

Oaonui Water Supply Ltd

Monitoring Programme

Annual Report

2020-2021

Technical Report 2021-19



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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, Oaonui in the Oaonui catchment. This report for the period July 2020 to June 2021 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess OWSL'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, Oaonui Water Supply Ltd demonstrated an overall level of environmental performance that required improvement.

The Council's monitoring programme for the year under review included one inspection, a review of water abstraction data, two macroinvertebrate surveys, and various stream gaugings.

An improvement was required in OWSL's level of environmental performance with the resource consents. Although measures introduced by OWSL have reduced the number and severity of instances, there were still multiple breaches of consent 10314-1 whereby OWSL continued to operate when flows were less than 151 L/s downstream of the weir. This low water flow generally occurred as a result of sluicing. OWSL's administrative performance was high.

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.

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

This report includes recommendations for the 2021-2022 year, including a recommendation relating to an optional review of consents 0231-4, 5453-2, and 10314-1 in June 2022.

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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 2020 to June 2021 by the Council describing the monitoring programme associated with resource consents held by the 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 fifth dedicated annual report to be prepared by the Council to cover OWSL's water abstractions and structures. 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 through annual programmes;
- the resource consents held by OWSL 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 at the site.

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 2021-2022 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 and administrative performance

Besides discussing the various details of the performance and extent of compliance by OWSL, this report also assigns them a rating for their environmental and administrative performance during the period under review.

Environmental performance is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. Administrative performance is concerned with the OWSL'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.

For reference, in the 2020-2021 year, consent holders were found to achieve a high level of environmental performance and compliance for 86% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 11% of the consents, a good level of environmental performance and compliance was achieved.¹

1.2 Process description

Water is abstracted from the Oaonui Stream via 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. Water is also supplied to the Maui production station for fire-fighting purposes. Once a day the intakes are sluiced to clear accumulated silt.

¹ The Council has used these compliance grading criteria for more than 17 years. They align closely with the four compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

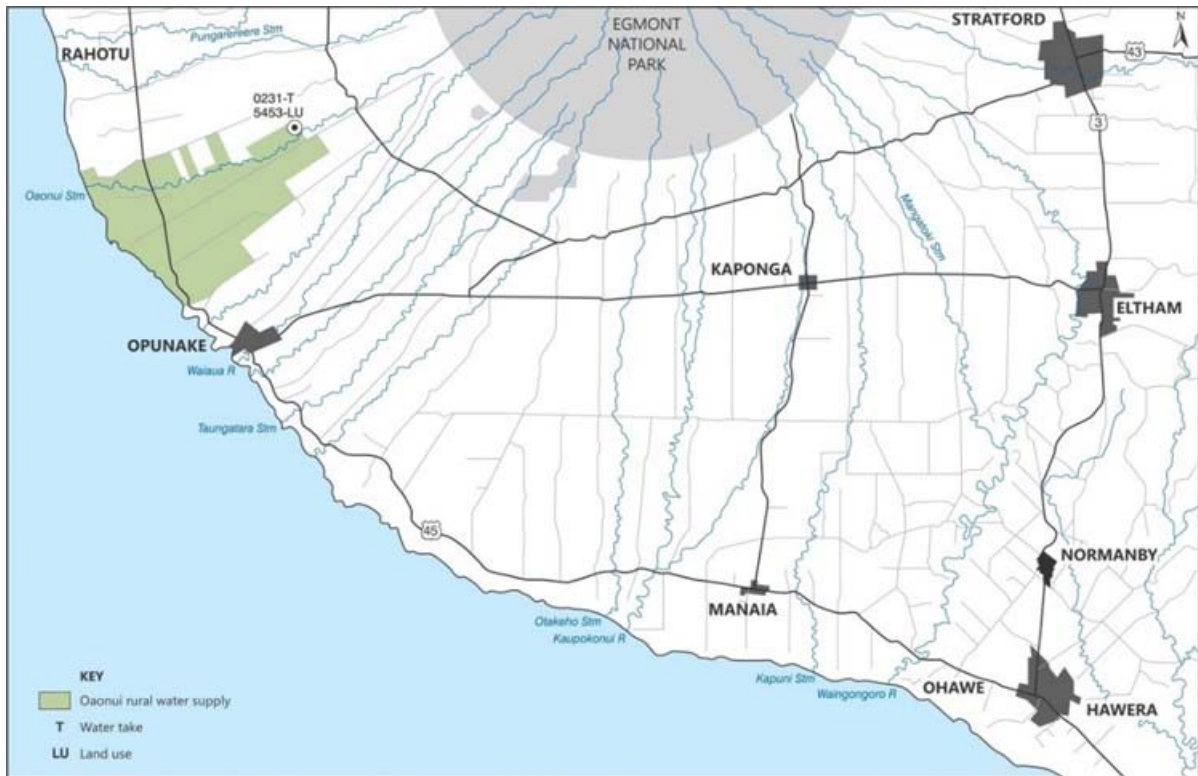


Figure 1 Oaonui Water Supply Ltd's water service area

1.3 Resource consents

Oaonui Water Supply Ltd 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 OWSL during the period under review.

Table 1 Resource consents held by OWSL

Consent number	Purpose	Granted	Review	Expires
<i>Water abstraction permits</i>				
0231-4	To take and use water from the Oaonui Stream for a rural community water supply scheme including the Maui Production Station	May 2017	June 2022	June 2036
<i>Water discharge permits</i>				
10314-1	To discharge water and contaminants into the Oaonui Stream from sluicing a weir	May 2017	June 2022	June 2036
<i>Land use permits</i>				
5453-2	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 2022	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 six 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 of, or discharge to water, 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 Data review

Abstraction rate and volume data was supplied by OWSL and reviewed by Council staff. Stream stage and residual flow data is also reviewed.

1.4.5 Fish surveys

Fish surveys are carried out every three years to assess the effectiveness of the fish pass on the weir. The next scheduled survey is due to be carried out in the 2021-2022 monitoring year.

1.4.6 Macroinvertebrate surveys

Council undertook two macroinvertebrate surveys to assess effects (if any) of OWSL's activities and structures on macroinvertebrate communities in the Oaonui Stream.

1.4.7 Hydrological gauging

Council staff undertook regular gaugings at the telemetered stage recording site to establish a ratings curve for the site.

2 Results

2.1 Inspections

A site inspection was undertaken on 22 April 2021. The abstraction rate of 128 m³/h corresponded with telemetered data of 35 L/s. The Oaonui Stream had a moderate flow and the fish pass was operating effectively. No issues were noted with the weir.

A sluice was observed (Photo 1). There was sufficient flow remaining in the stream that there were not any significant effects noted above the weir while the gate was open, or below the weir once it was closed. It took approximately two minutes for water to resume flowing down the fish pass, and less than five minutes for water to resume flowing over the weir once the sluice gate was shut.



Photo 1 Water no longer flowing over the Oaonui water supply weir during a sluice

2.2 Abstraction and stream flow data

2.2.1 Abstraction

During the monitoring period OWSL supplied daily volumes of water taken and this was reviewed by Council staff.

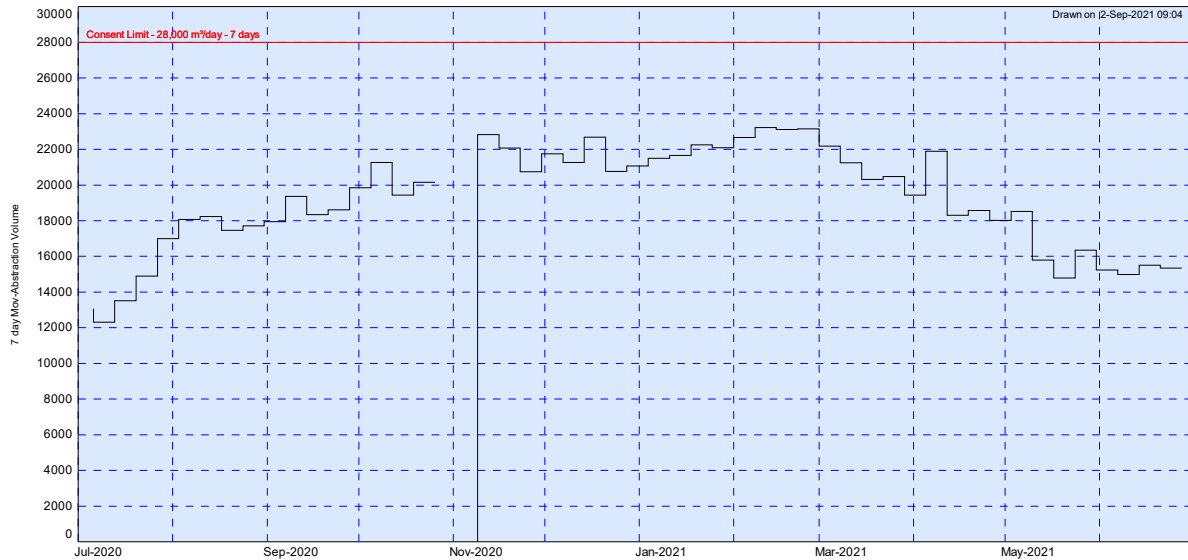


Figure 2 Seven-day volume (consent limit 28,000 m³)

OWSL complied with the consent limit for volume of take of 28,000 m³ over seven days (Figure 2).

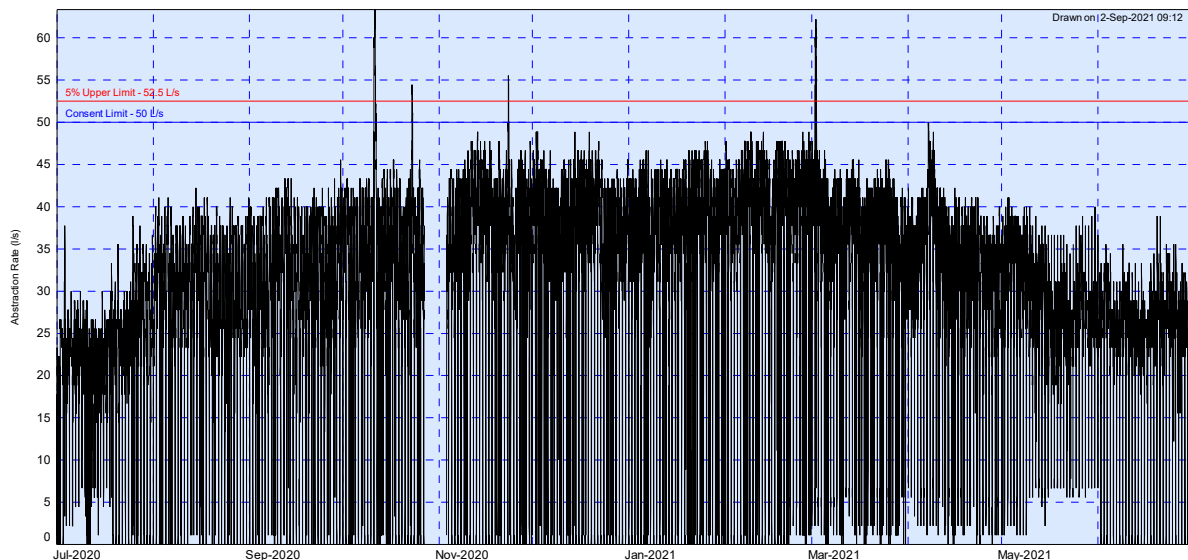


Figure 3 Daily abstraction rate (consent limit 50 L/s)

The rate of take of 50 L/s was complied with for over 99% of the monitoring period (Figure 3).

2.2.2 Stream flow

Condition 3 of consent 10314-1 specifies that the consent may not be exercised (ie. 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 ratings 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 causes 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, to be complied with by 15 November 2019. OWSL attempted to modify the sluicing procedure in various ways in order to comply with consent conditions. While engaging consultants to investigate the effects on the ecology of the Oaonui Stream (as per condition 5 of the consent) OWSL also sought some ideas on how to improve the sluicing procedure in order to become compliant.

Modifications made by OWSL significantly reduced the number and severity of breaches during the 2020-2021 period, however the stream continued to regularly drop below 151 L/s during sluicing. There were two occasions during the monitoring period, August 2020 (five days) and February 2021 (a few hours each on two days) where the stream flow dropped below 151 L/s for an extended period independent of sluicing.

2.3 Macroinvertebrate surveys

The Council's 'kick-sampling' technique was used at two sites on two occasions to collect streambed macroinvertebrates from the Oaonui Stream in relation to the consents held by OWSL. Samples have provided data 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 scores 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/absence of taxa with varying degrees of sensitivity to pollution. The SQMCI takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in macroinvertebrate 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.

21 December 2020

Macroinvertebrate taxa richness was moderate, ranging between 19-20 taxa at all three sites. These numbers of taxa were very similar to the median (20 taxa), recorded by 'control' sites at similar streams at comparable altitudes across the region.

MCI scores categorised all three sites as having 'good' macroinvertebrate community health. The MCI scores recorded at sites 1 and 2 were both the highest MCI scores recorded for the two sites to date. This can likely be attributed to higher flow conditions and to a decrease of nuisance periphyton coverage at both sites. Both sites recorded MCI scores that were higher than their respective site medians, with the MCI score recorded at site 2 being significantly higher than the median. The MCI score recorded at site 3 was an insignificant five units lower than that recorded upstream at sites 1 and 2.

SQMCI scores were reflective of 'good' macroinvertebrate community health at site 1 and 'fair' health at sites 2 and 3. There was an insignificant decline of 0.4 of a unit between 'control' site 1 and site 2, but a significant decline of 0.9 of a unit between sites 1 and 3. This can predominantly be explained by subtle changes to 'rare' taxa that differed between the two sites, which can be attributed to habitat differences between the two sites.

Overall, MCI scores were reflective of 'good' macroinvertebrate community health at the three sites surveyed. Both sites 1 and 2 recorded the highest MCI scores recorded for the sites to date.

Macroinvertebrate community composition was similar between sites, with five out of seven dominant taxa recorded at all three sites. SQMCI scores decreased in a downstream direction, however were not significantly different between adjacent sites. Taxa richness was moderate and similar to that recorded by 'control' sites at similar streams at comparable altitudes across the region. In conclusion, there was no strong evidence that the Oaonui Stream Weir and associated activities had caused any significant adverse impacts on the macroinvertebrate communities of the Oaonui Stream.

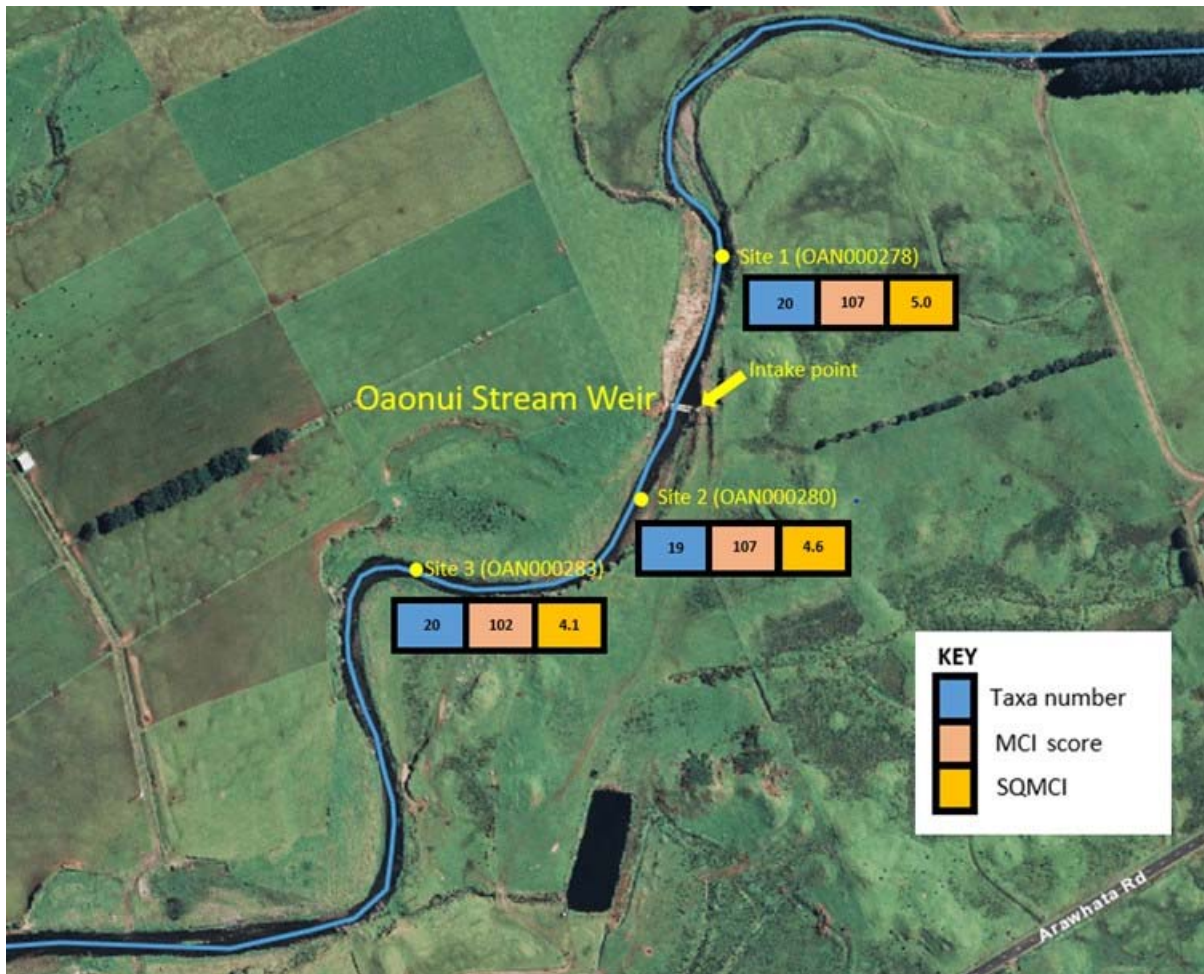


Figure 4 Macroinvertebrate index results recorded in the Oaonui Stream in relation to the OWSL Stream Weir, December 2020

1 March 2021

Macroinvertebrate taxa richness was moderate, ranging between 14-19 taxa at the three sites surveyed. Four taxa were dominant at all three sites, including two 'tolerant' and two 'moderately sensitive' taxa. MCI scores categorised all three sites as having 'fair' macroinvertebrate community health, which was a decline from the previous survey in which 'good' health was recorded. There were no significant differences in MCI scores between sites and both sites 1 and 2 recorded MCI scores that were not significantly different to site medians. SQMCI scores were also not significantly different between sites and increased in a downstream direction. SQMCI scores were reflective of 'fair' macroinvertebrate community health at all three sites. There was an increase of 0.3 of a unit between sites 1 and 3, however this was insignificant. The SQMCI score recorded at site 1 was the lowest recorded for the site to date and was a significant 0.9 of a unit lower than that recorded by the previous survey.

Overall, MCI scores were reflective of 'fair' macroinvertebrate community health at the three sites surveyed, with no significant differences between sites recorded. Macroinvertebrate community composition was similar between sites with four out of seven dominant taxa recorded at all three sites. SQMCI scores increased in a downstream direction, however, were not significantly different between sites. In conclusion, there was no strong evidence that the Oaonui Stream Weir and associated activities had caused any significant adverse impacts on the macroinvertebrate communities of the Oaonui Stream.

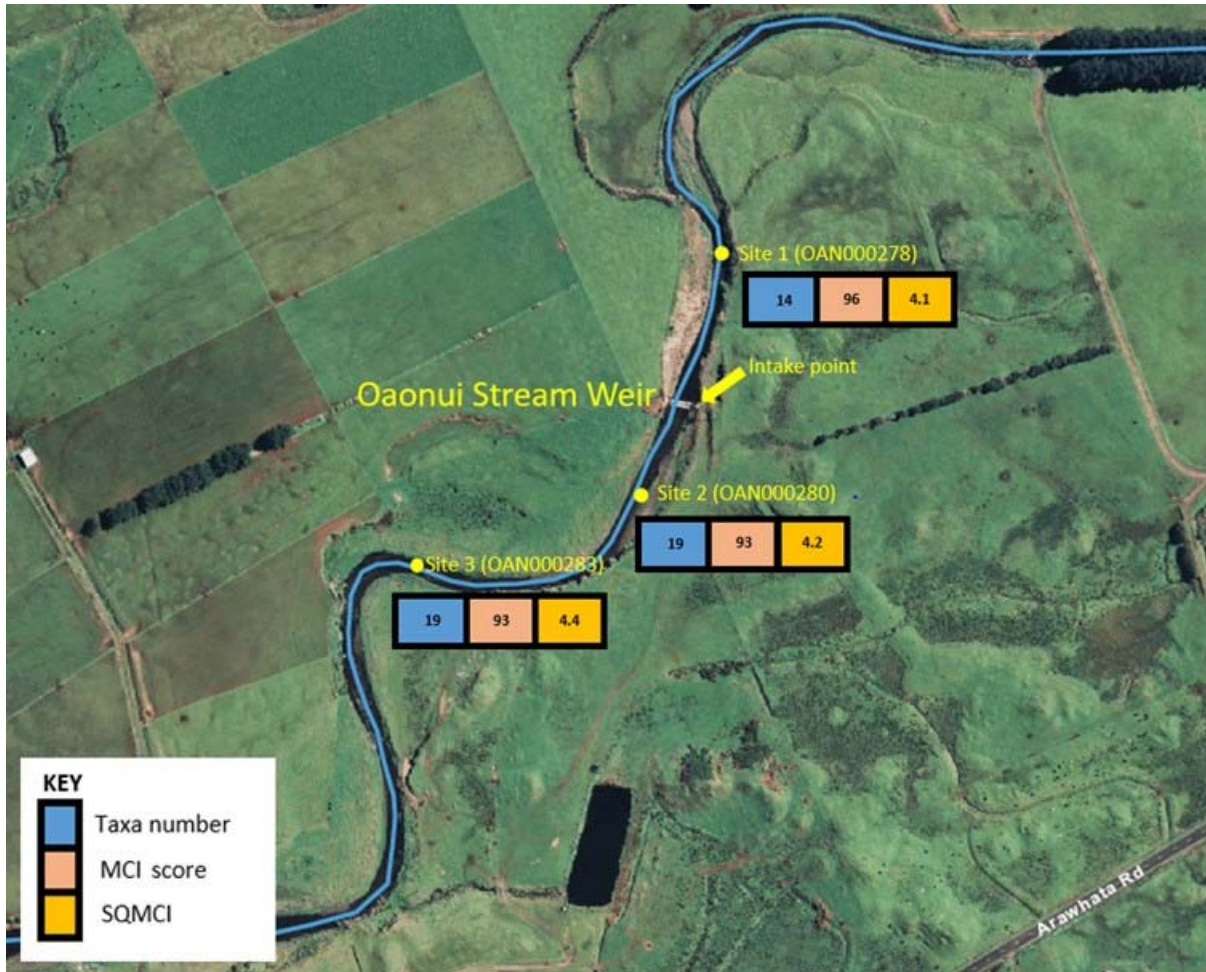


Figure 5 Macroinvertebrate index results recorded in the Oaonui Stream in relation to the OWSL Stream Weir, March 2021

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

2.4 Ecological report

Condition 5 of consent 10314-1 (discharge of water from sluicing) required an investigation to be undertaken into the effects on the ecology of the Oaonui Stream resulting from the exercise of the consent in combination with the damming authorised by consent 5453-2 and the taking authorised by consent 0231-4. A report on the investigation was to be provided to Council before 1 June 2020 (this report was provided in October 2020 due to delays caused by COVID-19 lockdown). The study used a limited database consisting of fish and macroinvertebrate monitoring, no data was available in relation to stream water temperatures, dissolved oxygen, bedload and suspended sediment transport.

Based on the data available it was concluded that the OWSL structures (weir, sluice channel and fish pass) were not a significant barrier to native fish passage. It could not be determined from the data available if there was any adverse effect on fish populations downstream caused by daily sluicing. The variability of MCI related to hydrodynamic variation in stream flow meant that no definitive conclusion could be made around the impact of OWSL activities from the MCI data available. The report provided several recommendations with regards to future monitoring that would provide data to better assess the effects of the sluicing on fish and macroinvertebrate communities.

The 2019-2020 hydrological data was examined. The annual average stream discharge above the weir was 0.686 m³/s and a total of 66 days in the 2019-2020 year recorded average flows below the consent limit of 0.151 m³/s. It was recommended that the consent limit be reviewed.

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

- 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.

An alternative summer low flow gate operation was also suggested as an option to route sediment and reduce biotic stress. Specifically, partially opening the gate (rather than completely opening) during summer low flows would allow sand/gravel/sediment to pass (in the local area near the abstraction gate) and maintain or increase duration of water flow over the weir and fish pass.

2.5 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).

In the 2020-2021 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with OWSL's conditions in resource consents or provisions in Regional Plans. However on two occasions consent 10314-1 and the associated abatement notice were breached with the take being exercised despite the flow in the Oaonui Stream being recorded below 151 L/s during the three days prior to the take. OWSL continues to work with a consultant to find a solution.

3 Discussion

3.1 Discussion of site performance

The scheme was compliant at all times with the seven-day volume limit of 28,000 m³.

The abstraction rate of 50 L/s was complied with for more than 99% of time during the monitoring period.

The issue of sluicing causing the flow downstream of the weir to drop below 151 L/s, and OWSL continuing to operate despite consent 10314-1 requiring them to cease abstraction, is ongoing and OWSL is working with a consultant in order to find a solution.

An ecological report as required by condition 5 of consent 10314-1 was provided. This report made several suggestions to reduce the impacts of the sluice and OWSL has implemented some of these including:

- 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 breaches during the 2020-2021 period, however the stream continued to regularly drop below 151 L/s during sluicing. There were also two occasions during the monitoring period, August 2020 (five days) and February 2021 (a few hours each on two days) where the stream flow dropped below 151 L/s independent of sluicing.

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).

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 2-4.

Table 2 Summary of performance for Consent 0231-4

Purpose: To take and use water from the Oaonui Stream for a rural community water supply scheme and 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. Permitted rates and volume of abstraction	Telemetered data	Greater than 99%
3. Install and maintain a water meter and data logger	Data received and meter inspected	Yes

Purpose: To take and use water from the Oaonui Stream for a rural community water supply scheme and the Maui Production Station		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
4. Certification of equipment	Notice of verification received October 2019, next due October 2024	Yes
5. Notification of equipment failure	Liaison with consent holder	Yes
6. Accessibility of metering equipment	Inspection	Yes
7. Measurement of stream flow	Telemetered data	Yes
8. Provision of records	Telemetered data	Yes
9. Restriction of water use during low flows	Telemetered data. Majority of drops temporary and brief due to sluicing, however stream flow overall was below 151 L/s for five days in August 2020 and a few hours on two days in February 2021	No
10. Restriction of water use at Maui Production Station during low flow periods	Not assessed during monitoring period	N/A
11. Provision of report identifying uses of water to ensure human and animal health by 1 December 2017	Report submitted previously	Yes
12. Financial contributions of \$2,200 per year	Payment received	Yes
13. Notification of hydrotesting at Maui Production Station	Liaison with consent holder	Yes
14. Intake to adequately screen to prevent entrainment of fish	Inspection	Yes
15. Provision of an efficiency report	Submitted September 2018	Yes
16. Review condition	Next option for review June 2022, recommendation attached in Section 3.6	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Table 3 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, fish survey	Yes
2. Repair erosion or scour caused by weir	Inspection	Yes
3. Provide fish passage	Inspection and previous fish surveys	Yes
4. Review provision	Next option for review June 2022, recommendation attached in Section 3.6	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 4 Summary of performance for Consent 10314-1

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 practice	Inspection, telemetered data and liaison with consent holder	No
2. Effects on receiving environment	Inspection and macroinvertebrate surveys	Yes
3. Consent not to be exercised if flow below weir drops below 151 L/s at any time on the three previous days	Telemetered data. Majority of drops temporary and brief due to sluicing, however stream flow overall was below 151 L/s for five days in August 2020 and a few hours on two days in February 2021	No. Multiple breaches
4. Sluicing to be managed so that stream is flowing over the weir within two minutes of sluicing gate being closed.	Sluice observed and video footage taken	Yes
5. Provide report on effects on ecology	Received October 2020	Yes
6. Review provision	Next option for review June 2022, recommendation attached in Section 3.6	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		Improvement required
Overall assessment of administrative performance in respect of this consent		High

N/A = not applicable

Overall, an improvement was required in OWSL's level of environmental performance with the resource consents as defined in Section 1.1.4. Although measures introduced by OWSL have reduced the number and

severity of instances, there were still multiple breaches of consent 10314-1 whereby OWSL continued to operate when flows were less than 151 L/s downstream of the weir. This low water flow generally occurred as a result of sluicing. OWSL's administrative performance was high.

3.4 Recommendations from the 2019-2020 Annual Report

In the 2019-2020 Annual Report, it was recommended:

1. THAT in the first instance, monitoring of consented activities at OWSL in the 2020-2021 year continue at a similar level as in 2019-2020, with the number of macroinvertebrate monitoring sites increased from two to three, and a spring survey formally added to the programme.
2. THAT should there be issues with environmental or administrative performance in 2020-2021, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.

These recommendations were implemented.

3.5 Alterations to monitoring programmes for 2021-2022

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 2021-2022 monitoring programme. In addition to the current fish survey monitoring schedule, it has been recommended that eDNA analysis be undertaken where available during any future fish surveys.

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 2021-2022.

3.6 Exercise of optional review of consent

Resource consents 0231-4, 5453-2, and 10314-1 provide for an optional review of the consent in June 2022. Conditions attached to the consents allow the Council to review the consents, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the consents.

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

4 Recommendations

1. THAT in the first instance, monitoring of consented activities at OWSL in the 2021-2022 year continue at the same level as in 2020-2021.
2. THAT should there be issues with environmental or administrative performance in 2021-2022, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
3. THAT the option for a review of resource consents 5453-2 and 10314-1 in June 2022, as set out in conditions of the consents, not be exercised, on the grounds that the current conditions are adequate.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

DO	Dissolved oxygen.
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.
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.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	<i>Resource Management Act 1991</i> and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).

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

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Appendix I

Resource consents held by Oaonui Water Supplies 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.

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 $\pm 5\%$. 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 $\pm 5\%$.

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.

Consent 0231-4.0

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.

Consent 0231-4.0

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.

Consent 0231-4.0

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

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.

Consent 10314-1.0

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

A D McLay
Director - Resource Management