurapete Stream shall be located at (NZTM) 1710454E-5668324N.
6. At all times, the consent holder shall adopt the best practicable option (as defined in Part 2 of the Resource Management Act 1991) to prevent or minimise any actual or likely adverse effect on the environment associated with the discharges including, but not limited to, the water quality and aquatic habitat of the receiving waters of the Kurapete Stream and its tributary.
7. The active quarry stormwater catchment shall be no more than 13.5 hectares.
8. The maximum discharge rate of stormwater and groundwater, pumped from the lower quarry site to the upper quarry site shall not exceed 10 l/s at the inlet of pond 3, as per Attachment 1.
9. Within a month of the granting of this consent, the consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of discharge into the unnamed tributary of the Kurapete Stream. The meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of the discharge to an accuracy of  $\pm 5\%$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume the discharge, shall be made available to the Chief Executive, Taranaki Regional Council on request.

*Note: Water meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

## Consent 1113-5.0

10. Prior to undertaking any alterations to the quarry's processes, operations, equipment or layout, which may significantly change the nature or quantity of discharge into the treatment system and receiving environment, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and its amendments.
11. There shall be no direct discharge of untreated stormwater, groundwater or washwater from the active quarry site into the unnamed tributary of the Kurapete Stream as a result of the exercise of this consent.
12. The washing and washwater treatment system shall be bunded to prevent the inflow of stormwater and groundwater from other areas of the quarry.
13. The active quarry site shall be contoured and bunded so that all water generated in this area is directed to silt retention systems for treatment prior to discharge, and to prevent the flow of uncontaminated stormwater into the quarry, as far as is practicable.
14. The consent holder shall undertake measures to minimise the amounts of silt and sediment that could be contained in the discharge licensed by this consent.
15. 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 minimise the duration, frequency and rate of the discharge.
16. The following concentrations shall not be exceeded in any discharge Component Concentration.

<b>Constituent</b>	<b>Standard</b>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm <sup>-3</sup>
total recoverable hydrocarbons	Concentration not greater than 15 gm <sup>-3</sup>

This condition shall apply prior to the entry of any discharge into the receiving waters of the unnamed tributary of the Kurapete Stream, at a designated sampling point approved by the Chief Executive.

17. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to any of the following effects in the receiving waters of the Kurapete Stream:
  - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; and/or
  - b) any conspicuous change in the colour or visual clarity; and/or
  - c) any emission of objectionable odour; and/or
  - d) the rendering of fresh water unsuitable for consumption by farm animals; and/or
  - e) any significant adverse effects on aquatic life.

## Consent 1113-5.0

18. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to an increase in turbidity of the Kurapete Stream of more than 50%, as determined using NTU (nephelometric turbidity units).
19. The consent holder shall maintain a contingency plan to the satisfaction of the Chief Executive, outlining measures and procedures to be undertaken to prevent the spillage or accidental discharge of contaminants in the stormwater catchment, and measures to avoid, remedy, or mitigate the environmental effects of such a spillage or discharge.
20. 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 annually for the first 5 years and biennially thereafter for the purposes of:
  - a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
  - b) requiring continuous measuring and recording of the flow immediately downstream of the take site; and/or
  - c) requiring any data collected in accordance with the conditions of this consent to be transmitted directly to the Taranaki Regional Council's computer system, in a format suitable for providing a 'real time' record over the internet.

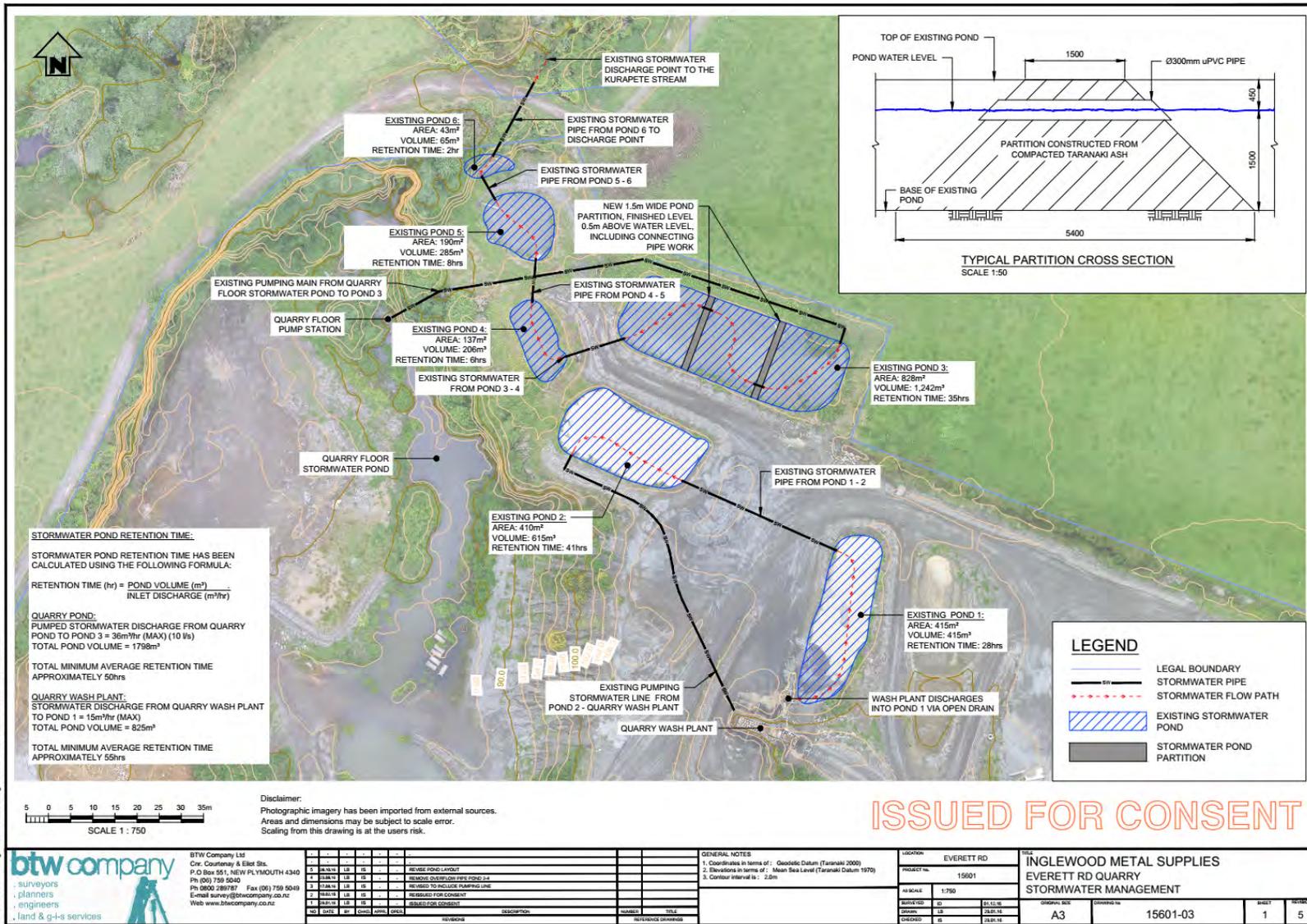
Signed at Stratford on 10 November 2016

For and on behalf of  
Taranaki Regional Council

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A D McLay  
**Director - Resource Management**

## Attachment 1: Proposed upgrade to the Stormwater Treatment System



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

Name of  
Consent Holder: Civil Quarries Limited  
PO Box 108  
Inglewood 4347

Decision Date  
(Change): 11 June 2019

Commencement Date  
(Change): 11 June 2019 (Granted Date: 1 December 2016)

**Conditions of Consent**

Consent Granted: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream

Expiry Date: 1 June 2033

Review Date(s): June 2020, June 2021, June 2022, June 2023, June 2024, June 2026, June 2028, June 2030, June 2032

Site Location: Everett Road, Inglewood

Grid Reference (NZTM) 1710454E-5668324N

Catchment: Waitara

Tributary: Manganui  
Kurapete

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

**General condition**

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

**Special conditions**

- 1. Subject to condition 2 the discharge rate shall not exceed 20 litres per second
- 2. The rate of discharge may exceed 20 litres per second if:
  - a) it is initiated no more than 15 hours after 'heavy rain', as defined in condition 4 below; and
  - b) it reduces to no more than 20 litres per second within 36 hours of the most recent 'heavy rain' event; and
  - c) it is reasonably necessary to return the quarry to an operational state.
- 3. From 1 August 2019, the site shall be operated in accordance with a 'Stormwater Management Plan' (SMP) approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The SMP shall detail how the site is managed to achieve compliance with the conditions of this consent and shall include, as a minimum, details of:
  - a) the treatment of stormwater, washwater and groundwater, including the pond configuration;
  - b) management/ recycling of washwater on site;
  - c) disposal of recycled washwater;
  - d) management of the pond treatment systems; and
  - e) maintenance programme for the treatment system;
- 4. No washwater shall enter the stormwater treatment system, unless it is due to heavy rain within the previous 24 hours. For the purposes of this consent 'heavy rain' refers to rainfall recorded at the 'Manganui at Everett Park' rain gauge that exceeds any of the rainfall intensities listed below:

Rainfall Intensity
10.7 mm in 10 minutes
15.7 mm in 20 minutes
19.2 mm in 30 minutes
25.8 mm in 1 hour
41.5 mm in 3 hours
88.0 mm in 12 hours
109 mm in 24 hours
146 mm in 72 hours

- 5. The discharge into the unnamed tributary of the Kurapete Stream shall be located at (NZTM) 1710454E-5668324N.

## Consent 1113-5.1

6. At all times, the consent holder shall adopt the best practicable option (as defined in Part 2 of the Resource Management Act 1991) to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge, including by preventing the flow of uncontaminated water into the quarry.
7. The active quarry stormwater catchment shall be no more than 13.5 hectares.
8. Before 31 July 2019 the consent holder shall install, and thereafter maintain, a meter and a datalogger at the site of discharge into the unnamed tributary of the Kurapete Stream. The meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of the discharge to an accuracy of  $\pm 5\%$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume the discharge, shall be made available to the Chief Executive, Taranaki Regional Council on request.

*Note: Meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

9. The discharge records required by condition 8 shall:
  - a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
  - b) specifically record the discharge as 'zero' when no discharge is occurring; and
  - c) be transmitted to the Taranaki Regional Council's computer system within 2 hours of being recorded.
10. All measuring and recording equipment required by this consent shall be accessible to Taranaki Regional Council Officers at all reasonable times for inspection and/or data retrieval.
11. The site shall be contoured and bunded so that all water is directed to the pond system for treatment prior to discharge. No water shall be discharged unless it has passed through the treatment pond system as detailed in the 'Stormwater Management Plan' required by condition 3 above.
12. Constituents of the discharge shall meet the standards shown in the following table.

<b>Constituent</b>	<b>Standard</b>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm <sup>-3</sup>
total recoverable hydrocarbons	Concentration not greater than 15 gm <sup>-3</sup>

These standards shall apply prior to the entry of any discharge into the receiving waters of the unnamed tributary of the Kurapete Stream, at a designated sampling point approved by the Chief Executive.

## Consent 1113-5.1

13. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to any of the following effects in the receiving waters of the Kurapete Stream:
  - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; and/or
  - b) any conspicuous change in the colour or visual clarity; and/or
  - c) any emission of objectionable odour; and/or
  - d) the rendering of fresh water unsuitable for consumption by farm animals; and/or
  - e) any significant adverse effects on aquatic life.
14. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to an increase in turbidity of the Kurapete Stream of more than 50%, as determined using NTU (nephelometric turbidity units).
15. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent, and to avoid environmental effects from a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.
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 annually for the first 5 years and at 2-yearly intervals thereafter for the purposes 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, specifically including the turbidity limits set in condition 14.

Signed at Stratford on 11 June 2019

For and on behalf of  
Taranaki Regional Council

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A D McLay  
**Director - Resource Management**

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

Name of  
Consent Holder: Civil Quarries Limited  
PO Box 108  
Inglewood 4347

Decision Date  
(Change): 11 June 2019

Commencement Date  
(Change): 11 June 2019 (Granted Date: 1 December 2016)

**Conditions of Consent**

Consent Granted: To take groundwater incidental to quarry operations and for aggregate washing purposes

Expiry Date: 1 June 2033

Review Date(s): June 2020, June 2021, June 2022, June 2023, June 2024,  
June 2026, June 2028, June 2030, June 2032

Site Location: Everett Road, Inglewood

Grid Reference (NZTM) 1710429E-5668228N

Catchment: Waitara

Tributary: Manganui  
Kurapete

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

**General condition**

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

**Special conditions**

1. The rate of taking shall not exceed 20 litres per second.
2. Before 31 July 2019 the consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of taking (or a nearby site in accordance with Regulation 10 of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010). The water meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of  $\pm 5$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume of water taken shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times.

*Note: Water meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

3. The records of water taken shall:
  - a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
  - b) specifically record the water taken as 'zero' when no water is taken; and
  - c) be transmitted to the Taranaki Regional Council's computer system within 2 hours of being recorded.
4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring equipment required by the conditions of this consent ('the equipment'):
  - a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
  - b) has been tested and shown to be operating to an accuracy of  $\pm 5\%$ .

The documentation shall be provided:

- i) within 30 days of the installation of a water meter;
- ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
- iii) no less frequently than once every five years.

## Consent 10247-1.1

5. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.
6. The consent holder shall undertake a monitoring programme that monitors the effects of this consent on the surrounding aquifer. The monitoring programme shall be submitted to the Chief Executive, Taranaki Regional Council for certification before 31 July 2019 and shall include the drilling and monitoring of a minimum of three bores at locations determined after consultation with the Chief Executive, Taranaki Regional Council.
7. All measuring and recording equipment required by this consent shall be accessible to Taranaki Regional Council Officers at all reasonable times for inspection and/or data retrieval.
8. At all times, the consent holder shall adopt the best practical option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of groundwater.
9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review annually for the first 5 years and at 2-yearly intervals thereafter for the purposes of:
  - a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
  - b) requiring continuous measuring and recording of the flow immediately downstream of the take site.

Signed at Stratford on 11 June 2019

For and on behalf of  
Taranaki Regional Council

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A D McLay  
**Director - Resource Management**



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

Name of  
Consent Holder: Inglewood Metal Limited  
PO Box 44  
Inglewood 4347

Decision Date: 10 November 2016

Commencement Date: 1 December 2016

**Conditions of Consent**

Consent Granted: To take groundwater incidental to quarry operations and for aggregate washing purposes

Expiry Date: 1 June 2033

Review Date(s): Annual reviews for the first 5 years and biennial reviews thereafter

Site Location: Everett Road, Inglewood

Grid Reference (NZTM) 1710429E-5668228N

Catchment: Waitara

Tributary: Manganui  
Kurapete

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

### General condition

- a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance with section 36 of the Resource Management Act 1991.

### Special conditions

1. The total rate of taking shall not exceed 10 litres per second.
2. The consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of taking (or a nearby site in accordance with Regulation 10 of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010). The water meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of  $\pm 5$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume of water taken shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times.

*Note: Water meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

3. The records of water taken shall:
  - a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
  - b) specifically record the water taken as 'zero' when no water is taken; and
  - c) for each 12-month period ending on 30 June, be provided to the Chief Executive, Taranaki Regional Council within one month after end of that period.
4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring equipment required by the conditions of this consent ('the equipment'):
  - a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
  - b) has been tested and shown to be operating to an accuracy of  $\pm 5\%$ .

The documentation shall be provided:

- i) within 30 days of the installation of a water meter;
  - ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
  - iii) no less frequently than once every five years.
5. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.

## Consent 10247-1.0

6. The consent holder shall undertake a monitoring programme that monitors the effects of this consent on the surrounding aquifer. The monitoring programme shall be submitted to the Chief Executive, Taranaki Regional Council for certification before 31 December 2016 and shall include the drilling and monitoring of a minimum of three bores at locations determined after consultation with the Chief Executive, Taranaki Regional Council.
7. The water meters required under condition 2 and 4 and data loggers shall be accessible to Taranaki Regional Council Officers at all reasonable times for inspection and/or data retrieval.
8. At all times, the consent holder shall adopt the best practical option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of groundwater.
9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review annually for the first 5 years and biennially thereafter for the purposes of:
  - a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
  - b) requiring continuous measuring and recording of the flow immediately downstream of the take site; and/or
  - c) requiring any data collected in accordance with the conditions of this consent to be transmitted directly to the Taranaki Regional Council's computer system, in a format suitable for providing a 'real time' record over the internet.

Signed at Stratford on 10 November 2016

For and on behalf of  
Taranaki Regional Council

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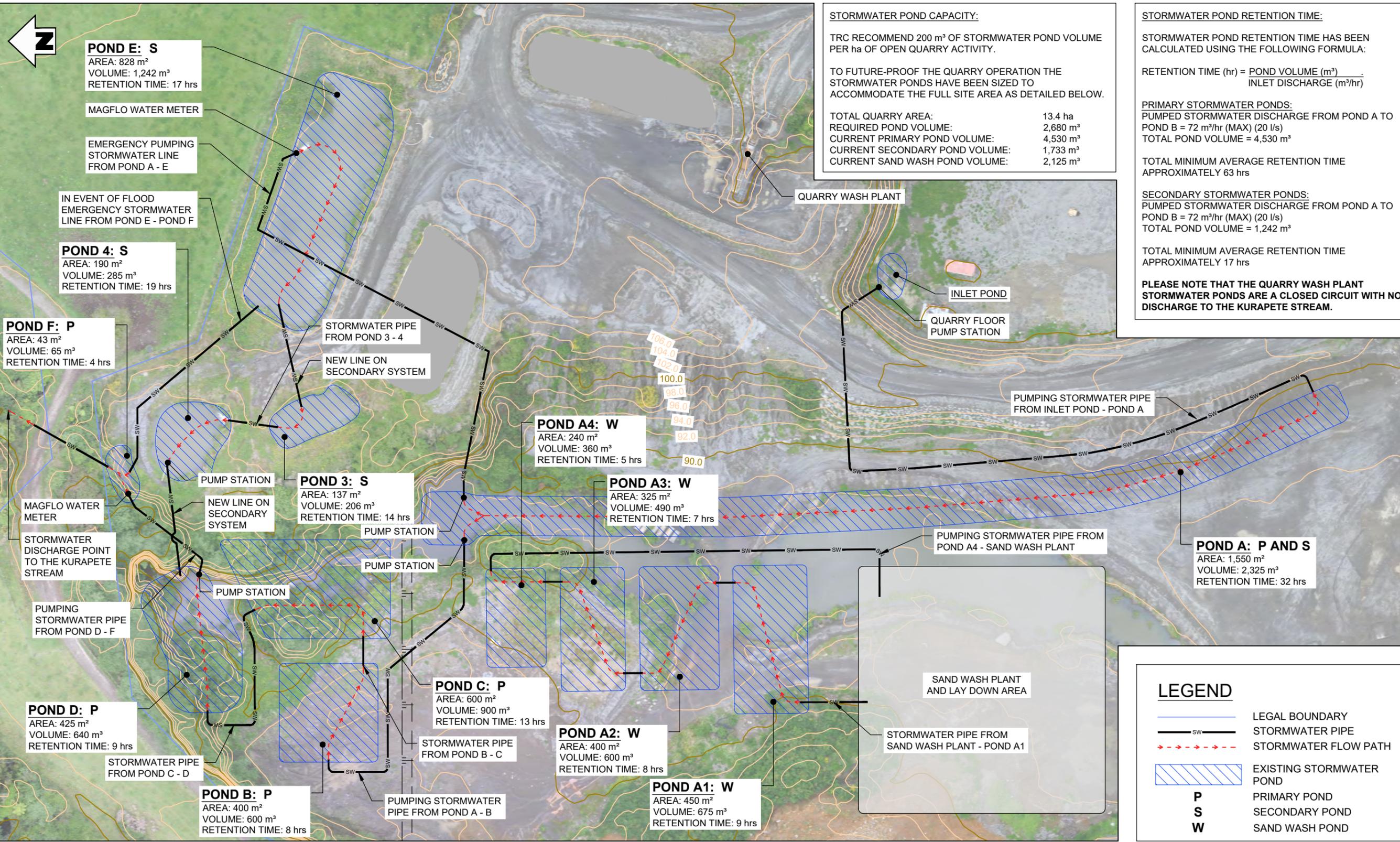
A D McLay  
**Director - Resource Management**



## Appendix II

Stormwater system Map  
Civil Quarries Everett Road  
November 2019





Disclaimer:  
 Photographic imagery has been imported from external sources.  
 Areas and dimensions may be subject to scale error.  
 Scaling from this drawing is at the users risk.

ISSUED FOR CONSENT

File Name: J:\16638\Drawings\20190820\_15601-03.dwg - SHT 1 Plot Date: 21/08/2019 Plot Time: 15:10



BTW Company Ltd  
 Cnr. Courtenay & Elliot Sts.  
 P. O Box 551, NEW PLYMOUTH 4340  
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 E-mail survey@btwcompany.co.nz  
 Web www.btwcompany.co.nz

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
12	20.08.19	PM	GJ			ISSUED FOR CONSENT		
11	09.08.18	LB	IS			ISSUED FOR CONSENT		
10	11.05.17	LB	IS			ISSUED FOR CONSENT		
9	28.04.17	LB	IS			ISSUED FOR CONSENT		
8	03.04.17	LB	IS			ISSUED FOR CONSENT		

**GENERAL NOTES**  
 1. Coordinates in terms of : Geodetic Datum (Taranaki 2000)  
 2. Elevations in terms of : Mean Sea Level (Taranaki Datum 1970)  
 3. Contour interval is : 2.0m

LOCATION	EVERETT RD
PROJECT No.	15601
A3 SCALE	1:750
SURVEYED	ID 01.12.16
DRAWN	LB 29.01.16
CHECKED	IS 29.01.16

TITLE		INGLEWOOD METAL SUPPLIES	
		EVERETT RD QUARRY	
		STORMWATER MANAGEMENT	
ORIGINAL SIZE	DRAWING No	SHEET	REVISION
A3	15601-03	1	12