Oaonui Water Supply Ltd

Monitoring Programme

Annual Report

2022-2023

Technical Report 2023-76

Working with people | caring for Taranaki

Taranaki Regional Council

Taranaki Regional Council
Private Bag 713
Stratford

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Executive summary

The Oaonui Water Supply Ltd (OWSL) operates a rural water supply scheme located on Arawhata Road at Oaonui, in the Oaonui catchment. Water is abstracted from the stream via a gravity fed intake situated behind a large weir. The water flows via a settling pond to a small treatment shed where it is chlorinated before being distributed to rural customers. At least once per day, the intakes are sluiced to clear accumulated sediment.

This report for the period July 2022 to June 2023 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 OWSL's activities.

During the monitoring period, OWSL demonstrated a good level of environmental performance and high level of administrative performance.

OWSL holds one resource consent to take and use water from the Oaonui Stream, one consent to discharge water and contaminants into the stream from weir sluicing, and one consent to use and maintain a weir and intake structure. These consents include a total of 27conditions setting out the requirements that OWSL must satisfy.

The Council's monitoring programme for the year under review included one inspection, a review of water abstraction data and water level monitoring data, one water sample collected for physicochemical analysis, two biomonitoring surveys of receiving waters and various stream gaugings.

The monitoring indicated that the operation of the sluicing of the weir has improved, with flows not falling below 151 L/s. There was one unauthorised incident recording non-compliance in respect to the water take consent between 30 July and 5 August 2022. Due to a lightning strike which destroyed the scheme's electronics, OWSL were required to take water in manual operation mode, which resulted in a breach of abstraction rate until OWSL could fine-tune the process. The effects of this increased abstraction would have been no more than minor due to the high stream flows at the time the breaches occurred. OWSL took every step to try and avoid breaching their consent conditions and were in constant contact with the Council during this time. The incident was closed shortly after, as OWSL had their system fully operational again in a prompt manner.

For reference, in the 2022-2023 year, consent holders were found to achieve a high level of environmental performance and compliance for 878 (87%) of a total of 1007 consents monitored through the Taranaki tailored monitoring programmes, while for another 96 (10%) of the consents a good level of environmental performance and compliance was achieved. A further 27 (3%) of consents monitored required improvement in their performance, while the remaining one (<1%) achieved a rating of poor.

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 improved in the year under review.

This report includes recommendations for the 2023-2024 year.

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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 2022 to June 2023 by the Council describing the monitoring programme associated with resource consents held by Oaonui Water Supply Ltd (OWSL). OWSL operates a rural water supply scheme situated on Arawhata Road, Oaonui.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by OWSL that relate to abstractions and discharges of water in the Oaonui catchment. This is the seventh annual report to be prepared by the Council to cover the OWSL's water abstraction, discharges, structures and their effects. Previously the OWSL compliance monitoring was reported in the joint South Taranaki Water Supplies report.

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/companies in the Oaonui 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 2022-2023 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 2022-2023 year, consent holders were found to achieve a high level of environmental performance and compliance for 878 (87%) of a total of 1007 consents monitored through the Taranaki tailored monitoring programmes, while for another 96 (10%) of the consents a good level of environmental performance and compliance was achieved. A further 27 (3%) of consents monitored required improvement in their performance, while the remaining one (<1%) achieved a rating of poor. [1]

1.2 Process description

Water is abstracted from the Oaonui Stream via a gravity fed intake situated behind a large weir. The water then flows via a settling pond to a small treatment shed where chlorine is added prior to being distributed to rural customers (Figure 1). Water is also supplied for fire-fighting purposes and testing of bunds and tanks at the Maui Production Station. Once a day the intakes are sluiced to clear accumulated silt.

[1] The Council has used these compliance grading criteria for more than 19 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

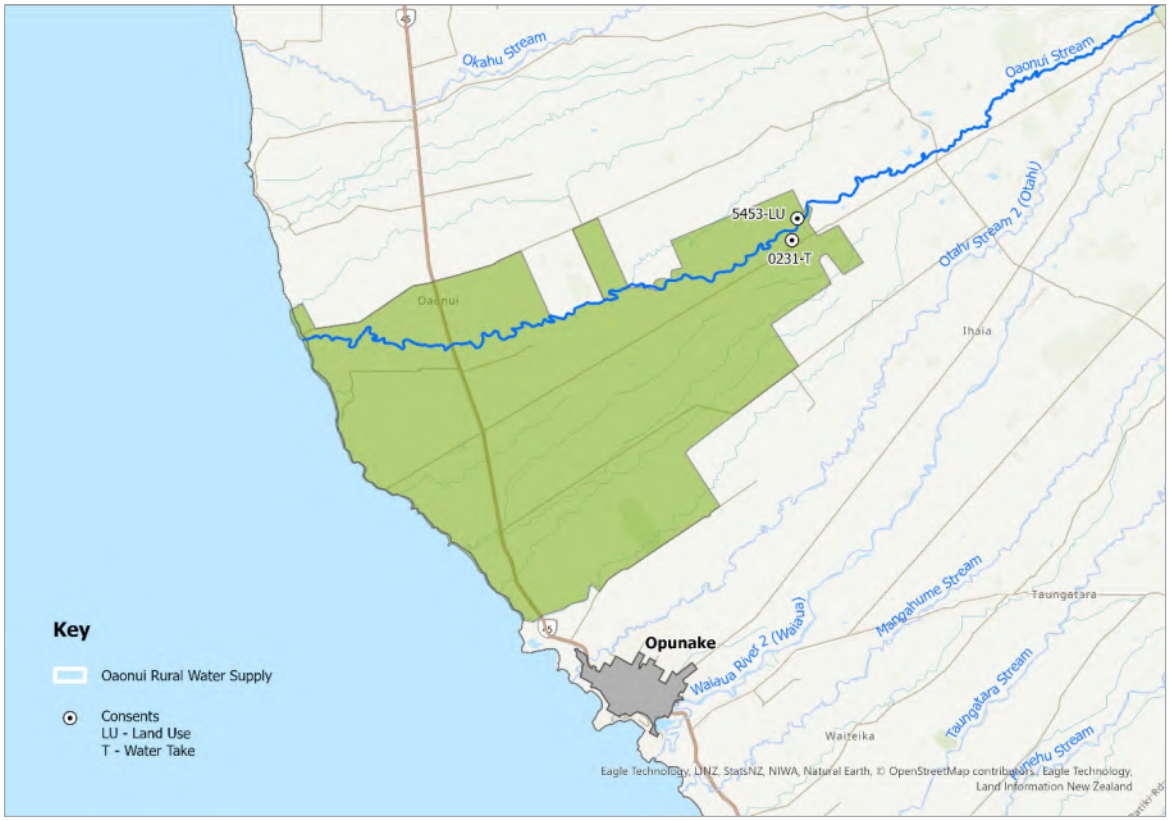

Figure 1 The location of the OWSL site and its associated water service area

1.3 Resource consents

OWSL holds three resource consents the details of which are summarised in the table below. 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 I, as are copies of all permits held by the Company during the period under review.

Table 1 Resource consents held by OWSL

Consent number	Purpose	Granted	Review	Expires
Water abstraction permit				
0231-4.1	To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station	August 2022	June 2025	June 2036
Water discharge permit				
10314-1.1	To discharge water and contaminants into the Oaonui Stream from sluicing a weir	August 2022	June 2025	June 2036
Land use permit				
5453-2.0	To use and maintain a weir and water intake structure on the bed of the Oaonui Stream, and to dam water, for water supply purposes	May 2017	June 2025	June 2036

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 OWSL's site consisted of five 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 site was visited once during the monitoring period, with regard to consents for the abstraction and discharge to water, as well as the structure consent. The main points of interest were the sluicing regime, intake structures, and water metering equipment. Sources of data being collected by OWSL 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 the discharge from the settling pond. The OWSL discharge was sampled on one occasion, and the sample analysed for total suspended solids, pH and turbidity.

1.4.5 Biomonitoring surveys

A biological survey was performed on two occasions, in spring and summer, in the Oaonui Stream to determine whether or not the activities and structures of OWSL have had a detrimental effect on the macroinvertebrate communities within the stream.

1.4.6 Data review

Abstraction rate and volume data was supplied by OWSL via telemetry and reviewed by Council staff.

1.4.7 Hydrological gauging

Council staff undertook regular gauging's at the telemetered water level recording site to maintain a flow rating curve for the site. Stream water level and residual flow data was also reviewed.

2 Results

2.1 Water

2.1.1 Inspections

A site inspection was undertaken on 28 February 2023. The abstraction rate of 130.8 m^3/h corresponded with telemetered data of 36.3 L/s. The weir and fish pass appeared to be operating well, with no obstructions or damage to the structure. Rock stabilisation wall holding up well above the weir, with no further erosion occurring. The intake was clear of debris and sand/sediment build-up. The reservoir was 94.5% full at the time of the inspection. The reservoir cover and liner were in good condition, with some ponding on top of the cover. A pump is used to reduce this ponding. The Oaonui Stream was clear and uncoloured, with small amounts of white foam present. A discharge sample was collected at the time of the inspection. The sample was clear and uncoloured.

2.1.2 Results of discharge monitoring

One discharge sample was collected during the monitoring period with results shown in Table 2.

Table 2 Results of OWSL discharge on 28 February 2023

Parameter	pH	Suspended solids	Turbidity
Units		**g/m³**	**FNU**
STW001175	8.7	<3	0.53
General discharge consent limits	*6-9*	*20*	-

There are currently no consent limits set on the constituents of OWSL's discharge, however these results are below/within accepted consent limits that other WTP's discharges have set in their consent conditions.

2.1.3 Biomonitoring surveys

The Council's standard 'kick-sampling' technique was used at three established sites to collect streambed macroinvertebrates from the Oaonui Stream in relation to the consents held by OWSL. Samples have provided information to assess any potential impacts the consented water abstraction and discharges may have had on the macroinvertebrate communities of this stream. Samples were processed to provide number of taxa (richness), MCI and $SQMCI_S$ scores for each 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 $SQMCI_S$ takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. It may be the more appropriate index if non-organic impacts are occurring.

Significant differences in either the MCI or the $SQMCI_S$ between sites indicate the degree of adverse effects (if any) of the discharges being monitored.

November 2022

Macroinvertebrate taxa richness was moderate, ranging between 13-15 taxa at all three sites. All sites recorded lower than their respective medians, as well as that recorded in the previous survey. The taxa values recorded at sites 1 and 3 were the lowest recorded at their respective sites to date. Site 1 recorded 13 taxa, which was the lowest for the survey. However, all sites were dominated by one 'highly sensitive' mayfly

taxon (*Deleatidium*) and all sites also had another taxon that was 'common' which was the Elmidae beetle. The presence of filamentous algae in the sample, as well as the water temperature being 4°C cooler than the previous survey could account for the low numbers of taxa.

MCI scores categorised all three sites as having 'good' macroinvertebrate community health, which was an improvement from the previous survey where 'moderate' health was recorded. Sites 1 and 3 recorded MCI values that were the highest recorded at their site to date with 108 and 109 units respectively. All sites recorded MCI scores significantly higher to that recorded in the previous survey. There were no significant differences in MCI recorded between the three sites surveyed in the current survey. All three sites recorded MCI scores higher than their respective site medians, with significantly higher scores recorded at sites 2 and 3. These scores are due to the presence of the highly sensitive mayfly (*Deleatidium*).

SQMCI scores were reflective of 'very good' macroinvertebrate community health at site 1 and 'excellent' at sites 2 and 3. SQMCI values showed an increase in macroinvertebrate community health in a downstream direction. All sites recorded SQMCI values significantly higher than both that recorded in the previous survey and their respective site medians. Sites 2 and 3 recorded SQMCI values that were the highest recorded at their respective site to date.

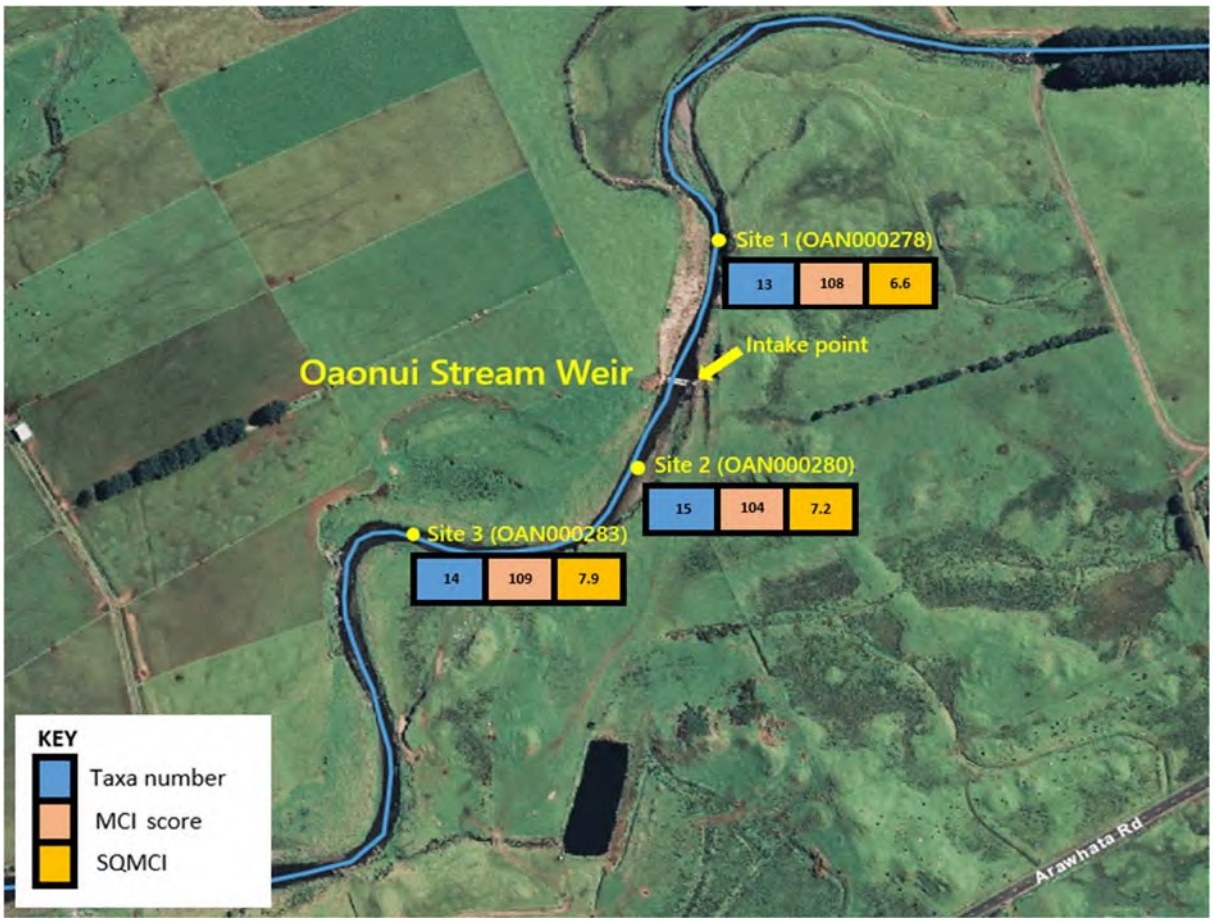

Figure 2 Macroinvertebrate index results recorded in the Oaonui Stream in relation to the OWSL Stream Weir, November 2022

Overall, MCI and SQMCI scores were reflective of 'good' to 'excellent' macroinvertebrate community health at the three sites surveyed. Taxa richness was moderate and similar at all three sites (Figure 2). There were no significant differences in MCI scores between the three sites, and SQMCI recorded an improvement in a downstream direction. All sites recorded MCI and SQMCI scores significantly higher than that previously recorded. In conclusion, there was no evidence that the Oaonui Stream Weir and associated activities had caused any significant adverse impacts on the macroinvertebrate communities of the Oaonui Stream.

March 2023

Macroinvertebrate taxa richness was moderate, ranging between 13-16 taxa at the three sites surveyed. Site 3 recorded 13 taxa, which is its lowest taxa recorded in a survey to date. Taxa richness was generally similar to that recorded in the previous spring survey, but was lower than their long-term site medians. Three taxa were dominant at all three sites, two 'tolerant' taxa; one snail taxon (*Potamopyrgus*) and one caddisfly taxon (*Aoteapsyche*), and one 'highly sensitive' mayfly taxon (*Deleatidium*)

MCI scores categorised sites 1 and 3 as having 'good' macroinvertebrate community health, while site 2 was categorised at 'fair' health. Site 2 was a decline from the previous survey where 'good' health was recorded. All sites recorded MCI values either equal to or higher than their respective medians, with site 3 being significantly higher. In comparison to the previous survey, site 1 and 2 recorded slightly lower, while site 3 recorded slightly higher. However no significant differences were recorded between the current survey and previous survey results.

SQMCI scores were reflective of 'fair' macroinvertebrate community health at sites 1 and 3, with 'good' health recorded at site 2. All sites recorded SQMCI values significantly lower than that recorded in the previous survey, however recorded similar values to their respective site medians.

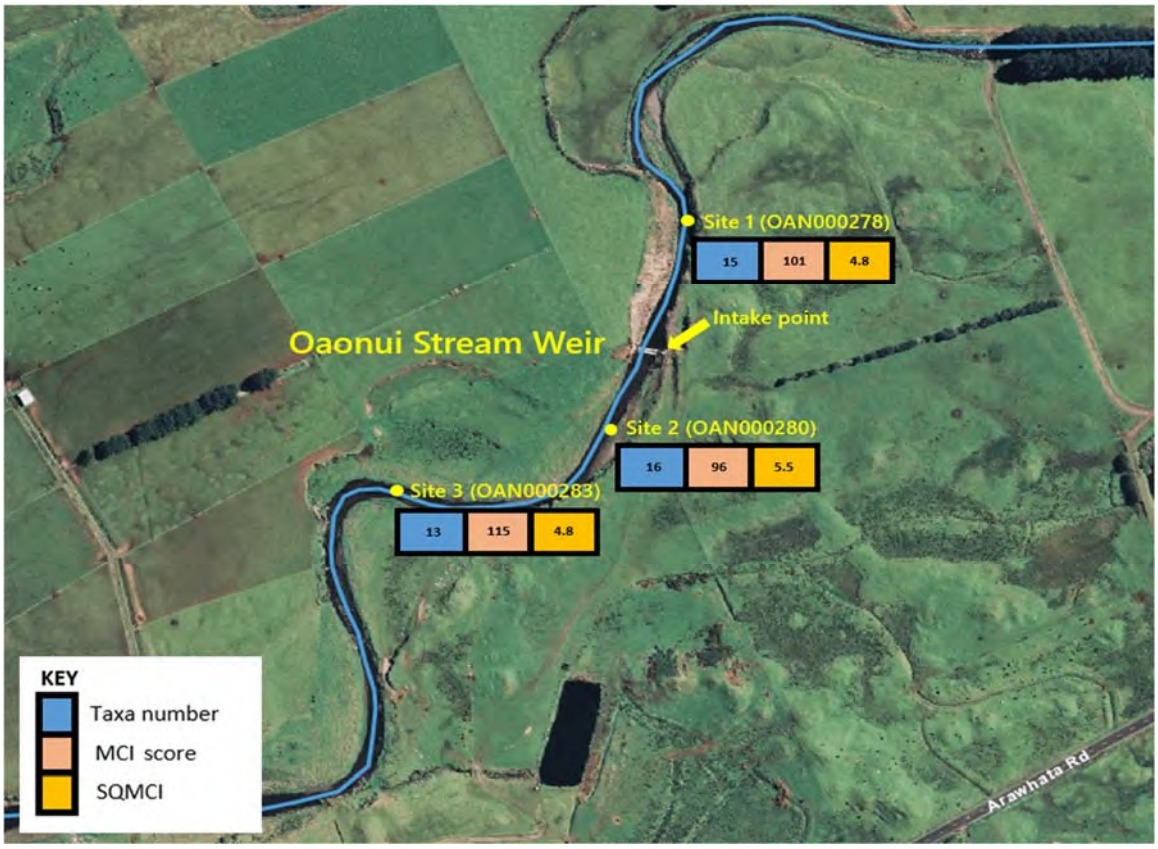

Figure 3 Macroinvertebrate index results recorded in the Oaonui Stream in relation to the OWSL Stream Weir, March 2023

Overall, MCI and SQMCI scores were reflective of 'fair to 'good' macroinvertebrate community health at the three sites surveyed. Taxa richness was moderate and similar at all three sites (Figure 3). MCI scores showed an improvement in the downstream direction, with site 3 being significantly higher than both sites 1 and 2. Sites 1 and 2 maintained similar MCI values to each other. There were no significant differences in SQMCI scores between the three sites, but all sites recorded results significantly lower than that recorded in the previous survey. In conclusion, there was no evidence that the Oaonui Stream Weir and associated activities had caused any significant adverse impacts on the macroinvertebrate communities of the Oaonui Stream.

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

2.1.4 Abstraction monitoring

During the monitoring period OWSL's abstraction data was provided to Council via telemetry and was reviewed by Council staff.

The consented abstraction rate limit of 50 L/s was complied with for over 99.4% of the monitoring period (Figure 4). There were 8 days (2.2%) of missing record for the year, which was due to the site being hit by lightning.

The breach of abstraction rate from 30 July 2022 through to 5 August 2022 was as a result of a direct lightning strike to the plant, which took out OWSL's electronics, power board and communications. This meant that OWSL had the plant in manual mode and were trying to fine tune the inlet valve to avoid breaching their consent, which was made more difficult due to the plant being gravity fed and stream water levels varying. Council lodged an incident for the non-compliance, but subsequently closed it as OWSL took every step to try and avoid breaching their consent conditions and had their system fully operational again in a prompt manner. This breach would have had no more than minor effects, as stream flows were high at the time of the breach.

There were also some minor breaches on 25 September, 13 and 18 October 2022 and 4 June 2023. These breaches were in relation to broken pipes that took time to locate. Once located, that area of pipe was shut down, to enable appropriate repairs to occur. At the time of these breaches, flows in the Oaonui stream were around 3x median, meaning that the likely impacts of these breaches would be less than minor. Liaison between OWSL and Council staff occurred throughout these breaches.

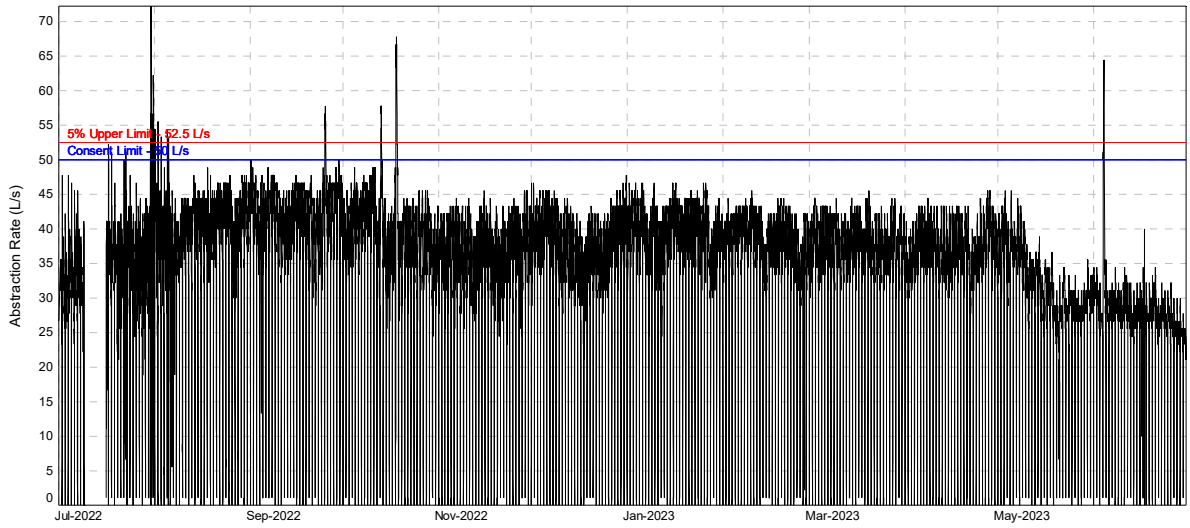

Figure 4 OWSL abstraction rate data for the 2022-2023 monitoring period

The consented 7-day abstraction volume of 28,000 m^3 was complied with 100% of the time (Figure 5). The maximum 7-day usage recorded for 2022-2023 was 24,187 m^3.

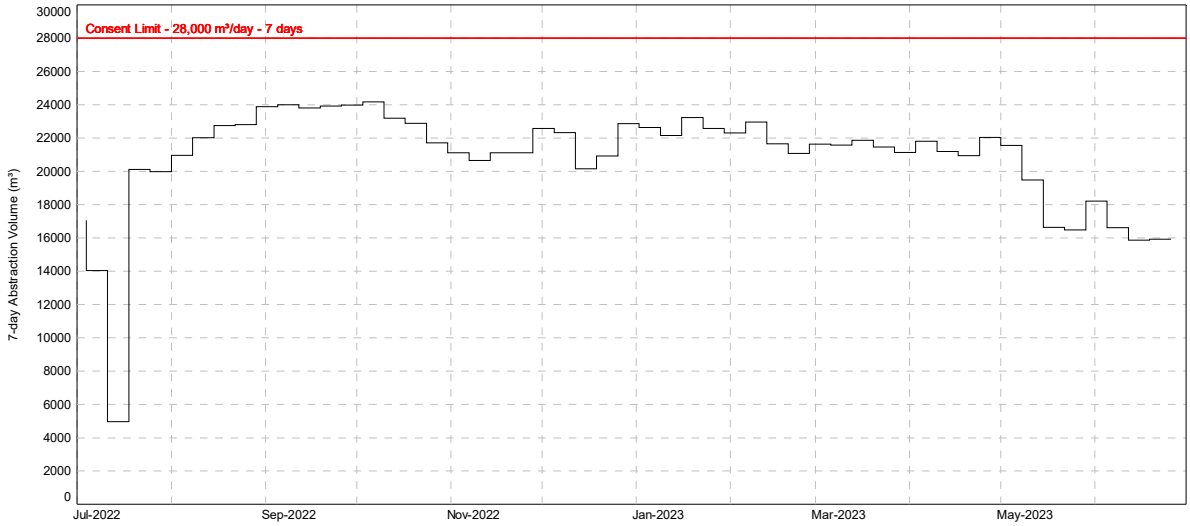

Figure 5 OWSL 7-day abstraction volume for the 2022-2023 monitoring period

Condition 10 of consent 0231-4.1 specifies that no water shall be used at the Maui Production Station when flows in the Oaonui Stream have been below 151 L/s at any time in the previous three days. OWSL notified the Council on two separate occasions that Maui Production Station would be taking water. On both of these occasions the flow in the Oaonui Stream had not dropped below 151 L/s in the previous three days (Table 3).

Table 3 Dates Maui Production Station abstracted and the minimum flow in the Oaonui Stream

Date	Minimum Flow in previous 3 days (L/s)
05-Sep-2022	170
24-Nov-2022	210

2.1.5 Hydrological monitoring and discharge assessment

2.1.5.1 Residual flow monitoring

In February 2022 the water level site downstream of the weir was destroyed and was deemed unsuitable to re-build. In liaison with OWSL, a new site was installed upstream of the weir and has been operational since 25 March 2022. This change in location meant that OWSL were non-compliant with their consent condition, therefore a review was undertaken to change the wording of condition 9 (under consent 0231-4) to remove the reference of the location of the where the flow needed to be measured. Therefore the residual flow is determined using the flow upstream minus the abstraction from OWSL. This change was granted in August 2022 and did not result in any change to the environmental effects. Due to the wetter than normal summer, stream flows in 2022-2023 monitoring period were all above the 151 L/s limit that requires OWSL to put water use restrictions in place (Figure 6).

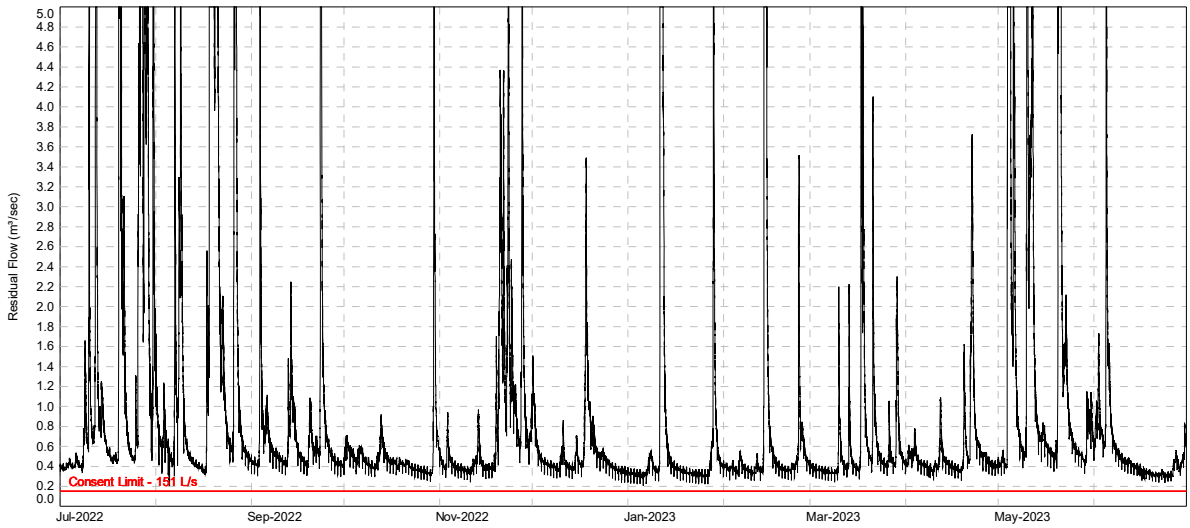

Figure 6 Oaonui Stream flow record for 2022-2023

2.1.5.2 Discharge consent 10314-1

Condition 3 of consent 10314-1 specifies that the consent may not be exercised (i.e. abstraction, including sluicing, must cease) if, at any time on each of the three previous days, the flow in the Oaonui Stream downstream of the weir has been less than 151 L/s. A rating curve was derived for the staff gauge at the site during 2019, and after applying the rating curve to the existing data it showed that sluicing regularly caused the stream to go below 151 L/s. As a result, an abatement notice was issued on 2 October 2019, for breach of conditions of consent 10314-1.

Modifications made by OWSL significantly reduced the number and severity of breaches during the 2021-2022 period, however the stream flow continued to regularly drop below 151 L/s during sluicing.

In June 2022, Council notified OWSL that the consent would be reviewed in order to change the requirements set out in special condition 4, relating to the sluicing of the river and the timing of the sluicing. The reviewed consent was granted in August 2022, with special condition 4 now stipulating that OWSL must not cause the stream flow to fall below 151 L/s as a result of sluicing operations.

Since granting the revised consent, OWSL have remained compliant with this consent condition (Figure 6).

2.1.6 Review of water efficiency audit report

Special condition 11 of consent 0231-4 states:

> *Before 1 December 2017 the consent holder shall provide a report to the Chief Executive, Taranaki Regional Council that:*
>
> *a) Identifies uses of water that are necessary to maintain the health and safety of people and animals; and*
> *b) Details methods that the consent holder will use to ensure that only those uses identified in condition 11(a) will occur when the flow immediately downstream of the intake is less than 151 L/s.*

Special Condition 15 of consent 0231-4 states:

> *Before 1 August 2018 the consent holder shall provide an 'Efficiency Audit Report', prepared by a suitably qualified independent person, to the Chief Executive, Taranaki Regional Council. The report shall have the following objectives:*

a) *characterising 'efficient water use' in the context of the Oaonui Water Supply;*
b) *describing the current level of efficiency of the Oaonui Water Supply Scheme;*
c) *identifying any barriers to efficient water use; and*
d) *Identifying how efficient water use can be achieved, including a timetable.*

The report shall include as a minimum:

i. *any work that could be undertaken to detect and minimise leaks;*
ii. *identification of water use efficiency and conservation measures that shall be practiced by individual users in order to achieve an appropriate level of efficiency;*
iii. *water use benchmarking data for the region, how the Oaonui Water Supply Scheme compares and reason for any significant differences;*
iv. *an assessment of the costs and benefits of individual metering;*
v. *the types of shed washdown methods used by farms in the scheme and how those methods contribute to efficient water use; and*
vi. *recommendations to achieve efficient water use as appropriate.*

These reports were circulated to the Council, Te Kāhui o Taranaki Trust and Fish and Game at the time, but had not been reported on previously.

Below is a summary of the key findings of the report that was received in 2017:

The Oaonui Stream has a moveable bed, therefore there is suspended sediment in the water, which makes the use of the cost effective mechanical meters unsuitable to record individual farmer's usage. This is possibly the single biggest barrier OWSL faces in trying to ascertain actual usage by their consumers. For the report is was estimated that OWSL's consumers peak usage is approximately 3,244 m^3/day, which equates to 22,708 m^3 over 7 days. Their actual usage over 2017-2018 peaked to approximately 25,000 m^3 over 7 days, which could be attributed to the prolonged dry summer.

As there are no individual meters, OWSL educates their consumers in finding potential leaks and minimising water loss. These potential leak indicators include: low water pressure, green patches in paddocks, low tank/trough floats, and no water at the shed to name a few. OWSL also has a 'hotline' that farmers are encouraged to use to report back any known leaks in the scheme. Consumers are also encouraged to install isolation shut-off valves at key points around their farm, to allow any potential leaks to be more easily identified and remedied.

At the time the report was written, there were two types of wash-down methods being utilised in the Scheme. The first one, is the common practice of high pressure hosing down after each milking and an automatic wash backing gate. The other is flood wash-down technique, which OWSL are encouraging farmers to move away from, as they use up to twice the volume of water per wash. Also more and more feed pads are being used, and they also require wash-downs when they are in use. OWSL promotes Dairy NZ's best practice guidelines "Smart water use on the farm".[2]

The report had three recommendations, which were

- Installing water meters for each consumer, however in practice it is not that simple, as some farms have up to five connections, due to the configuration and age of the pipe work and the smaller farm blocks being purchased by neighbouring farms, with the original connections remaining;
- Due to these difficulties, the second recommendation was for OWSL to install meters on three different sized properties within the scheme, and run that for three years to get an understanding of the water use and efficiencies. Once those three years are up, these meters would be removed and

[2] https://www.dairynz.co.nz/environment/on-farm-actions/water-use/smart-water-use-on-the-farm/

put on three other properties, and repeat this process until a picture was built up of water usage and efficiencies within the scheme; and

- The third recommendation, in the absence of individual water meters, was to have all consumers produce a worksheet[3] to estimate their water use, so OWSL could have a better understanding of the water efficiency for each farm.

2.1.7 Ecological Investigation report

Special condition 5 of consent 10314-1 states:

> *The consent holder shall ensure that an investigation is undertaken into the effects on the ecology of Oaonui Stream resulting from the exercise of this consent in combination with the damming authorised by consent 5453-2.0 and the taking authorised by consent 0231-4.0. A report on that investigation shall be provided to the Chief Executive, Taranaki Regional Council before 1 June 2020. The investigation shall be based on MCI and fish surveys.*

OWSL commissioned BTW Company to undertake this report, which was received by Council in October 2020.

The report had several recommendations with regards to hydrological monitoring, sluicing regime and ecological monitoring.

Improvements to the sluicing regime recommended by the consultants and implemented by OWSL to date are:

- Increasing the time gap between closing of the sluice gate and opening of the intake gate to decrease the time for the stream flow over the weir. OWSL are still looking to improve/increase the time gap.
- Sluicing undertaken at midnight, i.e. now completed at low demand times to reduce effects of sluicing on the reticulation supply.
- Implemented partial closing of the sluice gate to maintain some stream flow whilst the stream level builds up to overtop the weir.

These measures have significantly reduced the number and severity of consent breaches since they were implemented in the 2020-2021 period. Due to the wet summer experienced, the stream did not fall below 151 L/s, either naturally or from sluicing, in the 2022-2023 monitoring period.

Other recommendations made in the report were:

- Monitoring suspended and bed load sediment transport size distribution and volumes related to stream flow upstream of the sluicing gate (focussing on summer low flow) to improve decision making on gate openings;
- Temporary deployment of a network of pressure sensors downstream to determine extent of drawdown with distance from the weir;
- Opportunities for catchment riparian planting to reduce bank erosion and instream temperatures;
- Ensure a consistent approach in fish sampling methodologies and ensure suitable fish habitats are targeted;
- Consider targeting three locations upstream of the weir/fish pass that are torrentfish, redfin bully and inanga habitat and three locations downstream with sampling occurring at the time of the sluicing;
- Continue macroinvertebrate sampling; and

[3] https://www.dairynz.co.nz/media/647671/Worksheet-to-estimate-water-use-in-the-farm-dairy-.pdf

- Consider eDNA samples are collected above and below the weir to compare with the fish surveys and consider the use of eDNA sampling to replace the physical sampling;
- Regular maintenance checks of the sluice gate to ensure no leaks and that it isn't creating an attractant flow to migrating fish;
- Ensure the base of the fish pass apron is not an impediment for fish getting on the fish pass;

There was also a recommendation that the water level monitoring site location is evaluated as it may be better suited upstream of the weir to avoid the flow variability from the sluicing and abstraction. As stated in Section 2.1.5, the water level site was destroyed and subsequently relocated upstream, with the consent being revised to reflect this.

The Council's Land Management department work closely with farmer's to develop and implement Riparian Management Plans in the region. In the Oaonui Catchment, 69.23 km (56%) of planting and 89.3 km (52%) of fencing has been completed. Direct funding to the farmers has seen more than 27.4 km of planting and 21.1 km of fencing completed. Figure 7 shows the planting completion status as of July 2023 for the Oaonui Catchment.

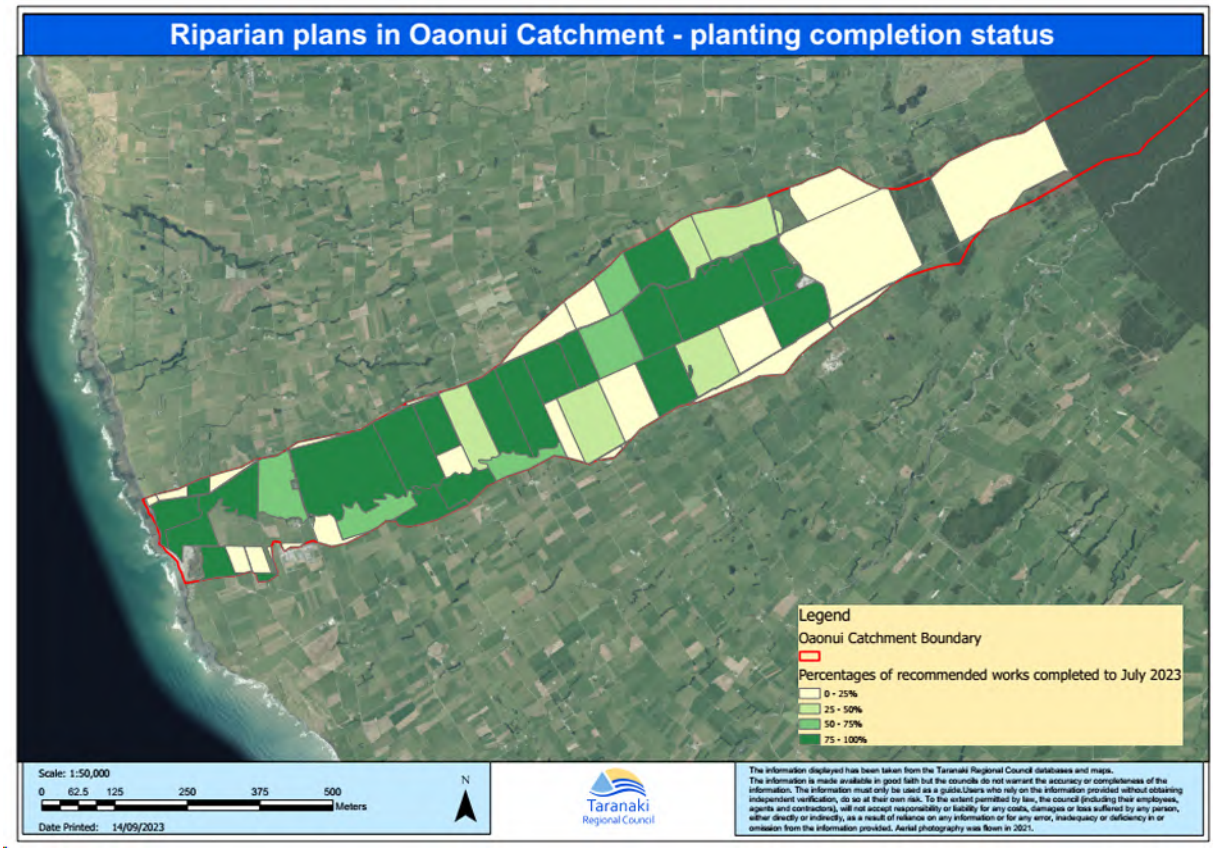

Figure 7 Planting completion status for the Oaonui Catchment as at July 2023

Macroinvertebrate sampling in spring and summer continues and an annual inspection is undertaken by Council staff to assess the full OWSL site, including the weir and fish pass.

In light of the recommendation regarding the fish monitoring, Council will only electric fish in the future, and align the survey more to the recommendations, which will consider the use of eDNA to aid in the sampling. An electric fishing survey is due to be completed in 2023-2024 monitoring year.

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 OWSL. 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 4 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to OWSL's activities during the 2022-2023 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.

Table 4 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
30/07/22	Water abstraction rate limits breached - A direct lightning strike had occurred at the plant, which resulted in OWSL having to operate the plant manually.	N	Incident lodged	Explanation was provided and accepted by Council.

3 Discussion

3.1 Discussion of site performance

The scheme was compliant at all times with the seven-day volume limit of 28,000 m^3.

The abstraction rate of 50 L/s was complied with for more than 99% of time during the monitoring period. There were five instances where OWSL breached their rate, which were all explained and dealt with at the time they occurred. Council accepted their reasons for these breaches.

In August 2022 consent 0231-4 was reviewed to change the wording of special condition 9, to allow the water level site to be moved upstream of the intake.

An ecological report was provided to Council, as required by condition 5 of consent 10314-1. This report made several suggestions to reduce the impacts of the sluice; some of which have since been implemented. The measures implemented have significantly reduced the number and severity of breaches since the 2020-2021 period.

Consent 10314-1 was reviewed in August 2022 and now requires that the sluicing activity does not cause the stream flow to fall below 151 L/s. Stream flows did not fall below 151 L/s, either naturally or from sluicing, in the 2022-2023 monitoring period.

3.2 Environmental effects of exercise of consents

Macroinvertebrate surveys found no direct evidence of adverse effects as a result of OWSL's activities. It is noted however that the sluicing of the intake on a daily basis, resulting in very low water levels below the weir, may be affecting the ecology downstream. In order to further investigate any potential effects, macroinvertebrate surveys have been increased from one to two (spring and summer) and an additional site has been added downstream (increasing from two sites to three) which will continue in the 2023-2024 monitoring period.

There was a breach of the allowable abstraction rate from 30 July to 5 August 2023 following a lightning strike that took out the electronics, meaning the plant went into manual mode. It took OWSL some time to adjust the system to ensure compliance with their abstraction rate. OWSL was in constant contact with Council throughout this period. Due to the high flows at the time, the effects from this breach would have been no more than minor.

3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 6-11.

Table 5 Summary of performance for consent 0231-4.1 (to August 2022)

Purpose: ***To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Permitted uses of water	Inspection and liaison with consent holder	Yes

Purpose: *To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
2. Limits on abstraction rates and volumes	Review of abstraction data	Rate – 98.9% compliant Volume – 100% compliant
3. Install and maintain a water meter and datalogger	Water meter inspected and data received	Yes
4. Equipment installed and maintained as per water takes regulations	Meter verified	Yes – October 2019
5. Notification to Council of equipment failure	Liaison with consent holder	Yes
6. Measuring and recording equipment to be accessible	Inspection	Yes
7. Measurement of stream flow	Telemetered data	Yes
8. Provision of abstraction records in suitable format	Telemetered data	Yes
9. Restrictions of water use during low flows	Telemetered data.	Yes
10. Restriction of water use at Maui Production Station during low flow periods	Works notification email advising of usage	Yes
11. Essential use report by 1 December 2017	Report received in 2018	Yes
12. Financial contribution	Payment received	Yes
13. Notification of testing by Maui Production Station	Liaison with consent holder	N/a
14. Intake screened	Inspection	Yes
15. Efficiency Audit Report by August 2018	Report received in 2018	Yes
16. Review condition	Next option for review – June 2025	N/a
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**
Overall assessment of administrative performance in respect of this consent		**High**

N/A – not applicable

Table 6 Summary of performance for consent 0231-4.1 (from August 2022)

Purpose: ***To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Permitted uses of water	Inspection and liaison with consent holder	Yes
2. Limits on abstraction rates and volumes	Review of abstraction data	Rate - 99.5% compliant Volume – 100% compliant
3. Install and maintain a water meter and datalogger	Water meter inspected and data received	Yes
4. Equipment installed and maintained as per water takes regulations	Meter verified	Yes – October 2019
5. Notification to Council of equipment failure	Liaison with consent holder	Yes
6. Measuring and recording equipment to be accessible	Inspection	Yes
7. Measurement of stream flow	Telemetered data	Yes
8. Provision of abstraction records in suitable format	Telemetered data	Yes
9. Restrictions of water use during low flows	Telemetered data.	Yes
10. Restriction of water use at Maui Production Station during low flow periods	Works notification email advising of usage	Yes
11. Essential use report by 1 December 2017	Report received in 2018	Yes
12. Financial contribution	Payment received	Yes
13. Notification of testing by Maui Production Station	Liaison with consent holder	N/a
14. Intake screened	Inspection	Yes
15. Efficiency Audit Report by August 2018	Report received in 2018	Yes
16. Review condition	Next option for review – June 2025	N/a
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

N/A = Not applicable

Table 7 Summary of performance for consent 5453-2

Purpose: *To use and maintain a weir and water intake structure on the bed of the Oaonui Stream, and to dam water, for water supply purposes*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Maintain weir to be fit for purpose	Inspection	Yes
2. Repair erosion or scour caused by weir	Inspection	Yes
3. Provide fish passage	Inspection	Yes
4. Review condition	Next option for review – June 2025	N/a
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

N/A – Not applicable

Table 8 Summary of performance for consent 10314-1.1 (to August 2022)

Purpose: *To discharge water and contaminants into the Oaonui Stream from sluicing a weir*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adopt best practicable option	Inspection, telemetered data and liaison with consent holder	Yes
2. Effects on receiving environment	Inspection, discharge sampling and macroinvertebrate survey	Yes
3. Consent not to be exercised if flow below weir drops below 151 L/s at any time on each of the three previous days	Telemetered data.	Yes
4. Sluicing managed to ensure flow overtopping weir within 2 minutes	Review of telemetered data	Yes
5. Ecological Report by June 2020	Received – October 2020	Yes
6. Review condition	Next option for review – June 2025	N/a
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

N/a – Not applicable

Table 9 Summary of performance for consent 10314-1.1 (from August 2022)

Purpose: *To discharge water and contaminants into the Oaonui Stream from sluicing a weir*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Adopt best practicable option	Inspection, telemetered data and liaison with consent holder	Yes

Purpose: *To discharge water and contaminants into the Oaonui Stream from sluicing a weir*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
2. Effects on receiving environment	Inspection, discharge sampling and macroinvertebrate survey	Yes
3. Consent not to be exercised if flow below weir drops below 151 L/s at any time on each of the three previous days	Telemetered data.	Yes
4. Sluicing shall not cause flow to drop below 151 L/s	Review of telemetered data	Yes
5. Ecological Report by June 2020	Received – October 2020	Yes
6. Review condition	Next option for review – June 2025	N/a
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**
Overall assessment of administrative performance in respect of this consent		**High**

N/A – Not applicable

Table 10 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2010	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2011	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2012	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2013	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2014	0231	1	-	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2015	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a
2016	0231	-	1	-	-
	5453	1	-	-	-
	10314	N/a	N/a	N/a	N/a

Year	Consent no	High	Good	Improvement req	Poor
2017	0231	1	-	-	-
	5453	1	-	-	-
	10314	1	-	-	-
2018	0231	-	1	-	-
	5453	1	-	-	-
	10314	1	-	-	-
2019	0231	-	1	-	-
	5453	1	-	-	-
	10314	1	-	-	-
2020	0231	-	-	1	-
	5453	1	-	-	-
	10314	-	-	1	-
2021	0231	-	-	1	-
	5453	1	-	-	-
	10314	-	-	1	-
2022	0231	-	1	-	-
	5453	1	-	-	-
	10314	-	-	1	-
2023	0231	-	1	-	-
	5453	1	-	-	-
	10314	1	-	-	-
Totals		20	10	5	0

N/a – Not applicable (consent granted May 2017)

During the year, OWSL demonstrated a good level of environmental and high level of administrative performance with the resource consents as defined in Appendix II.

3.4 Recommendations from the 2021-2022 Annual Report

In the 2021-2022 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at OWSL in the 2022-2023 year continue at the same level as in 2021-2022.
2. THAT should there be issues with environmental or administrative performance in 2022-2023, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

3.5 Alterations to monitoring programmes for 2023-2024

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.

No significant changes are planned for 2023-2024 monitoring programme. It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site 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 2023-2024.

4 Recommendations

1. THAT in the first instance, monitoring of consented activities at OWSL in the 2023-2024 year continue at the same level as in 2022-2023.
2. THAT should there be issues with environmental or administrative performance in 2023-2024, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

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 µS/cm.
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m^3s^{-1}).
Fresh	Elevated flow in a stream, such as after heavy rainfall.
g/m^3	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.
Investigation	Action taken by Council to establish what were the circumstances/events 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.
µS/cm	Microsiemens per centimetre.
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	*Resource Management Act 1991* and including all subsequent amendments.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).

Turb	Turbidity, expressed in NTU or FNU.

For further information on analytical methods, contact an Environmental Quality Manager.

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Appendix I

Resource consents held by OWSL

(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.

Water Permit

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

Name of Consent Holder:	Oaonui Water Supply Limited PO Box 3157 New Plymouth 4347
Decision Date:	5 April 2017
Commencement Date:	1 May 2017

Conditions of Consent

Consent Granted:	To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station
Expiry Date:	1 June 2036
Review Date(s):	June 2019 and 3-yearly intervals thereafter
Site Location:	Arawhata Road, Oaonui
Grid Reference (NZTM)	1676831E-5641435N
Catchment:	Oaonui

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. This consent authorises taking water only for the purposes of providing:
   (a) a general supply for domestic and farm use within the scheme area;
   (b) water for general domestic uses and firefighting training at the Maui Production Station; and
   (c) water for testing of bunds and tanks at the Maui Production Station.

2. The rate of taking shall not exceed 50 litres per second, and the volume taken in any 7 day period ending at midnight (New Zealand Standard Time) shall not exceed 28,000 cubic metres.

3. Before exercising this consent 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%. Records of the date, the time and the rate and volume of water taken at intervals not exceeding 15 minutes, shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times.

   Note: Water meters and dataloggers 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 and dataloggers have a limited lifespan.

4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring and recording 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 or datalogger;
   (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 and a maintenance report provided to the Chief Executive, Taranaki Regional Council within 30 days of the work occurring.

6. Any water meter or datalogger shall be accessible to Taranaki Regional Council officers at all reasonable times for inspection and/or data retrieval. In addition the data logger shall be designed and installed so that Taranaki Regional Council officers can readily verify that it is accurately recording the required information.

7. From 1 December 2017, for flows less than 500 litres per second, the consent holder shall measure and record the flow in the Oaonui Stream at the take site at intervals not exceeding 15 minutes to an accuracy of $\pm$10%.

8. The records of water taken (condition 3) and of the stream flow (condition 7) 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) from 1 December 2017, be transmitted directly to the Taranaki Regional Council's computer system, within 2 hours of being recorded.

9. When the flow in the Oaonui Stream, measured immediately downstream of the intake point, has at any time on each of the three previous days been less than 151 litres per second, the taking of water shall be restricted to the minimum amount necessary to maintain the health and safety of people and animals (i.e. garden watering and other non-essential uses are prohibited).

10. No water shall be used for testing bunds or product storage tanks at the Maui Production Station when the flow in the Oaonui Stream, measured immediately downstream of the intake, has at any time on each of the three previous days been less than 151 litres per second.

11. Before 1 December 2017 the consent holder shall provide a report to the Chief Executive, Taranaki Regional Council that:
   (a) identifies uses of water that are necessary to maintain the health and safety of people and animals; and
   (b) details methods that the consent holder will use to ensure that only those uses identified in condition 11(a) will occur when the flow immediately downstream of the intake is less than 151 L/s.

   The consent holder shall also provide a copy of this report to Te Kahui o Taranaki Trust and to Fish and Game.

12. The consent holder shall mitigate or offset the environmental effects of the take by making annual payments of $2200 (plus GST) to the Taranaki Regional Council as a financial contribution for the purpose of funding environmental enhancement projects. The environmental enhancement projects are, as first priority, to be in the Oaonui Stream catchment, and would include: enhancing, fencing and protection of wetlands, small streams and habitats of indigenous species. The amount to be paid shall be adjusted annually according to the consumer price index, or similar, to account for the effects of inflation, and be made no later than 1 September each year.

13. The consent holder shall notify the Taranaki Regional Council when the Maui Production station is undertaking testing on vessels and bunds. Notification shall include the consent number and shall detail the amount of water needed, type of test and test date and be emailed to worknotification@trc.govt.nz.

14. The consent holder shall ensure that the intake at the weir is designed to avoid fish entering the intake or being trapped against the screen.

15. Before 31 August 2018 the consent holder shall provide an 'Efficiency Audit Report', prepared by a suitably qualified independent person, to the Chief Executive, Taranaki Regional Council. The report shall have the following objectives:

    (a) characterising 'efficient water use' in the context of the Oaonui Water Supply;
    (b) describing the current level of efficiency of the Oaonui Water Supply Scheme;
    (c) identifying any barriers to efficient water use; and
    (d) identifying how efficient water use can be achieved, including a timetable.

    The report shall include as a minimum:

    (i) any work that could be undertaken to detect and minimise leaks;
    (ii) identification of water use efficiency and conservation measures that shall be practiced by individual users in order to achieve an appropriate level of efficiency;
    (iii) water use benchmarking data for the region, how the Oaonui Water Supply Scheme compares and reason for any significant differences;
    (iv) an assessment of the costs and benefits of individual metering;
    (v) the types of shed washdown methods used by farms in the scheme and how those methods contribute to efficient water use; and
    (vi) Recommendations to achieve efficient water use as appropriate.

    The consent holder shall also provide a copy of this report to Te Kahui o Taranaki Trust and to Fish and Game.

16. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2019 and at 3-yearly intervals thereafter for the purposes of:

    (a) ensuring efficient water use; and/or

    (b) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 5 April 2017

For and on behalf of
Taranaki Regional Council

_____

A D McLay
Director - Resource Management

Land Use Consent

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

Name of Consent Holder:	Oaonui Water Supply Limited PO Box 3157 New Plymouth 4347
Decision Date:	5 April 2017
Commencement Date:	1 May 2017

Conditions of Consent

Consent Granted:	To use and maintain a weir and water intake structure on the bed of the Oaonui Stream, and to dam water, for water supply purposes
Expiry Date:	1 June 2036
Review Date(s):	June 2019 and 3-yearly intervals thereafter
Site Location:	Arawhata Road, Oaonui
Grid Reference (NZTM)	1676822E-5641433N
Catchment:	Oaonui

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 maintain the weir so that it remains sound and fit for purpose.

2. The consent holder shall repair any erosion or scour of the river bed or banks caused by the weir and take reasonable steps to stop it recurring.

3. The weir shall not restrict the passage of fish.

4. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2019, and 3-yearly intervals thereafter for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 5 April 2017

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Discharge Permit

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

Name of Consent Holder:	Oaonui Water Supply Limited PO Box 3157 New Plymouth 4347
Decision Date:	5 April 2017
Commencement Date:	1 May 2017

Conditions of Consent

Consent Granted:	To discharge water and contaminants into the Oaonui Stream from sluicing a weir
Expiry Date:	1 June 2036
Review Date(s):	June 2019 and 3-yearly intervals thereafter
Site Location:	Arawhata Road, Oaonui
Grid Reference (NZTM)	1676828E-5641424N (sluicing discharge) 1676624E-5641124N (sand trap discharge)
Catchment:	Oaonui

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 at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge and the activity generally, including by appropriately managing the timing, frequency and duration of sluicing.

2. The exercise of this consent shall not give rise to any of the following effects in the Oaonui Stream beyond a distance of 50 metres downstream of a discharge point:

   (a) any conspicuous change in the colour or visual clarity;
   (b) any emission of objectionable odour;
   (c) the rendering of fresh water unsuitable for consumption by farm animals; and
   (d) any significant adverse effects on aquatic life.

3. This consent shall not be exercised if, at any time on each of the three previous days, the flow in the Oaonui Stream downstream of the weir has been less than 151 litres per second.

4. The sluicing shall be managed to ensure that within 2 minutes of the sluice gate being closed the stream is flowing over the weir.

5. The consent holder shall ensure that an investigation is undertaken into the effects on the ecology of Oaonui Stream resulting from the exercise of this consent in combination with the damming authorised by consent 5453-2.0 and the taking authorised by consent 0231-4.0. A report on that investigation shall be provided to the Chief Executive, Taranaki Regional Council before 1 June 2020. The investigation shall be based on MCI and fish surveys.

   The consent holder shall provide a copy of this report to Te Kahui o Taranaki Trust and to Fish and Game.

6. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2019 and at 3-yearly intervals thereafter, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 5 April 2017

For and on behalf of
Taranaki Regional Council

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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.