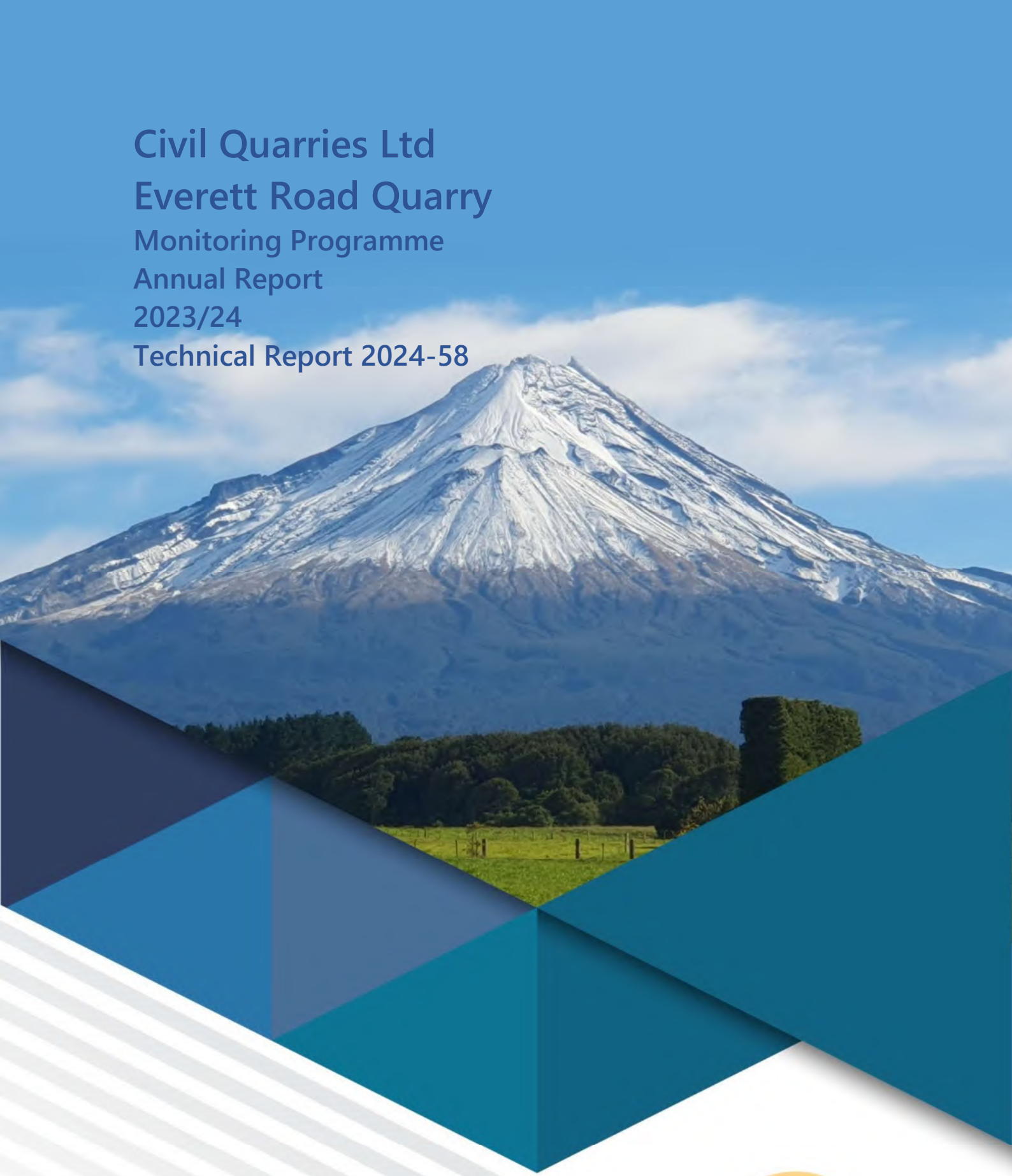
Civil Quarries Ltd
Everett Road Quarry
Monitoring Programme
Annual Report
2023/24
Technical Report 2024-58



Taranaki
Regional Council

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Taranaki Regional Council
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Executive summary

Civil Quarries Ltd (the Company) operates a quarry located on Everett Road at Everett Park near Inglewood in the Kurapete Catchment.

This report for the period 1 July 2023 to 30 June 2024 describes the monitoring programme implemented by 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 conducted and assesses the environmental effects of the Company's activities.

During the 2023/24 monitoring period, Civil Quarries Ltd demonstrated a good level of administrative performance and overall level of environmental performance that required improvement.

The Company holds two resource consents, one for stormwater discharge (R/2/1113-5.1) and one for groundwater take (R2/10247-1.1). These two consents include a total of 25 conditions which set out the requirements that the Company must satisfy (Appendix I). The quarry is actively dewatered, with intercepted groundwater and stormwater treated through a series of settlement ponds before being discharged into an unnamed tributary of the Kurapete Stream.

The Council's monitoring programme for the year under review comprised four scheduled monitoring inspections, which involved the collection of stormwater discharge and stream samples for physicochemical analysis. In addition, an on-going investigation of alternative sources of sediment was implemented, a site meeting was held, and an advice and information session was recorded. A biomonitoring survey of receiving waters was also conducted during the summer season. As part of their consent conditions, the Company is required to commission independent groundwater monitoring to elucidate the potential impacts of quarry activities upon the surrounding aquifer. Baseline data for the 2022/23 monitoring year was supplied by the Company's Environmental consultant and reviewed by Council staff. Inconsistencies were found in the groundwater data and after investigation were subsequently rectified. An amended report for the 2022/23 monitoring year was submitted to the Council in November 2024. The report for the 2023/24 year is yet to be submitted for review.

During the year under review, there were three instances of non-compliance which related to exceedances of downstream turbidity limits in the receiving waters. The Company currently is operating under the requirements of an abatement notice issued in the 2021/22 monitoring year. The Council is considering the most appropriate course of action, while an investigation to assess the potential contribution of historic deposited sediment to the downstream turbidity non-compliances is underway.

The scheduled biomonitoring survey showed that the macroinvertebrate community health indices between site 1 (the upstream site) and site 2 (the first downstream site of the quarry discharge point) were fairly similar. For this reason, it was concluded that the quarry discharges did not have a significant effect on the macroinvertebrate community immediately downstream of the point of discharge to the Kurapete Stream.

The location of the flowmeters and the perception of the data that they capture remains an issue. The Company received an abatement notice for failing to install a flowmeter at the point of discharge as per condition 8 of Consent 1113-5.1. From the Council's perspective, the current flowmeter configuration captures data for groundwater abstraction as both flowmeters record pumping of groundwater from the main excavation pit to the settling ponds. The Company makes no distinction between groundwater take and discharge or the emergency discharge rate which Consent 1113-5.1 makes concession for in condition 2.

For reference, in the 2023/24 year consent holders were found to achieve a high level of environmental performance and compliance for 864 (89%) of the 967 consents monitored through the Taranaki tailored monitoring programmes, while for another 75 (8%) of the consents a good level of environmental

performance and compliance was achieved. A further 26 (3%) of consents monitored required improvement in their performance, while the remaining two (<1%) achieved a rating of poor.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report which was written by Taranaki Regional Council (the Council) for the period 1 July 2023 to 30 June 2024, describes 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, near Inglewood.

This report covers the results and findings of the monitoring programme implemented by the Council with respect to the company's consents for groundwater abstraction and discharge to the Kurapete Stream in the Kurapete Catchment. This is the 29th annual report to be prepared by the Council to cover the water discharges from the site. It is the second report produced under the Company's current 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 though 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 2024/25 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' in as much 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 performance

Besides discussing the various details of the performance and extent of compliance by the consent holders, this report also assigns a rating as to each Company's environmental and administrative performance during the period under review. The rating categories are high, good, improvement required and poor for both environmental and administrative performance. The interpretations for these ratings are found in Appendix II.

For reference, in the 2023/24 year, consent holders were found to achieve a high level of environmental performance and compliance for 864 (89%) of a total of 967 consents monitored through the Taranaki tailored monitoring programmes, while for another 75 (8%) of the consents a good level of environmental performance and compliance was achieved. A further 26 (3%) of consents monitored required improvement in their performance, while the remaining two (<1%) achieved a rating of poor. [1]

1.2 Process description

The Company's quarrying operation is located adjacent to the true right bank of the Kurapete Stream at the corner of Everett Road and Bristol Road near Inglewood (Figure 1). The current site is approximately 11.3ha in area and includes active excavation areas, stormwater treatment ponds (Photo 1 to Photo 6), stockpiling and processing areas. Processing facilities include machinery for dry crushing and a washing and screening plant, however aggregate is no longer washed on site. The potential effects of quarry discharges upon the receiving environment are actively monitored with water samples collected at four established locations and three additional locations (Figure 1).

The site has both a primary and a secondary ('emergency') stormwater system. Groundwater from the excavation area, the lowest point of the quarry (Photo 1), is pumped to the first of the settling ponds, Pond A (Photo 2). Water is then actively pumped from Pond A through the primary treatment system - Ponds B, C (Photo 3) and up to Pond D where it flows through piping to Pond E and then F under the influence of gravity (Photo 4 to Photo 6). Discharge from Pond F to the unnamed tributary of the Kurapete Stream occurs via a steel pipe access culvert. The tributary flows approximately 600m before joining the Kurapete Stream upstream of the Everett Road Bridge. In an emergency (e.g., during a sustained heavy rain event), Ponds B and C are bypassed as water is pumped directly from Pond A to Pond D where it travels through the system to Pond F. Contouring and bunding of the site directs stormwater to Ponds A and A1 to A3 (See Appendix III for a detailed Stormwater Management map). Ponds A1 to A3 form a closed system in

[1] The Council has used these compliance grading criteria for more than 20 years. They align closely with the four compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

which water retained in these ponds does not discharge to the stream. Gravel-filtered surface runoff from the Everett Road entrance to the quarry and the upstream farm drainage enter the northern boundary drain and also discharge into the unnamed tributary.

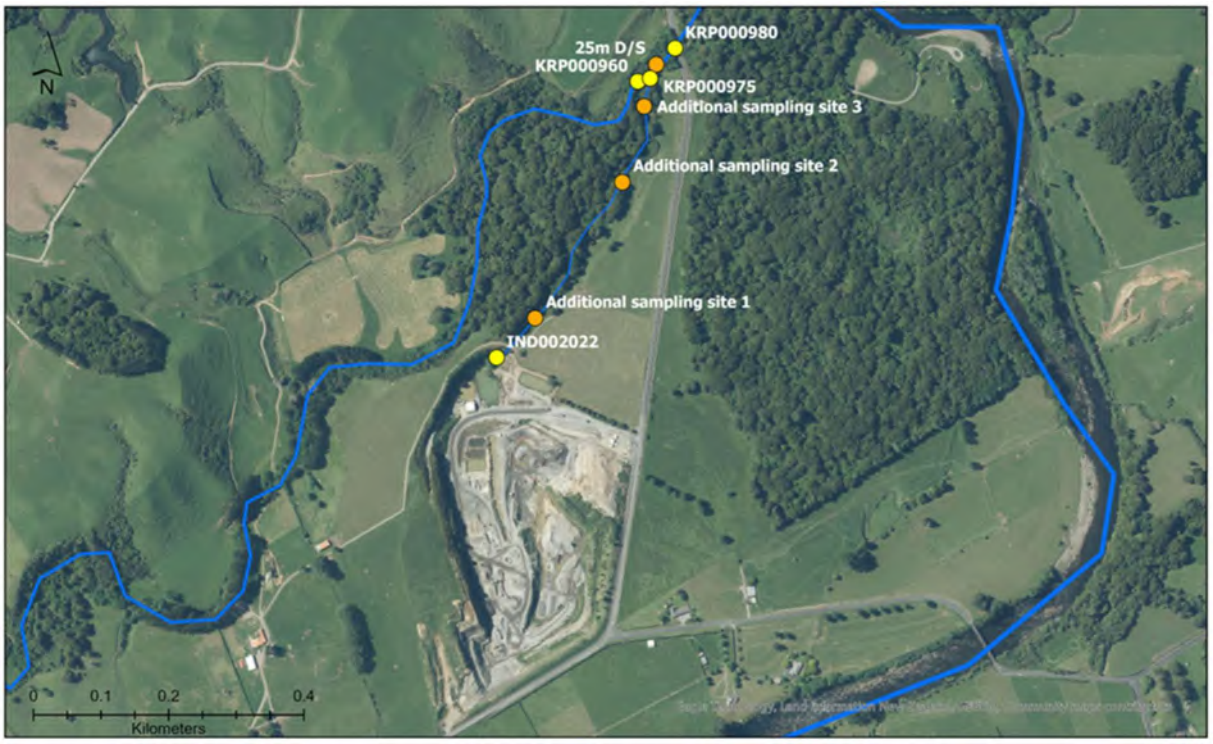

Figure 1 Everett Road Quarry location and sampling sites within a wider catchment context

Note: The unnamed tributary into which the water from quarry's sediment ponds discharges flows into the Kurapete Stream to the left of the map. Further downstream, this joins the Manganui River which flows through the Everett Park Reserve. The Additional sampling sites are labelled in orange. These sites were added during the monitoring year under review to ascertain if the deposited sediment in the unnamed tributary may be a contributing factor to the downstream turbidity non-compliances.

Photo 1 Excavation pit west of Pond A

Note: This contains an accumulation of groundwater which is pumped to pond A and then to the remainder of the treatment ponds prior to discharging to the unnamed tributary of the Kuarapete Stream. During high rainfall, the emergency pump is activated and groundwater with an accumulation of stormwater bypasses Ponds A to C and is pumped directly to Pond D, April 2024

Photo 2 Stormwater Pond A (central long, thin pond) with the former wash water ponds A1 to A3 to the right April 2024

Photo 3 Stormwater Ponds B & C, April 2024

Photo 4 Pond D, the first of the gravity fed stormwater ponds, April 2024

Photo 5 Pond E, the second of the gravity fed stormwater ponds, April 2024

Photo 6 Final Pond F before the water flows through a culvert and into the unnamed tributary of the Kurapete Stream, April 2024

1.3 Resource consents

The Company holds two resource consents, the details of which are summarised in Table 1. 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 in Appendix II, 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 2023/24 monitoring period

Consent number	Purpose	Granted	Review	Expires
Water abstraction permits				
10247-1.1	To take groundwater incidental to quarry operations and for aggregate washing purposes	11 Jun 2019	Jun 2026	1 Jun 2033
Water discharge permits				
1113-5.1	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	11 Jun 2019	Jun 2026	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 Council's monitoring programme for the Everett Road Quarry site consisted of four primary components. An independent monitoring programme was commissioned by The Company to fulfil the requirements of Condition 6 of Consent R2/10247-1.1.

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 and office assessment

The Everett Road site was visited six times during the monitoring period under review. This included four routine compliance monitoring inspections, one investigation of alternate sources of sediment in the unnamed tributary and one site visit which involved the consent holder, an Environmental consultant and Council officers. One instance of advice and information was noted.

The main focus of the site visit centred on the consents for the abstraction of or discharge to water, plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. The location of flowmeters measuring the amount of groundwater abstracted and the rate at which water is discharged from the quarry was discussed as was the Council's surface water monitoring programme. As part of their consent conditions, Civil Quarries is required to commission independent groundwater monitoring. The site meeting involved discussion around correcting data obtained for the 2022/23 monitoring year and the provision of data for the 2023/24 monitoring year.

Data obtained from onsite flowmeters is telemetered to the Council for the purposes of monitoring compliance in relation to consented abstraction and discharge rates.

1.4.4 Chemical sampling

The Council conducted sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone (Table 2).

Table 2 Locations and details of sampling sites

Site	Location	GPS coordinates	Site code
Quarry stormwater	At discharge outlet	1710431E 5668301N	IND002022
Kurapete Stream	100m upstream of Everett Road bridge (upstream of quarry tributary)	1710640E 5668709N	KRP000960
Unnamed tributary	5m upstream of the Kurapete Stream confluence (600m downstream of discharges at quarry)	1710658E 5668713N	KRP000975
Kurapete Stream	25m downstream of the confluence between the unnamed tributary and the Kurapete Stream	1710695E 5668758N	25m downstream
Additional site 1	Downstream of discharge point	1710488E 566359N	-
Additional site 2	Downstream of Additional site 1	1710617E 5668560N	-
Additional site 3	Downstream of Additional site 2 and upstream of KPR000975	1710649E 5668672N	-

The stormwater discharge was sampled on four occasions; the samples were analysed for electrical conductivity, pH, total hydrocarbons and total suspended solids. The unnamed tributary of the Kurapete Stream and the Kurapete Stream were sampled on four occasions. Samples were analysed for electrical conductivity, pH, total hydrocarbons, total suspended solids and turbidity. The three additional sites were sampled on two occasions. Samples were tested for total suspended solids and turbidity. The results of the physico-chemical analyses are presented in Table 5 to Table 11.

1.4.5 Biomonitoring surveys

The Council collected streambed macroinvertebrates on the 15 March 2024 from three established sites in the Kurapete Stream (Table 3 and Figure 2). The sampling was conducted to ascertain if the discharges originating from the quarry have had a detrimental effect upon the macroinvertebrate communities of the stream during the 2023/24 monitoring year. Macroinvertebrates were identified and the number of different types of taxa counted (taxa richness); MCI and SQMCI scores were calculated for each site.

The MCI is a measure of the overall sensitivity of the macroinvertebrate community to the effects of nutrient pollution in streams. It is based on the presence or absence of pollution-sensitive taxa. More sensitive macroinvertebrate communities occupy less polluted waterways. The SQMCI considers taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. Significant differences in either the MCI or the SQMCI between sites indicate the degree of adverse effects (if any) of the discharges being monitored and enable the overall health of the macroinvertebrate communities to be determined. Sensitivity scores for certain taxa have been modified to reflect conditions specific to the Taranaki region.

Table 3 Coordinates of biomonitoring sites in the Kurapete Stream sampled in relation to Civil Quarries Limited – Everett Road

Site No	Site code	Grid reference	Location
1	KRP000960	E1710640 N5668709	Upstream of quarry tributary stream
2	KRP000980	E1710695 N5668758	Everett Road bridge, d/s of tributary stream
3	KRP000983	E1710759 N5668874	150m d/s of Everett Road bridge

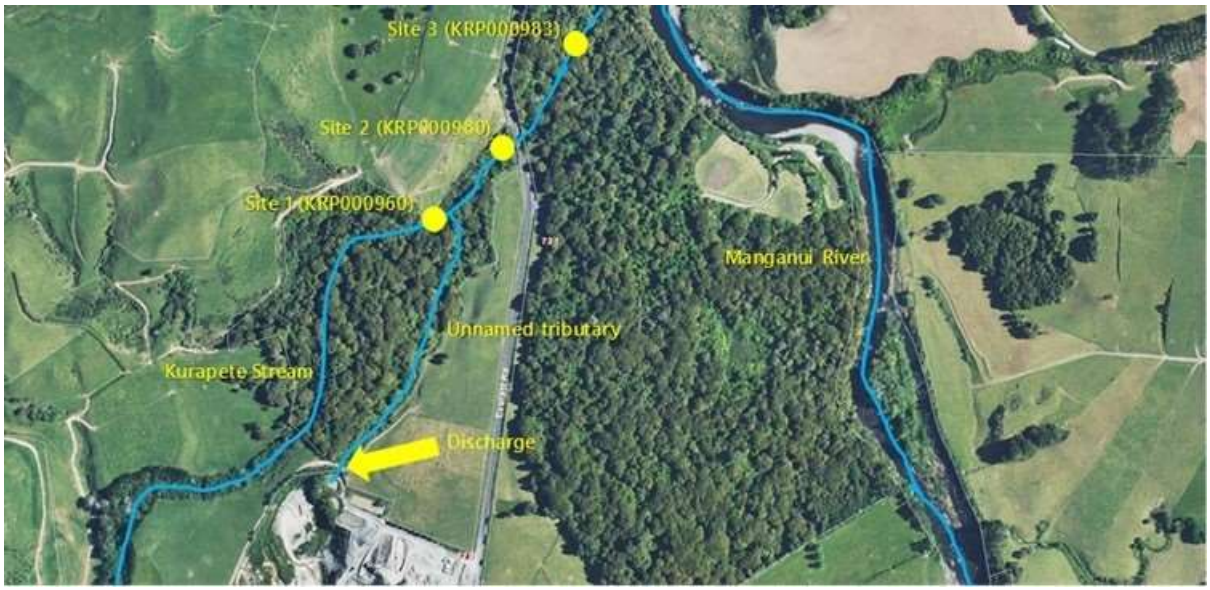

Figure 2 Sampled biomonitoring sites in the Kurapete Stream, 15 March 2024, Civil Quarries Limited – Everett Road

1.4.6 Independent ground and surface water monitoring

An independent monitoring programme which addresses condition 6 of Resource Consent 10247-1.1 was established by the Company to provide a more robust assessment of potential environmental effects of abstraction upon the groundwater level and quality of the surrounding aquifer. This involved drilling three bores (GND 3096, GND 3097 and GND 3098) at agreed locations around the quarry site (Table 4 and Figure 3). Rainfall data from the Manganui at Everett Park site is considered alongside water level data to help distinguish a climatic response from one that was induced by quarrying activities. Ultimately, the data will provide the foundation to identify long-term trends, to assess the effects of the quarry on ground and surface water at discrete times and to determine appropriate forms of mitigation (Browne, 2019). Annual low flow monitoring is also conducted at four sites related to the Kurapete Stream (Figure 3). Although not required by their consent conditions, the Company undertakes independent surface water monitoring in addition to the sampling which is conducted by the Council as part of the compliance monitoring programme.

Table 4 Key features of groundwater monitoring bores GND3096, GND3097 & GND3098

Well ID	Well depth (m)	Screen depths (mbgl)	mE	mN	mASL	Static water level (mrgl)	Drill Date
GND3096	69	52-62	1710620	5668180	106.626	8.84	21/09/20
GND3097	63	31-37 55-61	1710195	5668015	115.654	11.98	02/10/20
GND3098	112	39-45 69-81	1710633	5667920	115.187	3m dropped to 15m	09/10/20
NB GND3096 & GND3098 contain volumes of gas. GND3098 required a 10m concrete plug to facilitate its construction							

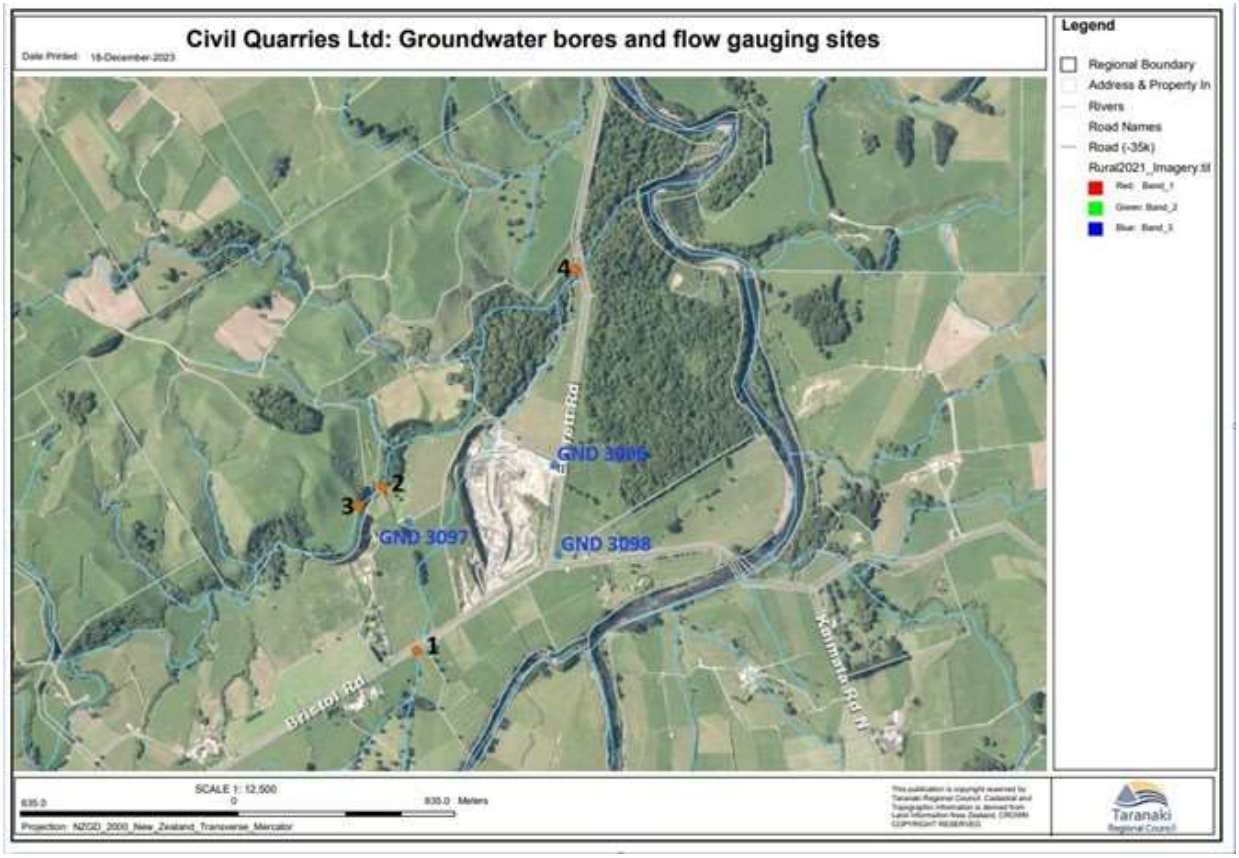

Figure 3 Civil Quarries independent groundwater monitoring (blue) and flow gauging sites (orange)

2. Results

2.1 Water

2.1.1 Inspections

1 September 2023 (scheduled inspection & sampling)

The inspection occurred during fine weather and no rain was noted in the preceding 48 hours. The site was contoured and bunded to direct stormwater to appropriate ponds for treatment. The inspecting officer noted that the flowmeter adjacent to pond C was recording a rate of approximately 20L/s. The consent holder indicated that the Company was in a transitional period with various personnel changes having recently occurred to ensure the site would be optimally managed according to compliance requirements. Surface water samples were collected from the designated sampling points. The results were returned and demonstrated that in relation to downstream turbidity limits, the site was non-compliant with consent conditions.

17 January 2024 (scheduled inspection & sampling)

The inspecting officers were met onsite by the site manager. The (New Plymouth District Council) NPDC stormwater drain which originates at Bristol Road was inspected and was observed to be oriented to discharge at the same location as Pond F. The drain bypasses the sediment retention ponds as it is piped beneath Pond D. The drain itself appeared dry, however a slight trickle of water was noted at the discharge outlet. The ponds appeared turbid and were noted to be discharging at the time of inspection. The discharge from Pond F visually appeared to be clear. Activity was occurring in the south-southwestern corner of the quarry site. A new road had been recently constructed to allow access to the corner quarry face. Future plans may entail deepening of the main excavation pit to access aggregate, or quarrying of the raised ridge which runs parallel to Pond A. The issue of groundwater influx in response to deepening of the main excavation pit was discussed. The site manager indicated that the capacity to treat the groundwater could be augmented by the construction of additional ponds within the main excavation pit, or by utilising the existing sand wash ponds if the need arose in the future. The sand wash ponds currently appeared disused. Activity at the site had increased in response to increased aggregate demand since the change in ownership. The site was bunded and no stormwater runoff was observed. The flow meter at Pond C was operating at the time of inspection and the readings complied with the consent conditions. The emergency water take meter was not in operation at the time of inspection. A desk assessment showed a marked improvement in compliance with respect to water take. Discussions between the Company and the Council regarding the location of the flowmeters and capture of required data were ongoing. A visual inspection showed no evidence that the clarity of the receiving waters was being influenced by the quarry discharge. Routine water sampling was undertaken at the four designated sampling sites. The laboratory analysis results showed that the site was non-compliant with respect to turbidity consent conditions. However, given that the Company and the Council were investigating the potential influence of the mobilisation of deposited sediment in the unnamed tributary upon the results, no enforcement action was considered.

As per the recommendations in the BTW Independent monitoring report, two additional sampling locations were identified along this tributary in preparation for a future meeting between the Council, BTW and the quarry owner. Turbidity readings were obtained at various locations along the unnamed tributary of the Kurapete Stream using a YSI Pro DSS 1 field meter. Readings showed that apart from the discharge point which recorded the highest turbidity (4.5 FNU), the turbidity did appear to increase from the additional sampling location closest to the discharge point and down to the confluence with the Kurapete Stream.

8 April 2024 (Scheduled inspection & sampling)

Multiple personnel were onsite and the screening plant was operating. The water level in Pond A was low and a hydrocarbon sheen was noted at the edge of the pond close to the abstraction pipe. Bunding was observed along the western length of pond A, a small section had been removed to allow stormwater to discharge into the pond. The emergency abstraction flowmeter was not operating. The main excavation pit contained an accumulation of groundwater. No hydrocarbon sheen was noted at this location. The area surrounding the new excavation face was inspected and did not contain groundwater. The bunds running adjacent to the ring drain appeared to be sound and the site was contoured. The water level in Ponds B and C was low. The consent holder had mentioned at the 8 March 2024 site meeting that there were issues with the telemetry for the flowmeter adjacent to Pond C which they would rectify. This had not yet been actioned. Pond C was discharging into Pond D. Pond D and the remainder of the gravity fed ponds were all discharging into the successive ponds. Samples were collected from the designated sampling points at the discharge and at upstream and downstream sites. Three water samples were also obtained from three additional sampling sites to ascertain whether or not sediment is actively entrained in the tributary prior to discharging into the Kurapete Stream. The water quality visually appeared compliant with consent conditions at the sampling locations. Laboratory results were returned and revealed a non-compliance with respect to downstream turbidity limits.

10 June 2024 (Scheduled inspection & sampling)

The inspection occurred during light rain; there had been heavy rain during the days preceding. The site was contoured and bunded to direct stormwater to appropriate areas for treatment. The main excavation pit contained an accumulation of water. The inspecting officer noted that the emergency pump was active and pumping water directly to Pond D. However, the flowmeter attached to this line was not recording the abstraction rate. A second pump was located in the same excavation pit and was pumping water to Pond A. The flow meter on this line was also not operational and was not recording the abstraction rate. The gravity fed ponds were discharging into the unnamed tributary of the Kurapete Stream. The discharge was turbid in colour and created a visible plume as it entered the stream. Water samples were obtained at the four designated sampling points and three additional sampling points. Sample results demonstrated that the site was compliant with consent conditions at the time of inspection.

2.1.2 Additional monitoring activities

11 October 2023 (investigation of alternative sediment sources to the tributary)

The investigation occurred in response to the non-compliance during the 1 September 2023 inspection. The Council wished to ascertain if there were alternative sources of sediment which might influence the downstream turbidity results. The length of the tributary was inspected and was found to be fenced off to exclude stock and was well vegetated along its banks. The bed of the tributary contained accumulations of fine deposited sediment. A small plastic pipe was observed to be discharging directly into the tributary; this did not create a visible plume of sediment. It was unclear if this was discharge from a farm drain. A spring was located on the true right bank of the tributary however, the seepage was a very slow trickle over the bank. The Council officers did not identify alternative sediment sources to the tributary. Council officers noted an accumulation of a pinkish, filamentous substance which looked similar to sewage fungus. A sample was obtained and examined at the Council lab. A sub-sample was sent to Cawthron Institute for further analysis. Cawthron thought that the substance was likely to be sewage fungus however it could not be identified as DNA testing would be required. The substance was not present during the next monitoring inspection.

8 March 2024 (site meeting)

The site meeting involved the Company, an environmental consultant and Council officers. The independent groundwater monitoring report was discussed. The data discrepancies were being investigated by the consultant's hydrogeologist and the information was to be relayed to the Council as soon as practicable. The bores would be re-surveyed, data would be download from the loggers and a check performed on the software. Groundwater data would be supplied to the Council at six-monthly intervals.

The location of the flowmeters was raised as the Company was non-compliant in terms of their placement. This has been a long-standing issue and requires resolution. The Council requested a written explanation for the location of the flowmeters and options for their future placement to ensure compliance with consent conditions. Once supplied, the information would then be forwarded to the Compliance department for assessment. The placement of the flowmeters has necessitated the combination of data sets to produce a total abstraction rate for the site. The Council and the Company discussed the option to locate a flowmeter closer to the point of discharge at the gravity fed ponds.

With respect to the surface water monitoring programme, discussions revolved around the issue of historic deposited sediment in the tributary and its possible influence upon the frequent non-compliances with respect to consented turbidity limits. The Company stated that they did not wish to be penalised for poor management practice in the past. The Council resolved to engage in further investigations to determine if deposited sediment is a likely contributing factor to downstream turbidity exceedances. These investigations would occur prior to the submission of an application for a consent variation. Two possible additional sampling locations were agreed upon and a third would be identified.

16 April 2024 (Advice and information)

The Company was contacted via telephone as there had been no response to an email sent on Wednesday 10 April 2024 requesting an explanation for the fact that the flowmeter at Pond C was still not operating and to clarify that Pond C was the sole source of discharge into Pond D. The consent holder stated that telemetered discharge data had not been received by the Council since the 16 March 2024 as they were having issues with the telemetry. He also stated that a new battery was required. The consent holder mentioned that the individual who is usually approached to remedy issues with flowmeters was no longer employed and that he did not know who to contact. The Council forwarded contact details of a technician to the consent holder on the 16 April 2024. There was no acknowledgement or response in relation to the request for clarification around the ponds.

2.1.3 Results of abstraction and discharge monitoring

The Company supplies groundwater abstraction data via telemetry. This is derived from two sources, the first being from the flowmeter on the main abstraction line which feeds into Pond A and the second being from the flowmeter which records the emergency overpump contribution which feeds directly into Pond D. The Council has merged these two datasets to produce a combined abstraction rate for the site (Figure 4). There is currently no flowmeter which records the discharge at the location specified in condition 8 of Consent 1113-5.1.

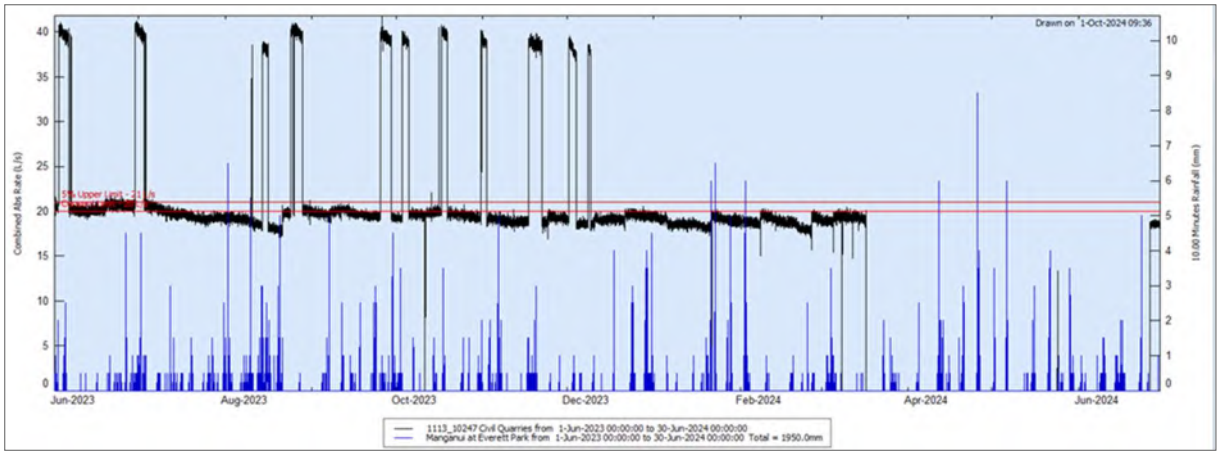

Figure 4 Combined abstraction rate plotted against rainfall at Everett Park. The red lines indicate the consented limit (20L/s and the 5% margin of error)

Figure 4 shows abstraction rates plotted against rainfall at Everett Park in 10 minute intervals during the monitoring period. The Company maintains that the exceedances above 20L/s represents the emergency overpump contribution (the emergency discharge) which is allowed for in Consent 1113-5.1. Special conditions 1 and 2 of Consent 1113-5.1 specify a 20L/s discharge rate unless there is heavy rainfall of a certain intensity and duration. The rainfall is shown in 10 minute intervals with a maximum of 10.7mm to align with "heavy rainfall" limits set in special condition 4 of Consent 1113-5.1. The discharge can exceed 20L/s during high rain events, but this is limited to initiation of no more than 15 hours after the event and a reduction to 20L/s must occur within 36 hours of the main rain event (Condition 2). It appears that the emergency overpump has been activated during lesser rainfall intensities than specified in the consent conditions.

2.1.4 Chemical sampling

Sampling locations are described in Table 2 and are indicated on the map in (Figure 1). Discharge and surface water results from the 2023/24 monitoring period are presented in Table 5 to Table 11. The range of historical results at each site are also presented for comparison.

Table 5 Stormwater discharge monitoring results (IND002002), 2023/24

Parameter	Unit	Consent limits	July 2000 to June 2024		1-Sep-23	17-Jan-24	8-Apr-24	10-Jun-24
			Min	Max	11:35	14:15	11:20	12:30
Electrical conductivity	mS/m	-	8.8	60.2	33.4	35.0	33.7	35.7
pH	pH	**6-9**	6.3	8.1	8.0	8.0	8.0	7.6
Suspended solids	g/m^3	**100**	4.0	650.0	<3	4	8	7
Total hydrocarbons	g/m^3	**15**	-	-	<0.7	<4	<4	<0.7

Table 6 Kurapete Stream monitoring results for the upstream site (KRP000960), 2023/24

Parameter	Unit	July 2000 to June 2023		1 Sep 2023	17 Jan 2024	08 Apr 2024	10 Jun 2024
		Min	Max	10:35	12:20	12:20	11.25
Electrical conductivity	mS/m	7.3	31.2	12.5	13.6	15.2	9.3
pH	pH	7.0	7.9	7.6	7.8	7.6	7.2
Suspended solids	g/m^3	2.0	650.0	<3	<3	<3	12
Turbidity	NTU	0.7	710.0	1.12(FNU)	0.88	0.87	10.0
Total hydrocarbons	g/m^3	-	-	<0.7	<0.7	<0.7	<0.7

Table 7 Monitoring results for the confluence of the Kurapete Stream and unnamed tributary (KRP000975), 2023/24

Parameter	Unit	July 2000 to June 2023		01 Sep 2023	17 Jan 2024	08 Apr 2024	10 Jun 2024
		Min	Max	10:30	12:30	12:10	11:20
Electrical conductivity	mS/m	11.1	48.8	31.0	33.2	33.2	33.8
pH	pH	6.8	7.9	8.0	7.6	7.9	7.4
Suspended solids	g/m^3	3	79	4	9	9	13
Turbidity	NTU	1.9	65	5.1 (FNU)	3.5	4.9	8.2
Total hydrocarbons	g/m^3	-	-	<0.7	<0.7	<0.7	<0.7

Table 8 Monitoring results for Additional Site 1, 2023/24

Parameter	Unit	8-Apr-24	10-Jun-24
		11:40	12:20
Total suspended solids	g/m^3	6	7
Turbidity	NTU	5.4	10.9

Table 9 Monitoring results for Additional Site 2, 2023/24

Parameter	Unit	8-Apr-24	10-Jun-24
		12:40	12:10
Total suspended solids	g/m^3	5	10
Turbidity	NTU	4.5	8.7

Table 10 Monitoring results for Additional Site 3 2023/24

Parameter	Unit	8-Apr-24	10-Jun-24
		12:50	11:35
Total suspended solids	g/m^3	9	8
Turbidity	NTU	5.8	9.0

Table 11 Kurapete Stream monitoring results for the downstream site (KRP000980/25m DS), 2023/24

Parameter	Unit	July 2000 to June 2023		01 Sep 2023 KRP000980	17 Jan 2024 KRP000980	17 Jan 2024 25m DS	08 Apr 2024 25m DS	10 Jun 2024 25m DS
		Min	Max	10:15	12:10	12:45	12:00	11:15
Electrical conductivity	mS/m	7.9	37.6	14.7	16.5	19.1	25.7	10.7
pH	pH	7	7.8	7.7	7.7	7.7	7.8	7.2
Suspended solids	g/m^3	2	170	<3	5	-	3	12
Turbidity	NTU	0.93	150	2.2 (FNU) (1.68)	2.4 (1.32)	2.0 (1.32)	3.1 (1.31)	10.8 (15.0)
Total hydrocarbons	g/m^3	-	-	<0.7	<0.7	-	<0.7	<0.7

Green = compliant results as they are within the allowable limit (brackets) based on KRP000960 results
Red = non-compliant results as they are not within the allowable limit (brackets) based on KRP000960 results

Condition 14 of Consent R2/1113-5.1 requires that the turbidity value for the downstream sample (KRP000980/25m D/S, Table 11) is no more than 50% greater than that of the upstream sample (KRP000960,Table 6). On three out of four occasions, monitoring results from the downstream sampling points were non-compliant with consent conditions at the time of sampling. The sample taken on the 10 June 2024 was compliant. The values for all other analytes were within consented limits. Note that to better align with consent conditions, downstream sampling at 25m occurred from 17 January 2024.

2.1.5 Biomonitoring survey

Results of the biomonitoring survey for the 2023/24 monitoring year are compared with those of the previous year in Table 12. Table 13 has been provided as a comparison of MCI and SQMCI values for Taranaki Streams.

Table 12 Numbers of macroinvertebrate taxa, MCI and SQMCI surveys of the Kurapete Stream in relation to the Civil Quarry Limited – Everett Road discharges (2022/23 & 2023/24 monitoring years)

Site	Number of taxa		MCI values		SQMCI values	
	2022/23 survey	2022/24 survey	2022/23 survey	2023/24 survey	2022/23 survey	2023/24 survey
1	19	22	104	104	5.2	5.4
2	18	22	103	101	4.8	5.1
3	20	26	103	94	5.4	4.5

Table 13 Macroinvertebrate community health based on MCI and SQMCI ranges

TRC Grading	MCI	SQMCI
Excellent	≥140	≥7.00
Very Good	120-139	6.00-6.99
Good	100-119	5.00-5.99
Fair	80-99	4.00-4.99
Poor	60-79	3.00-3.99
Very Poor	<60	<3.00

Note: This has been adapted for Taranaki streams and rivers from Stark's classification (Stark, 1985 and Stark, 1998)

Taxa richness was moderate with 22, 22 and 26 taxa present at sites 1, 2 and 3, respectively (Figure 5). Compared to the previous survey results, all sites recorded a taxa richness greater than that previously recorded. When comparing current results to the historical medians, taxa richness remained similar at all sites. Further, a total of eight, seven and eleven EPT taxa were recorded at sites 1 to 3, respectively, with EPT taxa comprising 36%, 32% and 42%, respectively.

MCI scores were 104, 101 and 94 units at sites 1, 2 and 3, respectively. These scores categorized sites 1 and 2 as having 'good' macroinvertebrate community health and site 3 as having 'fair' health. MCI scores showed a decline in a downstream direction. However, despite site 3 falling into a different MCI grading category than sites 1 and 2, there was no significant difference in MCI scores among the sampled sites. Compared to the previous survey, current MCI scores were consistent at sites 1 and 2. There was a decline of nine units at site 3 compared to the previous survey, but this was not significant. Compared to historical medians, current MCI scores were consistent at sites 2 and 3 but increased by a significant 11 units at site 1.

SQMCI scores were 5.4, 5.1 and 4.5 units at sites 1, 2 and 3, respectively, with a significant decline between sites 1 and 3. These scores were reflective of 'good' macroinvertebrate community health at sites 1 and 2 and 'fair' health at site 3. Compared to the previous survey, the current SQMCI score remained similar at sites 1 and 2 but decreased by significant 0.9 units at site 3. When compared to the historical medians, all sites recorded greater than their respective medians, significantly so at site 2 by 1.3 units.

Overall, the survey indicated that quarry discharges entering the stream from a small tributary draining the quarry area was not having a significant effect on the macroinvertebrate community immediately downstream of the quarry discharge.

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

Figure 5 Biomonitoring sites in the Kurapete Stream in relation to the quarry discharge with taxa number, MCI scores and SQMCI scores presented for each site

2.1.6 Independent Monitoring: assessment of the effects of groundwater abstraction

2.1.6.1 Results of low flow gauging

Summer flow gauging is conducted annually at four sites upstream and downstream of the quarry to ascertain possible effects of quarry dewatering upon summer low flows in the adjacent streams. The gauging sites included the Kurapete Stream and one of its unnamed tributaries (Figure 3). The Council's Manganui at Everett Park and Kurapete Stream sites served as reference points for low flows. At the time of report publication, the Council and the Company were engaged in discussion to identify an alternative downstream site to replace site 4 (Le Lievre, 2023). The results of the 2023/24 summer low flow gauging are presented in Table 14.

Table 14 Results of summer low flow gauging conducted on 27 March 2024

Site	Coordinates	Date	Time (NZST)	Results (LPS)
Site 1-2m US Bristol Rd culvert	1710221.86 E, 5667646.48 N	27/03/2024	12:47	6
Site 2-5m US confluence	1710119.14 E, 5668119.15 N	27/03/2024	10:25	4
Site 3-20m US farm access bridge	1710038.76 E, 5668059.14 N	27/03/2024	09:34	110
Site 4-US Everett Rd bridge	1710681.82 E, 5668750.45 N	27/03/2024	11:21	146

2.1.6.2 Groundwater level data

The independent monitoring report summarising the findings for the 2022/23 monitoring year was re-submitted to the Council in November 2024. The results are presented in this report. The report for the 2023/24 monitoring year had not yet been submitted to the Council before the Council's 2023/24 compliance monitoring report was written.

The groundwater level in the monitoring bores was recorded during the 2022/23 period to provide baseline data to assess the impact of the quarry's groundwater abstraction upon the underlying aquifer. Data was logged at 15 minute intervals and was downloaded and processed quarterly. The available water level data (mean sea level, Taranaki 1970 Datum) was plotted against rainfall data recorded at the Manganui Everett Park site (Figure 6).

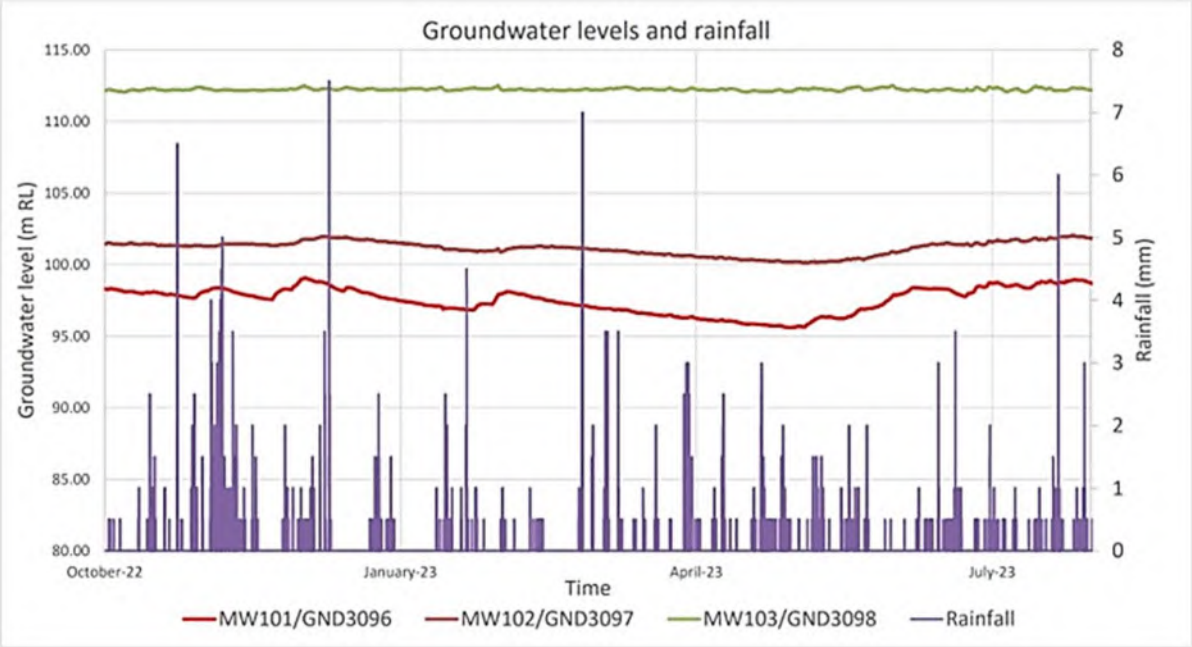

Figure 6 Graph showing relationship between groundwater level and rainfall.

GND3096

The water level fluctuated from approximately 96.68 to 99.22 in height mean sea level (msl) with an average of 97.60 meters above sea level (masl). The depths to water (DTW) ranged from 7.45 to 9.99 metres below ground level (mbgl) indicating the bore has hydrostatic pressure influencing the bore water levels. Based on one year of data, there appears to be no clear seasonal pattern in water level. A lag in the water level response to rainfall was apparent, with the lowest water levels recorded in early December and then again in May 2023. The highest water levels were recorded in March to April 2023 and October 2023.

GND3097

The water level ranged from approximately 100.25 to 101.55masl, with an average of 100.90msl, indicating there was a limited range of water level fluctuations in GND3097 compared to GND3096. The depths to water ranged from 14.11-15.41mbgl. No seasonal pattern is apparent. The lowest groundwater level was recorded during the same time period as GND3096 and the highest water levels were recorded in March-April 2023.

GND3098

The water level fluctuated from approximately 112.06 to 112.62masl with an average of 112.27masl indicating a very limited variation range in comparison with GND3097 and GND3096. The depths to water ranged from 2.51-3.06mbgl. Based upon one year of data, GND3098 appeared to respond more rapidly to rainfall and or a lack thereof compared to GND3096 and GND3097. However, the water level range over which it fluctuated was far smaller i.e., 500mm compared to 2600mm in GND3096.

2.1.6.3 Summary of the results of chemical sampling

Based on the four rounds of baseline water chemistry sampling, results suggest that GND3097and GND3098 have consistent water chemistry in comparison to GND3096. The concentrations and ranges of multiple parameters were in general agreement for GND3097 and GND3098, including electrical conductivity, total alkalinity, bicarbonate, hardness and several dissolved metals and salts. The results are presented in the independent monitoring report which is 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).

Whether compliant or not, the details of any incidents recorded and additional investigations or interventions conducted by the Council in relation to the Company's activities during the 2023/24 period are presented in Table 15.

Table 15 Incidents, Investigations and Interventions summary table

Date	Consent	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
11/10/2023	R2/1113-5.1	Repeated downstream turbidity non-compliances	N	N	Initial inspection on 11/10/2023 to determine alternative sediment sources along the unnamed tributary. On-going inspections and sampling found two further instances of non-compliance. of the subject of Abatement Notice EAC-24687 issued for a previous non-compliance. Infringement notice (EAC-25100) was issued to the Company for contravening Abatement Notice EAC-24687.
10/06/2024	R2/1113-5.1	No flow meter at the point of discharge	N	Yes – Abatement Notice	The Company was issued Abatement Notice EAC-25872 which directed them to comply with their resource consent conditions by 30 September 2024. The Company requested an extension of the deadline. This was granted and a re-inspection will occur after 30 November 2024.

3. Discussion

3.1 Discussion of site performance

The results of the physico-chemical analyses (Table 5 to Table 11) demonstrate that with respect to downstream turbidity, the site was non-compliant on three out of four routine monitoring inspections. The results for all other analytes were within their respective limits. The Company has been the subject of Abatement Notice EAC-24687 since 1 August 2022 (issued as a result of a previous non-compliance). As turbidity levels contravened the requirements of Abatement Notice EAC-24687 on 15 March 2023, the Company was also issued an Infringement Notice EAC-25100.

To satisfy condition 6 of Consent 10247-1.1, the Company engaged the services of an environmental consultant to conduct an independent groundwater monitoring programme. The findings of this programme are reported to the Council annually. The 2022/23 independent monitoring report submitted by the Company describes the baseline trends in groundwater levels as recorded in three monitoring bores. A comparison was made between the bore water levels and rainfall. Overall, there were no notable seasonal fluctuations, but a lag response to precipitation was most evident in GND3096. Chemical analysis of the constituents of the groundwater revealed good agreement between GND3097and GND3098 which have similar subsurface lithology and are screened across two geological units. Similar parameters included electrical conductivity, total alkalinity, bicarbonate, hardness and several dissolved metals and salts. GND3096 is screened only in the upper geological unit which may explain its groundwater chemistry. Given the limited dataset, no conclusions could be drawn regarding the influence of groundwater abstraction on the underlying aquifer. The 2023/24 monitoring report is yet to be submitted to the Council. The results of this monitoring will be used to extend the groundwater level dataset. Longer term trends will be used to determine whether the quarry activities are having an adverse effect on the underlying aquifer.

While not required by consent conditions, the Company also undertakes independent surface water sampling in tandem with the groundwater monitoring programme. The 2022/23 monitoring report supplied by the Company discussed the possible contribution of historic deposited sediment in the unnamed tributary of the Kurapete Stream to the repeated downstream turbidity non-compliances (Le Lievre, 2023). This issue was attributed to past poor management practice and the Company indicated that they do not wish to be penalised for this. During the 2023/24 monitoring year, the Council commenced further investigations to ascertain sediment entrainment trends along the unnamed tributary. This involved sampling three additional sites (Figure 1) The Council will continue to undertake this sampling during the 2024/25 monitoring year subject to agreement with the Company. Following this, the results will be assessed in conjunction with a report provided by the Company which describes their stance with respect to the deposited sediment.

The location of the flowmeters has been the subject of discussion during the 2023/24 monitoring year. Following the 10 June 2024 inspection, the Company received an abatement notice directing them to install a flowmeter at the point of discharge as per condition 8 of Consent 1113-5.1. The Council considers that the two active flowmeters (main take and emergency overpump) record the combined groundwater abstraction rate from the main excavation pit. There is no flowmeter that records discharge from the site, therefore the actual discharge rate is unknown. The Company maintains that their emergency overpump represents their emergency discharge allowance described in condition 2 of Consent 1113-5.1. This pump is activated to alleviate flooding of the main excavation pit during heavy rainfall. The merged dataset from the two flowmeters demonstrates that there are significant abstraction exceedances when the overpump is activated. The Council is working with the Company to ensure compliance with consent conditions.

Figure 4 reveals a hiatus in the provision of telemetered data from 16 March 2024 to 26 June 2024. Following the April 2024 inspection, the Council requested an explanation for this. The Company explained

that the individual who used to service the flowmeters had left and they were not aware of whom to approach for assistance. At the June 2024 inspection, the flowmeters were still not operating as new batteries were required. The Council reiterated the requirement that data is telemetered to remain compliant with consent conditions at all times. The issue was resolved before the end of June 2024 and the Council did not pursue enforcement action.

Results of the biomonitoring assessment demonstrate that the macroinvertebrate community health indices between site 1 (the upstream site) and site 2 (the first downstream site of the quarry discharge point) were fairly similar. For this reason, it was inferred that the discharges from Civil Quarries Limited – Everett Road did not have a significant adverse impact on the macroinvertebrate community health in the Kurapete Stream.

3.2 Environmental effects of exercise of consents

One of the main potential environmental effects of quarrying activities upon waterways is associated with discharges of stormwater with high suspended sediment yields. Such discharges can discolour the receiving waters, smother benthic life forms, form barriers to fish passage and 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 (Sutherland, 2019). 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.

The MCI and SQMCI indexes are indicators of organic pollution but are also usually correlated with deposited sediment so that sites with high levels of silt tend to have lower MCI and SQMCI scores. This makes them useful for determining impacts of discharges that contain predominately fine sediment such as quarry discharges. However, macroinvertebrate sampling occurs in riffles which have high flow velocities compared with runs and pools and are therefore far less likely to accumulate deposited sediment. Over the 2023/24 monitoring period, there were three instances during which the downstream turbidity levels exceeded their consented limits (Table 11). Since the macroinvertebrate community health indices between site 1 (the upstream site) and site 2 (the first downstream site of the quarry discharge point) were fairly similar, it was concluded that the discharges from Civil Quarries Limited – Everett Road did not have a significant adverse impact on the macroinvertebrate community health in the Kurapete Stream.

Excavation to depth means that the water table is frequently encountered. Consequently, a consent to abstract groundwater incidental to quarry operations is often a necessary operational requirement. Dewatering has the potential to adversely affect the water level in the underlying aquifer. To satisfy the conditions of Consent 10247-1.1, the Company has installed three monitoring bores in the vicinity of the site. The baseline results for the 2022/23 monitoring year have been included in this report. As the length of the dataset is short, no conclusions can be drawn about the effects of groundwater abstraction on the underlying aquifer.

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 16 to Table 19.

Table 16 Civil Quarries Ltd summary of performance for Consent 1113-5.1

Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream		
Condition requirement	**Means of monitoring during period under review/action points**	**Compliance achieved?**
1. Maximum discharge rate to not exceed 20L/s	No flowmeter recording discharge	Unknown

Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream		
Condition requirement	**Means of monitoring during period under review/action points**	**Compliance achieved?**
2. Exception of exceedance of Condition 1 due to 'heavy rain'	Inspections and supply of water meter data. No flowmeter recording discharge	Unknown
3. Provision of stormwater management plan by 1 August 2019	Plan accepted by Council. Updated December 2023	Yes
4. No wash water to enter stormwater unless due to 'heavy rain'	Inspections of stormwater and wash water treatment systems	Yes
5. Location of discharge point	Inspections of treatment system and discharge point	Yes
6. Company to adopt best practicable option	Inspections. No flowmeter installed at point of discharge	No.
7. Limits quarry catchment area	Desk assessment	Yes
8. Company to install and maintain water meter and data logger on discharge	Inspections	No
9. Specifications on discharge records	No flowmeter recording discharge	No
10. Measuring and recording equipment to be accessible for data retrieval	Inspection. No flowmeter recording discharge	No
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 – Exceedance of turbidity limits on three occasions	No
15. Contingency plan maintained	Plan received – Requires updating	Yes
16. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards. Next review June 2026	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		**Improvement required** **Good**

N/A = not applicable

Table 17 Evaluation of environmental performance for Consent 1113-5.1

Year	Consent numbers	High	Good	Improvement req	Poor
2019-2020	1113-5.1	-	-	x	-
2020-2021	1113-5.1	-	-	x	-
2021-2022	1113-5.1	-	-	x	-
2022-2023	1113-5.1	-	-	x	-
2023-2024	1113-5.1	-	-	x	

Table 18 Civil Quarries Ltd summary of performance for Consent 10247-1.1

Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Abstraction rate shall not exceed 20L/s	Inspections and data review. Multiple exceedances during the monitoring period under review (Figure 4)	No

Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
2. Installation and maintenance of water meter and datalogger at water take	Inspections	Yes
3. Abstraction data formatting and supply requirements	Abstraction data review. Data was not telemetered from 16 March 2024 to 26 June 2024	No
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 – flowmeters were not working	Yes
6. Company to undertake groundwater monitoring programme	Monitoring programme has been initiated and data has been received from the Company's Environmental consultant	Yes
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
9. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards. Next review June 2026	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		**Improvement required** **Good**

N/A = not applicable

Table 19 Evaluation of environmental performance over time for Consent 10247-1.1

Year	Consent numbers	High	Good	Improvement req	Poor
2019-2020	10247-1.1	-	-	x	-
2020-2021	10247-1.1	-	-	x	-
2021-2022	10247-1.1	-	-	x	-
2022-2023	10247-1.1	-	-	x	-
2023-2024	10247-1.1	-	-	x	x

During the year, the Company demonstrated a good level of administrative performance and a level of environmental performance that required improvement with respect to their two resource consents, as defined in Appendix II.

Issues for Consent 1113-5.1 centred around the fact that no flowmeter was installed at the point of discharge, therefore the rate of discharge from the site was unknown and no records were provided to the Council. An abatement notice was issued directing the Company to rectify this. The downstream turbidity limit was also exceeded on three out of four sampling occasions. The Council is continuing to investigate the potential that deposited sediment in the unnamed tributary of the Kurapete Stream may be contributing to the non-compliances.

With respect to Consent 10247-1.1, the take rate for the site is exceeded when the Company activates the overpump during heavy rainfall. This occurred on numerous occasions during the year under review. Data was not telemetered to the Council from 16 March 2024 to 26 June 2024. This lowered the administrative performance rating for Consent 10247-1.1.

3.4 Recommendations from the 2022/23 Annual Report

In the 2022/23 Annual Report, it was recommended:

1. THAT in the first instance, the monitoring of consented activities at Everett Road quarry in the 2023/24 year continue at the same level as in 2022/23.
2. THAT should there be ongoing issues with environmental or administrative performance in 2023/24, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT the location of the discharge and abstraction flow meters is resolved in the 2023/24 monitoring year
4. THAT the flow rates from the discharge and groundwater take pumps continue to be closely monitored to ensure compliance with resource consents
5. THAT the independent Environmental Monitoring Programme commissioned by the Company be carried out in full and continued as agreed
6. THAT the points raised in the independent monitoring report which related to the Council's surface water monitoring programme be addressed as soon as is practicable
7. THAT should any significant adverse environmental effects arise as a result of quarry operations, the option for a review of resource consent(s) in June 2024, as set out in Condition 16 of Consent 1113-5.1 and Condition 9 of Consent 10247-1.1 be considered

Recommendations 2, 4, 5 and 6 were implemented. Recommendation 3 is yet to be implemented. Recommendations 1 and 7 were not required.

3.5 Alterations to monitoring programmes for 2024/25

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.

There are no planned changes for the 2024/25 monitoring programme.

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 the 2024/25 monitoring year.

3.6 Exercise of optional review of consent

Resource Consents 10247-1.1 and 1113-5.1 provided for an annual optional review until June 2024. Thereafter, the optional review may be exercised by the Council at two-yearly intervals, with the next review being June 2026. Conditions 9 and 16 respectively allow the Council to review the consents 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 consents, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review and in previous years as set out in earlier annual compliance monitoring reports, there were no grounds to warrant a review in June 2024.

4. Recommendations

1. THAT in the first instance, the monitoring of consented activities at Everett Road quarry in the 2024/25 year continue at the same level as in 2023/24.
2. THAT should there be ongoing issues with environmental or administrative performance in 2024/25, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT the location of the discharge and abstraction flow meters is resolved in the 2024/25 monitoring year.
4. THAT the flow rates from the discharge and groundwater take pumps continue to be closely monitored to ensure compliance with resource consents.
5. THAT the independent Environmental Monitoring Programme commissioned by the Company be carried out in full and continued as agreed.

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^2	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.
mm	Millimetre.
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	*Resource Management Act 1991* 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 manager within the Environment Quality Department.

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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)

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:	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.

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 ± 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.

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}

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.

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

_____

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 ± 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 ± 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.

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

_____

A D McLay
Director - Resource Management

Appendix II

Categories used to evaluate environmental and administrative performance

Categories used to evaluate environmental and administrative performance

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

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

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

Environmental Performance

High: No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving 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 party. 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.

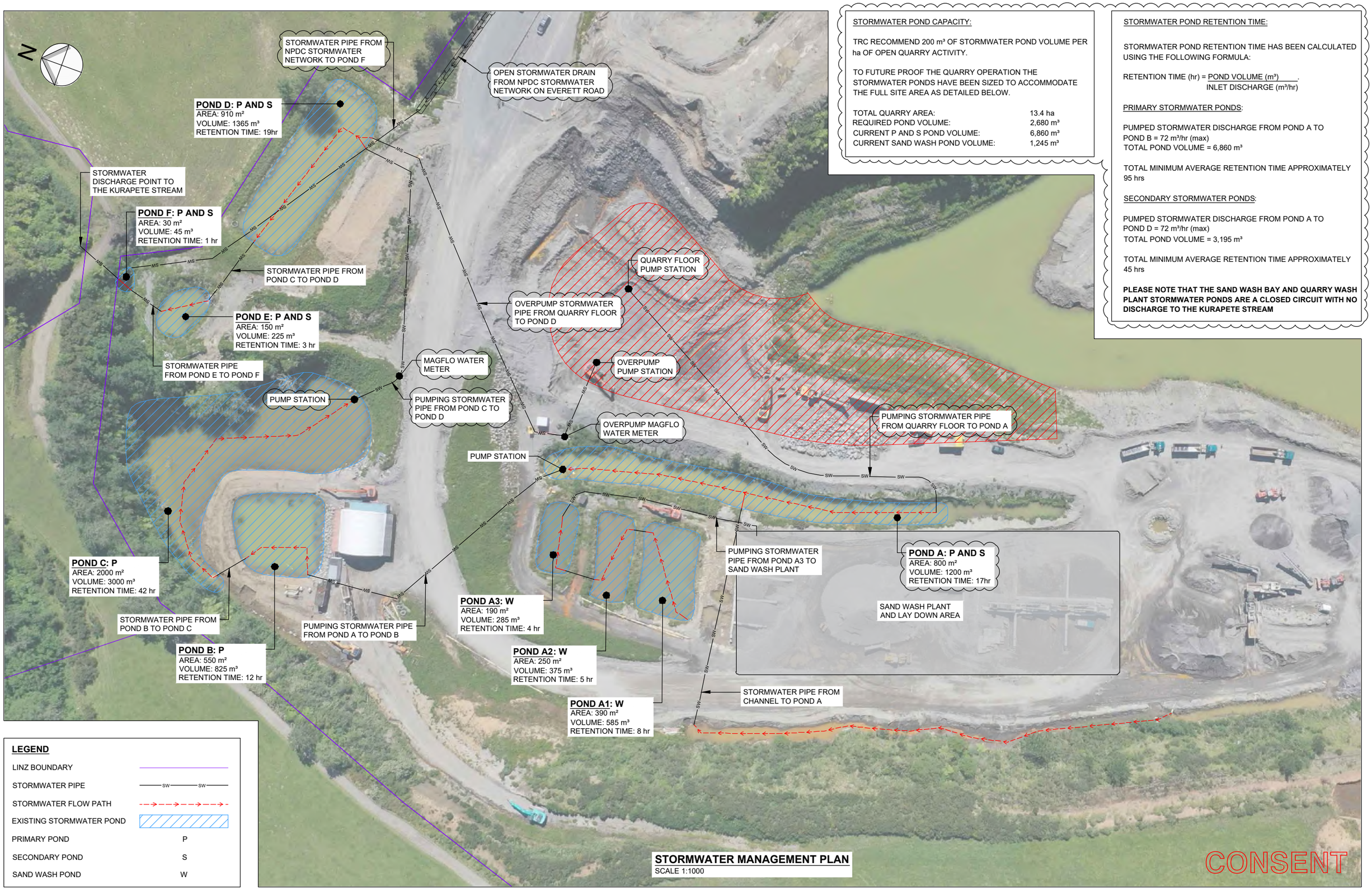
Good: Perhaps some administrative requirements of the resource consents were not met at a particular time however, this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation 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.

Appendix III

Map of stormwater and washwater treatment system December 2020



STORMWATER POND CAPACITY:

TRC RECOMMEND 200 m³ OF STORMWATER POND VOLUME PER ha OF OPEN QUARRY ACTIVITY.

TO FUTURE PROOF THE QUARRY OPERATION THE STORMWATER PONDS HAVE BEEN SIZED TO ACCOMMODATE THE FULL SITE AREA AS DETAILED BELOW.

TOTAL QUARRY AREA:	13.4 ha
REQUIRED POND VOLUME:	2,680 m³
CURRENT P AND S POND VOLUME:	6,860 m³
CURRENT SAND WASH POND VOLUME:	1,245 m³

STORMWATER POND RETENTION TIME:

STORMWATER POND RETENTION TIME HAS BEEN CALCULATED USING THE FOLLOWING FORMULA:

$$\text{RETENTION TIME (hr)} = \frac{\text{POND VOLUME (m}^3\text{)}}{\text{INLET DISCHARGE (m}^3\text{/hr)}}$$

PRIMARY STORMWATER PONDS:

PUMPED STORMWATER DISCHARGE FROM POND A TO POND B = 72 m³/hr (max)
TOTAL POND VOLUME = 6,860 m³

TOTAL MINIMUM AVERAGE RETENTION TIME APPROXIMATELY 95 hrs

SECONDARY STORMWATER PONDS:

PUMPED STORMWATER DISCHARGE FROM POND A TO POND D = 72 m³/hr (max)
TOTAL POND VOLUME = 3,195 m³

TOTAL MINIMUM AVERAGE RETENTION TIME APPROXIMATELY 45 hrs

PLEASE NOTE THAT THE SAND WASH BAY AND QUARRY WASH PLANT STORMWATER PONDS ARE A CLOSED CIRCUIT WITH NO DISCHARGE TO THE KURAPETE STREAM

LEGEND

LINZ BOUNDARY	
STORMWATER PIPE	SW
STORMWATER FLOW PATH	
EXISTING STORMWATER POND	
PRIMARY POND	P
SECONDARY POND	S
SAND WASH POND	W

STORMWATER MANAGEMENT PLAN
SCALE 1:1000

CONSENT

REDJACKET
3 DAVIDSON STREET
NEW PLYMOUTH 4310
Ph. 06 759 0999

DATE	REV	REV RECORD	BY	CHD	VER	APP
05.12.23	B	ISSUED FOR CONSENT	MM	LB	-	CM

Client: TARANAKI CIVIL CONSTRUCTION LIMITED

Project: STORMWATER MANAGEMENT EVERETT ROAD QUARRY INGLEWOOD

Sheet Title: STORMWATER MANAGEMENT PLAN

Drawing No.: 100-441
Job No.: 4147
Sheet No.: C1-1
A3
REV. B

File Name: Z:\JOBS\h 4001-4500\4101-4150\4147 Everett Road Quarry - Stormwater Report\Drawing\100-441 RevB.dwg - C1-1 Plot Date: 05/12/2023 Plot Time: 15:52