Opunake Power Limited Monitoring Programme Annual Report 2015-2016

Technical Report 2016-7

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Executive summary

Opunake Power Limited (the Company) operates the Opunake hydro electric power scheme located at Opunake, in the Waiaua River catchment. The scheme uses a 4.5 m high weir to divert water from the Waiaua River along a canal to Lake Opunake, and then down penstocks to the Opunake power station. The power station discharges water to the Tasman Sea at Opunake Beach. This report for the period July 2015 to June 2016 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities. It should be noted that ownership of the scheme changed during the reported period, with the resource consents transferred from Opunake Hydro Limited to Opunake Power Limited in March 2016.

The Company holds eight resource consents, which include a total of 60 conditions setting out the requirements that the Company must satisfy. The Company holds two consents to allow it to take and use water, one consent to discharge water into the Tasman Sea, one consent to discharge sand to the Waiaua River, two consents for structures associated with the scheme, and two consents to disturb the bed of the Waiaua River and Lake Opunake.

During the monitoring period, Opunake Hydro Limited and Opunake Power Limited demonstrated an overall good level of environmental performance.

The Council's monitoring undertaken for the period under review included 5 compliance monitoring inspections and four hydrological inspections undertaken in relation to the scheme. In addition, analyses of generation data, fish pass water level data and lake level data provided by the Company was conducted.

The monitoring showed that despite issues related to erosion in the headwaters, and associated equipment failure including loss of gate control, the scheme operated with few major issues. In comparison with previous monitoring years, compliance with residual flow requirements was high, continuing on from the significant improvement noted in the previous monitoring period. Management of the level of Lake Opunake was similar to that recorded in the previous period, with a higher than normal number of occasions where the lake level dropped below the minimum. Near the end of the reporting period, it was discovered that a large volume of water was escaping the lake when the canal sluice gate was open. This was resolved in the 2016-2017 period. It should be noted that the Company never generated when the lake level was at or below the minimum authorised level during the reporting period, and that leakage was the principle cause when a low lake level occurred. There is still concern about the sand inundation of the head of Opunake Lake, and the reduced recreational value that has resulted from this. The Company is continuing to investigate an array of options, including reducing the potential for sand ingress, modifying the head of the lake to allow better flushing of sand, and a means of removing the sand currently in the lake.

Previous monitoring has determined that the weir and intake remains a barrier to fish passage to the upper Waiaua River, with fish passage for most species provided into the canal and lake only. However, during the reporting period, fish passage was also restricted in the fish pass at times, usually due to excessive flow, although this appeared to have been resolved during a site visit with the representative of the new owner. The Company began preliminary investigations into a possible solution in the reported period, and although the change in

ownership delayed this investigation, it is hoped that a trap and transfer system will be in place by the end of the 2016-2017 monitoring period.

With regard to submitted data, the Company improved with regards to providing the data within the required timeframe, and in reducing the amount of erroneous data. However, the data still contained some significant gaps, which requires attention.

During the year, the Company demonstrated a good level of environmental and administrative performance and compliance with the resource consents. In short, the Company needs to resolve issues around fish passage and the continuity of the data record recorded.

For reference, in the 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the performance of Opunake Hydro Limited was improving prior to the change in ownership, and this improved performance was maintained by the new owner right through to the end of the year under review.

This report includes recommendations for the 2016-2017 year, including increasing the monitoring programme to include monitoring of the fish trap and transfer system.

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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 the Monitoring Report for the period July 2015-June 2016 by the Taranaki Regional Council (the Council) on the monitoring programme associated with resource consents held by Opunake Power Limited (the Company). The Company operates a hydroelectric power scheme situated on Beach Road at Opunake, in the Waiaua River catchment.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to abstractions and discharges of water within the Waiaua River catchment, land use consents related to disturbance and damming of the Waiaua River, a discharge consent related to the discharge of sand and silt deposits and coastal permits for the discharge of water and the associated discharge structure.

One of the intents of the Resource Management Act 1991 (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of the Company's use of water, land and air, and is the 18th combined annual report by the Council for the Company.

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 RMA and the Council's obligations;
- the Council's approach to monitoring sites though annual programmes;
- the resource consents held by the Company in the Waiaua 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 2016-2017 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

The RMA primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

(a) the neighbourhood or the wider community around an activity, and may include cultural and social-economic effects;
(b) physical effects on the locality, including landscape, amenity and visual effects;
(c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
(d) natural and physical resources having special significance (for example recreational, cultural, or aesthetic); and
(e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Council is recognising the comprehensive meaning of 'effects' inasmuch as is appropriate for each activity. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with Section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans, and maintains an overview of the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, enables the Council to continually re-evaluate its approach and that of consent holders to resource management and, ultimately, through the refinement of methods and considered responsible resource utilisation, to move closer to achieving sustainable development of the region's resources.

1.1.4 Evaluation of environmental and administrative performance

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

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

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

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

Environmental Performance

- **High:** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. The Council did not record any verified unauthorised incidents involving significant 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 in response to unauthorised incident reports, 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 in response to unauthorised incident reports. 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 in response to unauthorised incident reports. 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 2015-2016 year, 71% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 24% demonstrated a good level of environmental performance and compliance with their consents

1.2 Process description

The Waiaua River has been used as a source of hydroelectric power generation since the original construction of the scheme in 1923. The diversion of water from the river below South Road (SH45) (Photo 1) occurs via a 4.5 m high weir, to a head race and storage lake. There is a river channel distance of approximately two kilometres in the Waiaua River between the diversion weir and the sea, known as the residual flow reach. The level of the storage lake (Lake Opunake) varies according to generation requirements. Water passes from Lake Opunake through the penstocks of the powerhouse and finally is released via a tunnel and tailrace onto the southeast end of Opunake Beach and into the Tasman Sea. Lake Opunake is used for a variety of recreational purposes (for example fishing, boating), but is subject to weed and algae proliferation, and also sand inundation.

The weir is designed to divert the total flow of the river for 80% of the time and to overtop only at higher flows. However, some minor seepage often occurs through the sluice gate in the weir. The weir itself constitutes a significant barrier to fish passage, and a fish pass has been installed to aid fish passage into the canal. Monitoring indicates that all species of fish present in the Waiaua River can negotiate this fish pass, but these fish are then expected to swim up the intake tunnels, to re-enter the Waiaua River upstream of the weir. One of these tunnels has been retrofitted with a second fish pass type structure, although monitoring indicates that some species cannot negotiate these intake structures.

Photo 1 shows the scheme's layout, in relation to the township of Opunake. More extensive historical information is provided in previous monitoring reports, listed in the bibliography.

Ownership of the scheme changed during the reported period, with all resource consents transferred from Opunake Hydro Limited to Opunake Power Limited in March 2016.

Photo 1 Opunake Power Limited scheme on the Waiaua River

1.3 Resource consents

1.3.1 Water abstraction permit

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.

The Company holds water permit **1795-4** to cover the taking of water from the Waiaua River in association with the Opunake hydroelectric power scheme. This permit was issued by the Council on 13 October 2006 under Section 87(d) of the RMA. It is due to expire on 1 June 2018.

Special condition 1 defines the maximum rate of abstraction (3,900 L/s).

Special condition 2 requires the Company to exercise the consent generally in accordance with the application. Special conditions 3 and 4 require the Company to maintain fish passage and a residual flow of 80 L/s in the Waiaua River downstream of the fishpass and 180 L/s downstream of the canal sluice gate.

Special condition 5 is a provision to review the appropriateness of a gradual increase in residual flow.

Special condition 6 requires notification prior to the consent being exercised.

Special condition 7 defines when the sluice gate/bywash can be closed.

Special condition 8 defines data that must be collected and forwarded to the Council.

Special condition 9 requires the Company to review the operational procedure.

Special condition 10 requires the Company and Council to meet with interested submitters to the consent once per year to discuss matters relating to this consent.

Special condition 11 relates to expiry of the consent should it not be exercised, and the last condition was a review provision.

This consent is currently under review, as per special condition 5.

The Company also holds water permit **1796-3** to take and use water from Lake Opunake for hydroelectric power generation. This permit was issued by the Council on 21 March 2001 under Section 87(d) of the Resource Management Act, and a variation to this consent was granted in the 2005-2006 monitoring year. It is due to expire on 1 June 2018.

Special condition 1 requires the Company to maintain water levels in the lake above a specified limit and that approval must be gained prior to lowering it further maintain a constant flow through the fish pass.

Special condition 2 requires there to be a constant flow through the fish pass.

Special conditions 3 and 4 require the Company to maintain a record of water levels within the lake at a minimum of 15 minute intervals and to install a staff gauge at Lake Opunake.

The last condition is a review provision.

The permits are attached to this report in Appendix I.

1.3.2 Water discharge permit

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.

The Company holds water discharge permit **1797-3** to cover the discharge of sand and silt deposits from a diversion canal sand trap via a spillway to the Waiaua River. This permit was issued by the Council on 21 March 2001 under Section 87(e) of the RMA. It is due to expire on 1 June 2018.

Special condition 1 states that the Company shall supply a sediment management protocol within three months of the granting of the consent.

Special condition 2 states that the Company must maintain a record of any sand trap discharges for supply to the Council.

Special condition 3 requires the Company to adopt the best practicable option.

The last two conditions are review provisions.

The Company holds coastal discharge permit **4744-2** to cover the discharge of up to 3,900 L/s of water from hydroelectric power generation through two marine outfall pipes into the Tasman Sea. This permit expired on 1 June 2012, and on 15 November 2012 a new consent was issued by the Council under Section 87(e) of the RMA. There were effectively no changes to the consent, which is due to expire on 1 June 2018. The short term of this consent provides for a common expiry date, which allows the Company's applications to be considered at the same time.

There are 3 special conditions which limit the discharge rate, require that the discharge of contaminated water shall not occur as a result of the exercise of the consent, and that appropriate warning signage is installed and maintained at the discharge point.

The permits are attached to this report in Appendix I.

1.3.3 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.

The Company holds landuse consent **5581-1** to cover the damming of the Waiaua River in association with the Opunake hydroelectric power scheme. This permit was issued by the Council on 21 March 2001 under Section 87(e) of the RMA. It is due to expire on 1 June 2018.

There are 10 special conditions associated with this consent.

Special condition 1 requires the Company to undertake the exercise of the consent generally in accordance with the application.

Special condition 2 states that it is the responsibility of the Company to maintain and operate a safe dam and the Council accepts no responsibility in this regard.

Special condition 3 requires that the Company shall maintain a fish pass that allows the passage of native fish, juvenile trout and adult trout. The special conditions also cover issues regarding maintenance work, notification of works, and that should the structure no longer be required then it is to be removed and the area re-instated.

Special conditions 4 to 6 place limitations and requirements around any maintenance works undertaken on or around the weir, while special condition 7 limits the timing of any riverbed disturbance to between 1 November and 30 April.

Special condition 8 requires the structure to be removed and the area reinstated should it no longer be required, and special conditions 9 and 10 are review provisions.

Section 13(2)(b) of the RMA stipulates that no person may disturb, remove, damage, or destroy any plant or part of any plant or the habitats of such plants or of animals in, on, or under the bed of any lake or river in a manner that contravenes a rule in a regional plan or a proposed regional plan unless the activity is allowed for by a resource consent or by Section 20 of the RMA.

The Company holds landuse consent **4658-2** to cover the disturbance of the bed of Lake Opunake in the Waiaua catchment by removing reeds and flaxes from the edge of the lake. This permit was issued by the Council on 22 March 2006 under Section 87(e) of the RMA, expiring on 1 June 2024.

Special conditions 1 and 2 require the Company to adopt the best practical option to prevent or minimise adverse effects, and to undertake the exercise of the consent generally in accordance with the application.

Special conditions 3 and 4 require the Company to notify the Taranaki Regional Council at least seven days before commencing work and that the works shall only be undertaken during the period 1 May to 31 October.

Special conditions 5 and 6 require that the Company minimise the discharge or placement of silt and/or organics and/or debris into the lake, and that they collect and remove all plant trimmings and other floatable material.

Special condition 7 requires that where removed material is placed on or near the banks of the lake, the Company ensures that decaying vegetation does not fall or leach into the lake.

The last two special conditions specify a lapse date, should this consent not be exercised within five years of it being granted, and provide for a review, if required.

The Company holds landuse consent **5692-1** to cover the disturbance of the bed of the Waiaua River by removing sediment build-up upstream of a weir for the purpose of maintaining the Opunake hydroelectric power scheme. This permit was issued by the Council on 21 March 2001 under Section 87(e) of the RMA. It is due to expire on 1 June 2018.

There are 9 special conditions associated with this consent. Special condition 1 and 2 require notification prior to undertaking maintenance works, and to undertake the exercise of the consent generally in accordance with the application, while special condition 3 states that the works shall only be undertaken during the period 1 December to 30 April.

Special conditions 4 and 5 require the adoption of the best practicable option to avoid or minimise the discharge of contaminants, and to minimise the area and volume of riverbed disturbance.

Special condition 6 requires the Company to keep records of works undertaken.

Special condition 7 requires that written permission be obtained prior to the deposition of sediment downstream of the weir.

The last two conditions are review provisions.

The permits are attached to this report in Appendix I.

1.3.4 Coastal permit

Section 12(1)(b) of the Act stipulates that in the coastal marine area, no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure or any part of a structure that is fixed in, on, under, or over any foreshore or seabed unless expressly allowed by a rule in a regional coastal plan, proposed regional coastal plan or a resource consent.

The Company holds coastal permit **4563-2** to cover the erection, placement, and maintenance of an outfall structure in the coastal marine area on the Opunake Beach foreshore. This permit was issued by the Council on 21 March 2001 under Section 87(e) of the RMA. It is due to expire on 1 June 2018.

There are 7 special conditions associated with the new consent with special condition 1 requiring the Company to undertake the exercise of the consent generally in accordance with the application, and special condition 2 requires the Company to notify the Council prior to maintenance works.

Special condition 3 requires the Company to adopt the best practical option to prevent or minimise adverse effects, and the area and volume of disturbance is to be minimised as far as practicable, as per special condition 4.

Special condition 5 requires the structure to be removed and the area reinstated should it no longer be required, and the last two special conditions are review provisions.

The permit is attached to this report in Appendix I.

This summary of consent conditions may not reflect the full requirements of each condition. The consent conditions in full can be found in the resource consents which are appended to this report.

1.4 Monitoring programme

1.4.1 Introduction

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

The Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations and seek information from consent holders.

The monitoring programme for the Company's site consisted of four primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Council in:

- ongoing liaison with resource consent holders over consent conditions and their interpretation and application;
- in discussion over monitoring requirements;
- preparation for any reviews;
- renewals;
- new consents;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

1.4.3 Site inspections

The river intake, lake and station were visited nine times during the monitoring period. Five of these visits were to inspect the site, with regard to consents for the abstraction of or discharge to water and the associated structures. The main points of interest were the maintenance of the fish pass, the maintenance of the residual flow in the river downstream of the weir, and compliance with lake level requirements. The remaining four visits were hydrological inspections, which were undertaken with the intention to undertake gaugings of the lower river. Unlike in the previous monitoring period, at no stage did flow conditions preclude the gauging from being undertaken, hence a total of eight gaugings were performed. Sources of data being collected by the Company were identified and accessed, so that performance in respect of operation, internal

monitoring, and supervision could be reviewed by the Council. There was also one offsite meeting held with the Company

1.4.4 Fish surveys

Although no fish surveys were undertaken in the reporting period, they remain a component of the programme, albeit provisional. This means a survey can be undertaken should there be any modifications to the fish pass, to assess the effectiveness of these modifications.

1.4.5 Data audit

Special condition 8 of consent 1795-4 requires that the Company records fish pass water levels and generation figures as a measure of abstraction rates, and is to forward the records to the Council at three monthly intervals.

Special condition 3 of consent 1796-3 requires the Company to maintain a record of water levels in Lake Opunake and provide records to the Council, at three monthly intervals. The Company has provided records at 15 minute intervals of generation records and water levels in Lake Opunake. The records were checked to determine whether or not water levels in the lake complied with consent conditions.

2. Results

2.1 Water

2.1.1 Inspections

The first compliance monitoring inspection, completed on 16 July 2015, noted that a recent flood had mobilised a large amount of sand and gravel down the river, with some of it accumulating at the bottom of the fish pass. This presented a partial barrier to fish passage. In addition to this, there was a high rate of flow down the pass, further restricting passage. Following this inspection, the Council was contacted by a local contractor who was intending to remove some of the gravel that had accumulated behind the weir, to allow maintenance of the flow control gates on the weir. The Company holds a resource consent for this activity.

Company representatives were met onsite during the second compliance monitoring inspection, undertaken on 13 August 2015. Due to high flows in the river, the gravel had not yet been cleared from behind the weir. As a result, control of some of the gates was still inhibited. The provision of fish passage was also discussed and the Company committed to investigate altering the current set up, so that fish can be trapped and transferred upstream of the weir.

The next two compliance monitoring inspections, performed on 7 December 2015 and 26 January 2016 also found that flows down the fish pass were excessive, and that there was also quite a high flow down the canal sluice gate. During the December inspection, there were a number of whitebait and bully observed at the coastal outlet, which was slightly buried during the January inspection. Due to a small discharge of water at the coast, the sand covering the structure was water logged, and a potential hazard to members of the public. There were also members of the public swimming in the canal near the canal sluice gate. This may also pose a hazard.

The final compliance monitoring inspection of the reported period was completed on 21 June 2016, when the representative of the new owner was met on site. The scheme and associated monitoring was discussed, as was the operation of the scheme. Various fish were observed, including trout in the canal and river, and a torrentfish in the fish pass. The controls of the scheme were activated during this inspection, and the mechanism which controls water level in the fish pass had some settings changed, so that flow down the pass was more stable and of a more appropriate velocity. The canal sluice gate was also opened during this inspection, and this resulted in the discovery of a large leak, where lake water was bypassing the lake stop gate, and surging up in the centre of the water race. The Company committed to repairing this leak. The trap and transfer of migrant fish was also discussed, and the Company committed to investigating this further. A discussion was also had about what steps were required to aid the consent renewal process, with most consents due to expire in 2018.

2.1.2 Hydrological inspections

Special condition 4 of water permit 1795-4 sets residual flows that the operator needs to comply with, as follows:

"The consent holder shall ensure that a residual flow of not less than 80 L/s as measured in the Waiaua River immediately downstream of the fish pass, and not less

than 180 L/s as measured in the Waiaua River immediately downstream of the canal sluice gate discharge, is maintained at all times".

The site was visited four times by hydrology staff during the reported period. A summary of results are presented in Table 1.

During each hydrological inspection it is intended to perform two gaugings. The first gauging is usually undertaken in the river downstream of the fish pass, and the second gauging is conducted downstream of both the fish pass and canal sluice gate to assess the total residual flow. However, on occasion, flow conditions can preclude any gaugings from being undertaken.

Such flow conditions did not occur during this year's hydrological inspections. Hence, during each of the visits, two gaugings were performed, and flows were found to be well in compliance with consent requirements (Table 1).

Table 1 Hydrological inspection and gauging results for the Waiaua River, Opunake HEP

Date	Fish pass level (mm)	Lake Level (mm)	Flow downstream of fish pass (L/s)	Flow downstream of sluice gate (L/s)	Compliant?
Minimum required:	No minimum but 440 optimum	500	80	180	-
6 October 2015	535	725	481	1,774	Y
15 December 2015	537	736	535	1,191	Y
25 February 2016	432	704	374	401	Y
19 April 2016	441	782	236	353	Y

In addition to undertaking gaugings, the water level in the lake was recorded, and compared with the minimum lake level. The recorded lake level was in compliance with consented limits on each occasion.

During the October and December 2015 visits, the flow in the Waiaua River was also gauged upstream of the scheme. This allows an estimate to be made of the abstraction rate at this time, being the flow of water into Lake Opunake, by subtracting the flow downstream of the canal sluice gate from that recorded upstream of the scheme. The flow recorded upstream in October was 2.051 m^3/s, resulting in an estimated take rate of 0.277 m^3/s, while in December it was recorded as 1.723 m^3/s, resulting in an estimated take at this time of 0.532 m^3/s. Both results were in compliance with the maximum rate of take condition of consent 1795-4, which is set at 3.9 m^3/s.

2.1.3 Provision of consent holder data

2.1.3.1 Generation levels

Water permit 1795-4 allows the Company to abstract 3,900 L/s of water from the Waiaua River. Special condition 8 requires the Company to record generation figures (as a measure of abstraction rates) at a minimum of 15 minute intervals and to make records available to the Council. These records were provided to the Council for the 2015-2016 monitoring period (Figure 1). This data was provided in a more timely fashion than the 2014-2015 data, a notable improvement in performance.

It is clear that the site experienced the occasional outage (evident as gaps in the data), with the largest occurring in August 2015, associated with impacts caused by severe flooding. The majority of the remaining outages were related to a loss of control, due to issues with the programmed logic controller (PLC). The PLC is used to control the scheme, opening and closing gates as circumstances require. This allows the scheme to run automatically. It is hoped that the Company will address the frequent problems with the PLC, to avoid the data record containing too many gaps.

Figure 2 shows the typical generation cycle over two distinct periods. This indicates that there is some variation in how often generation occurs in a day, with generation ceasing to allow the lake to refill. This variation will in most cases be directly related to the amount of flow in the river, influencing the rate at which the lake refills. This is well illustrated by Figure 2, which shows generation during a dry period (December 2015) and a wet period (September 2015).

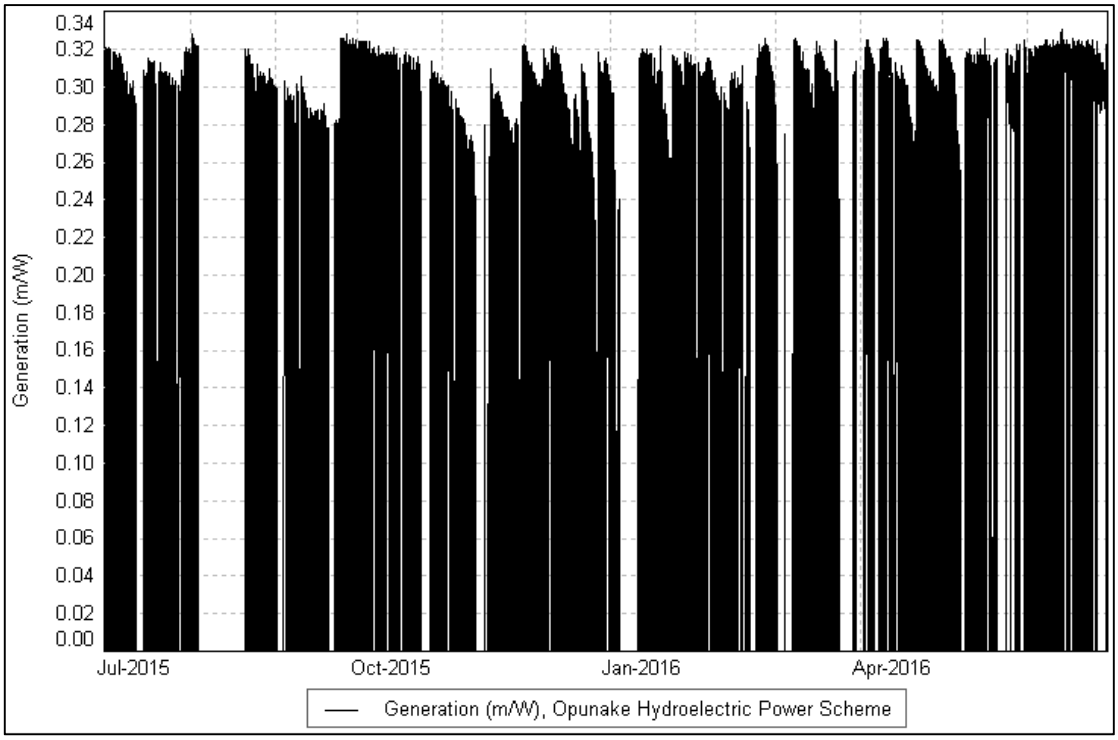

Figure 1 Generation figures from the Opunake HEP scheme from 1 July 2015 to 1 July to 2016

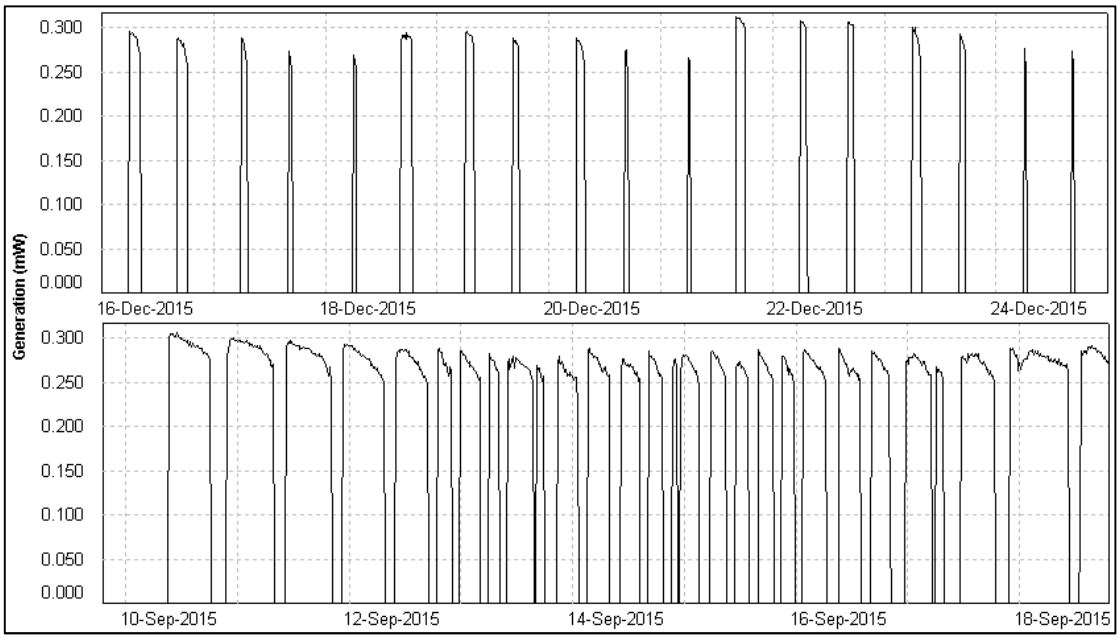

Figure 2 Typical generation pattern over two separate periods during the 2015-2016 period

2.1.3.2 Lake levels

Special condition 1 of consent 1796-3 outlines the requirements for water level management in the lake. According to the consent, the water level within the lake is not to be lowered more than 480 mm below the lake spillway crest (lake water level 500 mm), although with the approval of the Council, it may be lowered further for maintenance purposes.

The spillway crest was altered by a previous consent holder, by adding boards to raise the lake level. The altered crest is equivalent in height to 0.98 m on the lake staff gauge. This work was carried out many years ago however, and the Council is of the understanding that the consent conditions relate to the top of the boards as being the "spillway crest". This has been determined from the consent files, and monitoring data from previous consent holders.

A recording device for monitoring lake levels has been installed since November 2001. Records of lake levels have been provided for 2015-2016 period as required by special condition 3 of consent 1796-3.

The 2015-2016 lake level data is provided in Figure 3, and this shows that the outage that affected the generation data in August 2015 also impacted on the collection of lake level data, with no data recorded for 15 consecutive days. This is excessive, although related to the performance of Opunake Hydro Limited. The new owner may need to investigate this and take steps to avoid a recurrence. During the previous monitoring period a significant amount of erroneous lake level data was collected. This does not appear to have continued through into the 2015-2016 period. This indicates an improvement in performance from the previous period.

In terms of breaches of the minimum lake level, the lake dropped below this level on twelve occasions, over 19 calendar days. This is similar to that recorded in the previous

monitoring period, although it is important to note that none of the low lake levels are due to generation drawing the lake down too far.

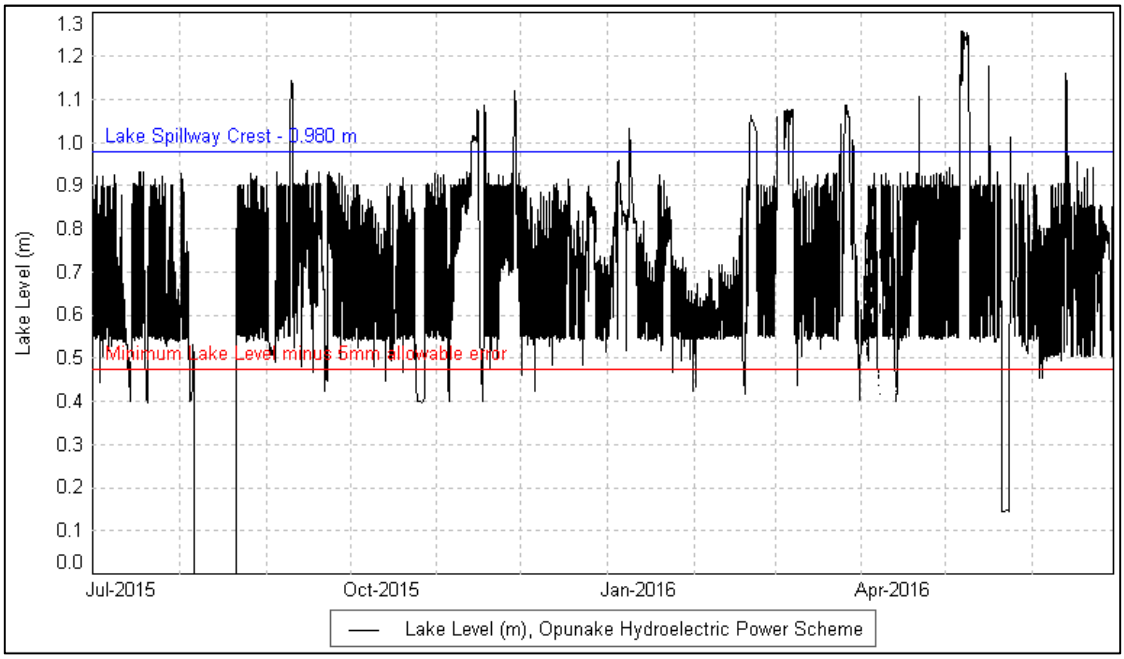

Figure 3 Water levels in Lake Opunake, 2015-2016 period

When there is a flood in the Waiaua River, the intake is closed to minimise sand inundation of the scheme. As a result, the canal is emptied, and even though there is a gate that stops most of the lake water flowing back into the canal, there is inevitably some leakage at this gate, and also at the lake spillway. This leakage draws the lake down if the river remains in flood for some time. This is illustrated in Figure 4, where a flood occurred on 18 February 2016, resulting in the intake gate closing and generation ceasing. The lake level reduced over time, dropping below the minimum lake level approximately 9 hours after generation ceased. The high lake level evident on 21 February 2016 was the result of a generator outage.

It is thought that the increased incidence of low lake levels from that recorded prior to 2014 may be an indication that the rate of water loss through leaks has increased, and/or that the PLC has been altered and the intake gate is now shut earlier during such an event. Figure 5 shows how the lake level reduces over time following cessation of generation. This shows that although generation ceased at a similar lake level, the rate of decrease increased over time. In July 2013 it took over two days for the lake level to drop below 0.5 m, while in September 2014 it took only ten hours, and in November 2015, six hours.

This issue was also noted in the previous monitoring report, and during the last inspection of the 2015-2016 period, a large volume of water was observed escaping around the lake stop gate when the canal sluice gate was fully opened. This is likely to have been the reason why the lake was draining more quickly, and the Company took steps to address this in the 2016-2017 monitoring period.

It is noted that the Company does not draw the lake down to 0.5 m during each generation, and this ensures there is some reserve capacity, should the Waiaua River flood just as generation ceases, reducing the potential for a low lake level to eventuate.

No complaints were received regarding the low lake levels during the 2015-2016 monitoring period.

An improvement in the data recorded was noted in the 2003-2004 monitoring period, with a steady improvement occurring over time (2004-2015), and the records reported herein continue to indicate an improvement in the management of the lake level data, being more complete than those provided in previous periods. As with the generation data, there were occasions of missing or erroneous data, the majority of which being the result of system malfunctions. It should be noted that data needs to be recorded even if no generation is occurring, and that large gaps in the data could be deemed non-compliant.

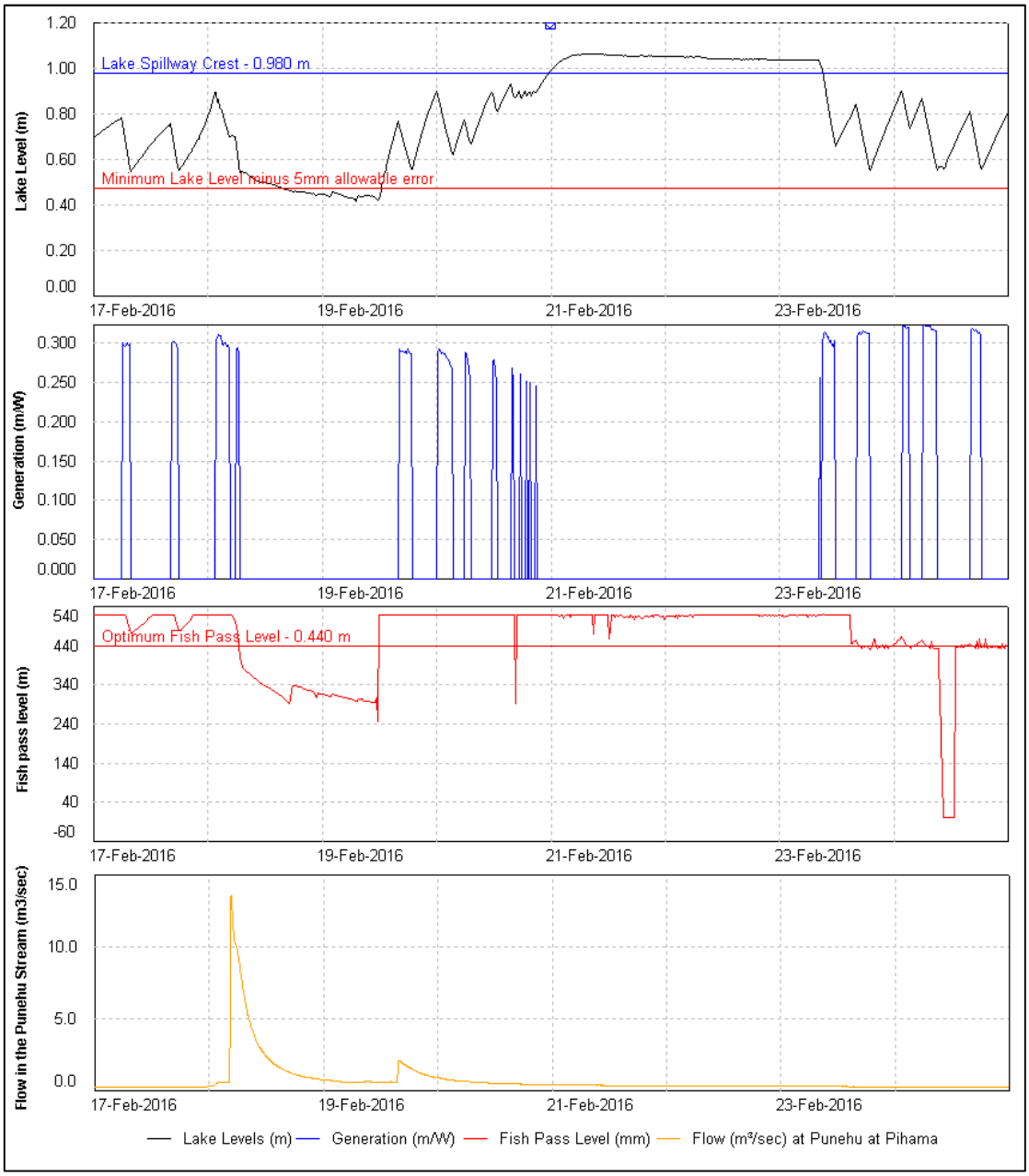

Figure 4 Lake levels, generation figures, fish pass water level and Punehu Stream flow between 17 and 25 February 2016

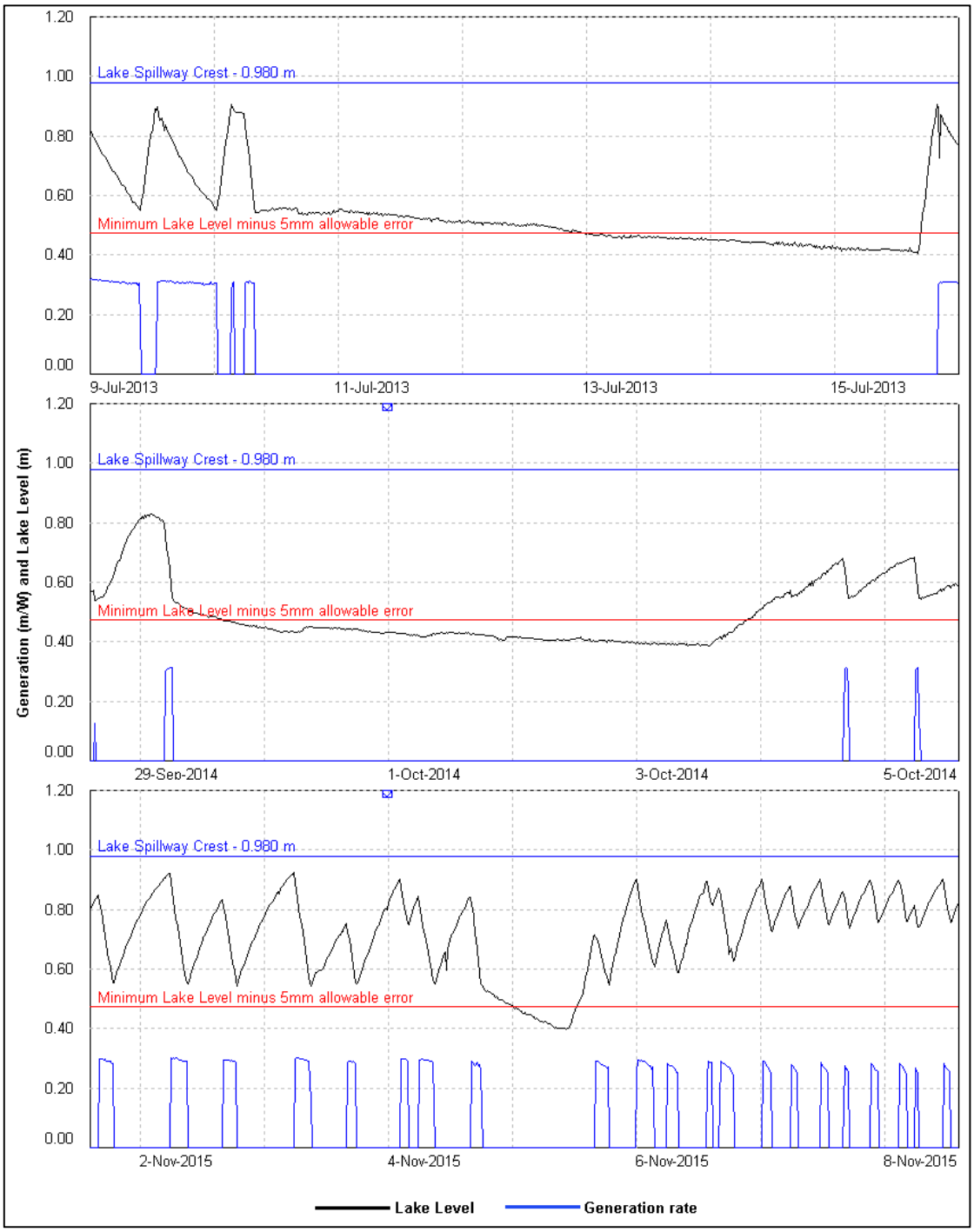

Figure 5 Lake levels at Opunake Lake for three distinct shut down events during flooding

2.1.3.3 Fish pass water levels

The entire system is controlled remotely, with the set up allowing the water level in the fish pass to be managed effectively and water levels adjusted remotely. Fish pass water level data has been supplied to the Council since December 2004. The data for the 2015-2016 period is displayed in Figure 6. As with the generation and lake level data, there are times where there is no data available, including the period of almost three weeks in September 2015. Of more concern is the management of the fish pass water levels, as for the first two thirds of the period, they have been managed quite poorly, often being well in excess of the optimum water level (440 mm). This optimum level has been

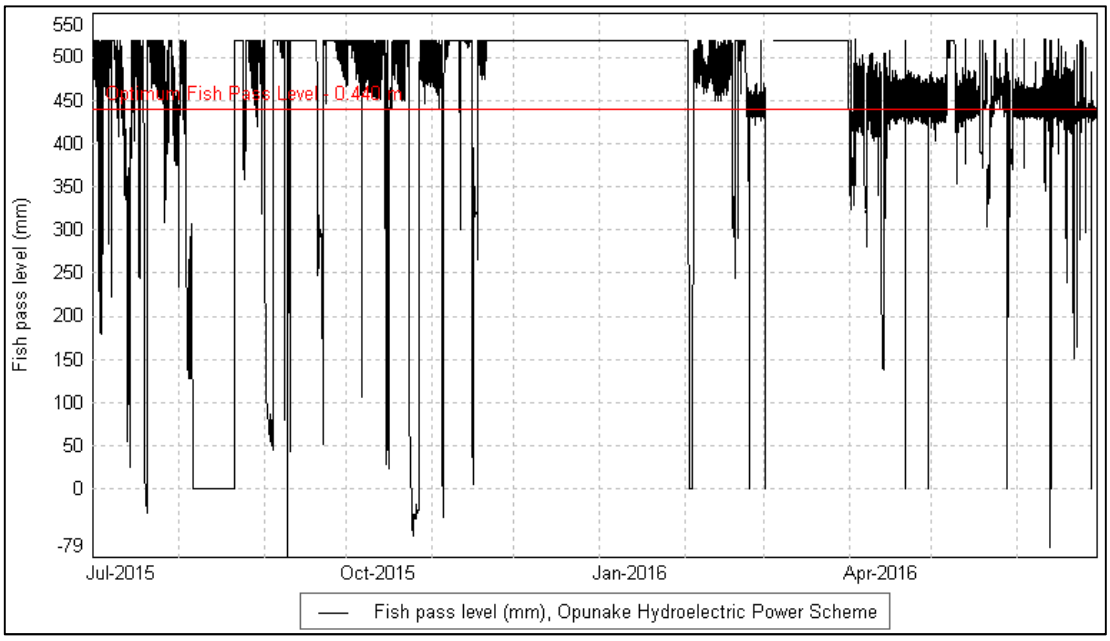

Figure 6 Fish pass water level data, July 2015–June 2016

gauged to reflect the 80 L/s residual flow which is required to flow down the fish pass. For much of the year, the flow in the pass was so high, it exceeded the range of the recorder, evident as a flat line at 520 mm. Although this provided more residual flow than required, it would have restricted fish access into the race. The larger variations in fish pass water levels observed in Figure 6 relate either to an incorrect reading, or to the routine flushing of the canal and fish pass. The data indicates that for only 30% of the time, water levels in the fish pass ranged from 390 mm to 490 mm.

As stated in section 2.1.1, the representative of Opunake Power Limited altered the settings on the fish pass during the inspection of 21 June 2016. The change in water level is clearly evident in Figure 7, with water levels following this change (21 June to 30 June) being between 390 mm to 490 mm 97% of the time, a significant improvement.

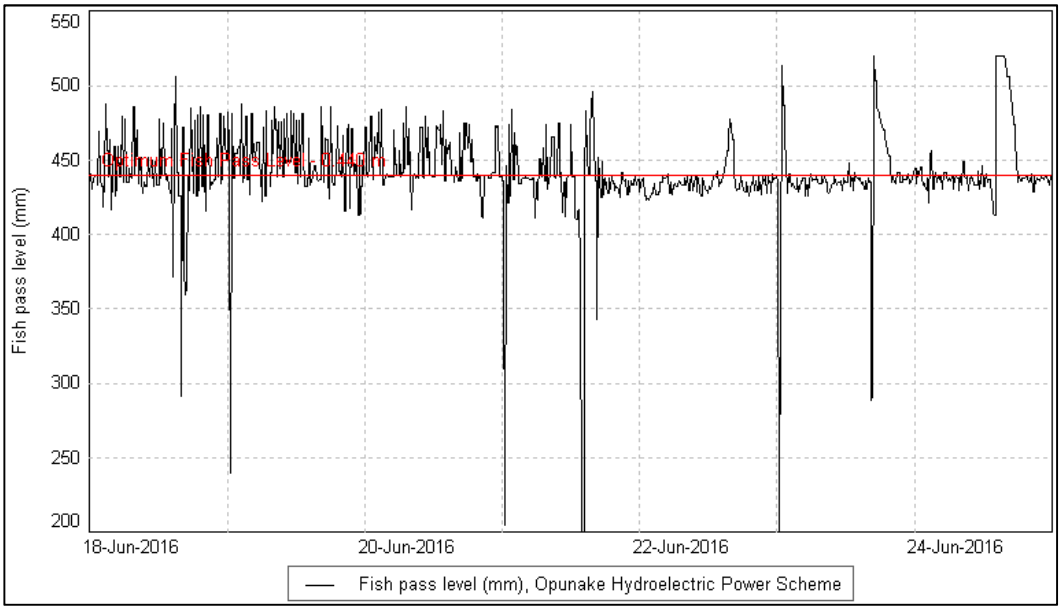

Figure 7 Fish pass water levels between 18 June and 25 June 2016

Figure 4 also shows the relationship between the lake water level and fish pass water level over a nine day period in 2016. The data indicates that during the flood, the intake gates closed, resulting in a significant reduction in flow down the fish pass. However, during the outage, flow down the fish pass was maintained, albeit too high.

For this scheme, it is usual practice that the intake gates close during a flood, and as a consequence there is no flow down the fish pass. At such times there is no fish passage, and although this is technically not compliant with the wording of the consent, this is not treated as non-compliance. This is because sand inundation, which frequently accompanies a flood in the Waiaua River, can severely impact on the operation of the scheme, by jamming equipment such as gates and hydraulic ramps. It is therefore considered unreasonable to require the gates to remain open during floods.

2.1.3.4 Cross-checking of data

Through the review of the data provided, it was clear that there were times when the accuracy of this data was questionable. It is therefore appropriate that the recorded data be checked against the field readings, to allow an assessment of how accurate this data really is. This comparison is presented in Table 2.

The data shows that only two fish pass readings were taken when the water level was below the maximum of 0.52 m. Both readings were taken in the second half of the period, and indicate that the data was being accurately recorded when water levels were low enough.

The lake level data provided more opportunity for comparison, with all the readings being within the range of the level recorder. The readings taken differed from that recorded by between 0 and 47 mm. Some of this variation may be due to the actual time the field reading was taken not being recorded accurately, coupled with a variation in lake level at the time. Lake Opunake is rarely held at a stable level, as the lake is used as storage, meaning when the scheme is operating normally, the lake level is either rising or falling.

Table 2 Field readings of fish pass water levels and lake level compared with recorded levels, 2015-2016

Date	Fish pass level (m)					Lake Level (m)				
	Time	Reading	Time	Recorded	Difference	Time	Reading	Time	Recorded	Difference
16/07/2015	1415	0.58	1420	0.52	0.06	1435	0.84	1430	0.793	0.047
06/10/2015	1450	0.535	1445	0.52	0.015	1350	0.725	1345	0.758	0.033
07/12/2015	1220	0.56	1215	0.52	0.04	1230	0.75	1230	0.71	0.04
15/12/2015	1231	0.537	1230	0.52	0.017	1327	0.736	1330	0.717	0.019
26/01/2016	1315	0.52	1315	0.52	0	1330	0.66	1330	0.648	0.012
25/02/2016	1240	0.432	1245	0.438	0.006	1127	0.704	1130	0.669	0.035
19/04/2016	1221	0.441	1215	0.436	0.005	1122	0.782	1115	0.782	0

Ideally, the maintenance and accuracy of the recorders will be consistent with the National Environmental Standards for water level recording (NEMS, 2013). At the very least, the fish pass and lake level recorders should be maintained to an accuracy of 5%. This 5% should be applied to the range of the recorder, as opposed to applying a 5% error to the actual figure recorded. It is accepted that equipment failure can contribute to the loss of data, but the Company needs to seek a resolution to such a fault as

quickly as possible. The extended periods of missing or erroneous data for the 2015-2016 period are excessive, although this largely relates to the performance of the previous owner. It is hoped that the new owner recognises this as an issue and is proactive in ensuring the continuity and accuracy of the data being recorded.

2.1.4 Stakeholders meeting

As a requirement of special condition 10 of consent 1795-4, an annual meeting is to be held between the Company, officers of the Council, and interested submitters, to discuss any matters relating to the exercise of this consent, particularly the monitoring programme design, implementation and interpretation, in order to facilitate on going consultation.

Over time, since this consent has been granted, the need for this meeting has reduced, as each issue was resolved. There were no pressing issues raised during the 2015-2016 period, although the concerns raised previously by the public relating to the sand inundation of the outlet posing a risk to swimmers and sand inundation of Lake Opunake restricting recreational use remain valid. Hence no stakeholder meeting was held during the 2015-2016 period.

A representative of Opunake Hydro Limited did meet with the Council in April 2016, to discuss the potential installation of a flow monitoring station in the Waiaua River at Wiremu Rd, the improvement of fish passage at the weir and the circumstances around the potential sale of the scheme. Subsequently, the scheme was sold, and the Council then met the representative of the new owner, Opunake Power Limited, at the scheme. With the change in ownership and upcoming renewal of consents, the 2016-2017 period may be a good time for Opunake Power Limited to meet with the stakeholders.

2.1.5 Fish surveys

No fish survey was undertaken in the 2015-2016 period. The last survey, undertaken on 26 February 2014, supported the conclusion that the weir and intake tunnels constitute a barrier to fish passage, and as such, the Company are non-compliant with resource consents 1795-4 and 5581-1.

In a previous monitoring report (TRC, 2014), it was determined that the Company needed to investigate options for remediating fish passage at this location, and it was recommended their investigations include consultation with the Department of Conservation and Fish and Game NZ.

Opunake Hydro Limited had begun investigating the development of a trap and transfer system, which may include assistance from the local school. It is was originally anticipated that this system would be in place by August 2016, although this was delayed due to the sale of the scheme. It is now hoped that the system will be installed during the 2016-2017 period.

2.2 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the Company. During the year matters may arise which require additional activity by the Council, for

example provision of advice and information, or investigation of potential or actual courses of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The incident register includes events where the Company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

In the 2015-2016 period, the Council was required to record an incident in relation to the Company's compliance with resource consent conditions.

This incident related to the recording and provision of data. Special condition 8 of consent 1795-4 requires the following:

The consent holder shall record generation figures [as a measure of abstraction rates] and fish pass water levels at a minimum of 15 minute intervals, and shall make such records available to the Chief Executive, Taranaki Regional Council, at three monthly intervals.

Special condition 3 of consent 1796-3 requires the following:
The consent holder shall monitor Lake Opunake levels, at a minimum of 15 minute intervals and shall make records of such measurements available to the Chief Executive, Taranaki Regional Council, at three monthly intervals.

These conditions clearly stipulate when data is to be provided to the Council, however, Opunake Hydro Limited only provided the full data set for the 2014-2015 period on 20 November 2015. This was well overdue, and therefore not compliant with the requirements of the consents.

In addition, a review of the data revealed numerous gaps, where data was not recorded, was not recorded at the required frequency, or was recorded inaccurately. Not only is it important to provide the data so that the Council can audit the data frequently, but it can prompt the Company to look at and review their data, increasing the chance that they will pick up an issue it if exists. In essence, the Company's performance with regards to the recording of data has been poor, and this appears to have contributed to a slow response to on-site issues. As a result the Company received an abatement notice requiring them to adhere to the aforementioned consent conditions. Although this primarily pertained to their 2014-2015 performance, the enforcement action was taken in the 2015-2016 period and hence is included in this report. Opunake Hydro Limited complied with this abatement notice up to the sale of the scheme, and the new owner, Opunake Power Limited has complied with this condition to date.

3. Discussion

3.1 Discussion of site performance

Although ownership of the scheme changed during the reporting period, the discussion of site performance will not make specific reference to one or other of the two companies, unless relevant.

During the monitoring period under review, the Company has continued maintenance of the system in the face of significant problems caused by the atypical levels of erosion on the mountain within the Waiaua Catchment. Furthermore, localised storms have also impacted on the scheme. The scheme was again impacted by significant sediment impacts, primarily around the weir, where gate controls were compromised at times.

Special condition 2 of consent 1795-4 requires that the Company maintain effective capability for the upstream and downstream passage of native and introduced fish at the diversion weir for the Opunake scheme. During most inspections of the fish pass conducted during the 2015-2016 period, it was noted that the fish pass had excessive flows, although at times this was due to a high lake level, which may have been resolved once generation commenced. Furthermore, the data submitted indicated that flows were excessive for much of the second half of the reporting period. It is accepted that the fish pass will not provide optimum fish passage all of the time, as when the system is flushed, shut down in response to a flood or experiencing a high lake level, the fish pass will have an inappropriate amount of flow. The goal is to provide appropriate flow for the majority of the time. For the 2015-2016 period, it is apparent that this has not been achieved, which represents no improvement from the previous period. However, since the new owner took over, performance improved dramatically.

This discussion primarily relates to the provision of fish passage into the canal, as it has already been determined that there is little fish passage possible through the intake tunnels to the river upstream of the weir. The intake tunnels are considered to constitute a barrier to fish passage because although fish have been seen within the canal on occasions and in the fish pass during maintenance periods, fish surveys in the Waiaua River have not yet demonstrated that inanga are able to pass the weir (fish pass and intake tunnels). Other weak swimming species such as smelt and torrentfish have also been detected upstream of the weir only sporadically and in a much lower abundance compared to downstream, suggesting the weir and associated structures remain a barrier. Inanga and smelt have been observed on previous occasions in the canal however, suggesting that the fish pass up to the canal provides adequate passage when operating well. This was confirmed in the 2013-2014 monitoring period, with two sites surveyed in the Waiaua River and one in the nearby Mangahume Stream concluding that the Waiaua River upstream of the weir is relatively depauperate. The Company is investigating ways to improve fish passage at the scheme, focusing initially on a trap and transfer system.

Special condition 4 of consent 1795-4 requires that 80 L/s of residual flow is provided downstream of the fish pass, and 180 L/s be provided downstream of the canal sluice gate. These flows were found to be compliant during the four hydrological inspections undertaken between 1 July 2015 and 30 June 2016. In addition, a rough visual estimate made during the compliance monitoring inspections also indicated compliance. The Company understands the importance of providing sufficient residual flow, and has

committed to maintaining compliance. Compliance in this area saw strong improvement in the 2013-2014 period, and this has continued right through into the currently reported period.

The Company is required to record generation figures, lake level, sand trap discharges, and fish pass water levels, and provide these records to the Council. All of these records, bar the sand trap discharges, have been taken, and provided to the Council for the monitoring period in question. This data was provided within required timeframes, indicating an improvement in performance since the previous monitoring period.

Resource consent 1797-3 relates to the discharge of sand and silt deposits from a sand trap within the diversion canal, back to the Waiaua River. Special condition 2 of this consent requires that a record of sand trap discharges be kept, and be provided at three monthly intervals for review. Automation work in the 2003-2004 year has meant that sluicing is now done automatically, four times per week for 10 minutes (at night). However, manual sluicing has also been required on occasions when there have been frequent floods and sediment deposition in the canal has been high. These manual sluices have been logged by the Company but were not forwarded to the Council at the time of writing this report.

Special condition 1 of resource consent 1796-3 previously specified minimum water levels within Lake Opunake that the Company must maintain at different times of the day (i.e. the operating ranges for the lake). History showed that the previous consent holder struggled to comply with this consent condition. A change to consent conditions was granted on 16 October 2006, which specified a minimum lake level that was to be maintained at all times. Compliance with this condition during the reported period has been good, in that at no time did generation draw the lake down to at or below this limit. However, at times when the station is shut down due to a flood in the river, water leaked from the lake, resulting in the lake level dropping below this limit. Although this is largely outside of the Company's control, the rate of leakage has increased in the since the 2013-2014 period, and at the end of the currently reported period, a large leak was discovered, where water was escaping from the lake around the lake stop gate when the canal sluice gate was opened. The Company has already addressed this in the 2016-2017 period.

In terms of administrative performance, the recording of data has already been discussed, but has improved in the reported period. Furthermore, there was good contact between the Company and the Council when works were required to clear gravel from upstream of the weir. However, consent 1795-4 requires the annual provision of a revised operational procedure. No such document was received in the 2014-2015 period, or to date.

Overall, the scheme has operated well, and at all times the Company has been proactive and quick to respond to any queries from the Council. There was some improvement in the previous owners administrative performance during the 2015-2016 period, and it is hoped that this will be continued by the new owner.

3.2 Environmental effects of exercise of consents

The main environmental effects from the hydroelectric power scheme are associated with fish passage upstream of the weir in the Waiaua River and the maintenance of residual flows below the weir. Instream works such as gravel extraction, and maintenance of the lake may also produce adverse effects.

It is believed that the weir on the Waiaua River restricts the upstream migration of poor swimming native fish such as smelt and inanga, which are present downstream of the weir. The only migrant fish recorded upstream of the weir in any numbers are longfin eels and redfin bullies. Despite good management of the fish pass, and previous improvement works on providing passage through the tunnels, no inanga and few smelt have been recorded upstream of the weir. The fish ladder that was installed in the intake tunnel in the 2004-2005 period does not seem to have improved passage for any species. Fish passage works undertaken to date have had very limited success with achieving fish passage past the weir and intake tunnels, and as such, the Company needs to investigate options for remediating fish passage at this location. The Company is currently investigating developing a trap and transfer system, that although delayed due to change in ownership of the scheme, will ideally be installed during the 2016-2017 period.

In terms of residual flow, the Company has frequently provided flows above what is required, and this will have gone some way in reducing the adverse effects of the reduced flows in the lower river. A fish survey undertaken in 2014 found large numbers of bullies, which is likely to be a result of the low flow in this reach, as this family of fish prefer lower velocities. However three torrentfish were also recorded, and this species, as their name suggests, prefer swift velocities. This indicates that although the lower flow inevitably reduces the amount of habitat available, it has not necessarily resulted in a loss of species. That said, it does appear that the low flows may result in a reduced abundance of swift water species such as torrentfish.

Gravel extraction in the river has been undertaken in the past to maintain a clear intake, improving the flow of water into the canal. Inspections undertaken in previously reported periods in relation to gravel extraction works have noted only slight discolouration of the river downstream of the works, with the Company operating in a manner that minimises effects during these maintenance works. The Company often diverts the water away from work areas where this is possible and no adverse effects have been noted downstream of instream works when they've been undertaken. These works were undertaken on one occasion during the 2014-2015 monitoring period, with no complaints received or impacts noted. At times vegetation clearance around Lake Opunake, although no such works were undertaken in the reported period. The Company is required to notify the Council prior to undertaking such works, so monitoring can be performed if appropriate.

Although lake levels have been outside consent limits on a number of occasions in the reporting period, these instances were not deemed significant as they were beyond the control of the Company, and no complaints were received by Council about these low lake levels. However, the rate of water loss during station shutdown has increased, with the cause identified at the end of the reported period and resolved during the 2016-2017 period. The hydraulic ram in the fish pass did not operate as well as in previous years, with very high flows noted in the latter half of the monitoring period.

This was also addressed by the new owner near the end of the reported period. The presence of the canal stop gate also helps to maintain higher lake levels during sluicing operations and when the intake is shut, however this is an area where leakage has been noted from time to time.

The issue of sedimentation within the lake has been the main topic of discussion with members of the local community who are concerned at the loss of recreational value in the lake. It is clear that the sand delta is continuing to grow, and the Company has been investigating options to either reduce this sand ingress, or to flush this sand out of the lake. This is taking some time, and as yet no solution has been implemented. It is important that this be resolved, as the recreational value of the lake is an important form of mitigation for the scheme's effects on the local community, including the reduced flows in the lower river.

3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Tables 3 to 10.

Table 3 Summary of performance for Consent **1795-4**

Purpose: ***To take water from the Waiaua River in association with the Opunake hydroelectric power scheme***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Limits of abstraction rates	Inspections, review of data	Yes
2. Exercise of consent in accordance with application	Inspections	Yes
3. Fish passage	Inspections, previous fish surveys	No
4. Residual flows	Inspections/Hydrological gaugings	Yes
5. Review condition – residual flow	Actioned by TRC in 2009 – withdrawn 25 May 2015	N/A
6. Notification condition	Company to notify council	Yes
7. Sluice gate to be closed at certain flows	Inspections	Yes
8. Recording of generation and fishpass levels	Records provided to Council 3 monthly, review of records	Yes (with gaps)
9. Consent holder to review Operational Procedure by 30 June	Not provided	No
10. Meeting with stakeholders annually	Meeting held	No
11. Consent to lapse if not exercised in five years	Consent was exercised	N/A
12. Review Condition	No review sought by either Council or Company under this condition	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		**Good**

N/A = not applicable

Table 4 Summary of performance for Consent **1796-3**

Purpose: ***To take and use water from Lake Opunake for hydroelectric power generation***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Defines lake levels within which the consent holder must operate	Inspections, records provided to Council 3 monthly	Yes
2. Must maintain a constant flow down fish pass	Inspections, records provided to Council – Note, the Company is not required to provide flow when the scheme is shut down in response to flooding or for maintenance.	Yes
3. Monitor lake levels and forward records to Council 3 monthly	Records provided to Council	Yes (with gaps)
4. Maintain a staff gauge at Lake Opunake	Inspection	Yes
5. Review of consent	No review sought by Council	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		**Good**

N/A = not applicable

Table 5 Summary of performance for Consent **1797-3**

Purpose: ***To discharge sand and silt deposits from a diversion canal sand trap via a spillway to the Waiaua River***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Supply sediment management protocol within 3 months of granting consent	Received by Council in September 2001	Yes
2. Record sand trap discharges and supply to Council	Automated discharges 4 times/week; Manual discharges logged but not supplied to Council	No
3. Adopt best practicable option	Inspections	Yes
4. Option for change or cancellation of conditions	No review sought by either Council or Company	N/A
5. Review of consent	No review sought by Council	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		**Good**

N/A = not applicable

Table 6 Summary of performance for Consent **4563-2**

Purpose: ***To erect, place and maintain an outfall structure in the coastal marine area on the Opunake Beach foreshore***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Structure shall be maintained in accordance with application	Inspections	Yes
2. Notify Council prior to and following	No maintenance work undertaken	N/A

Purpose: *To erect, place and maintain an outfall structure in the coastal marine area on the Opunake Beach foreshore*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
maintenance works		
3. Adopt best practicable option	No maintenance work undertaken	N/A
4. Disturbance minimised during works	No maintenance work undertaken	N/A
5. Structure shall be removed if no longer required	Structure still in use	N/A
6. Option for change or cancellation of conditions	No review sought by either Council or Company	N/A
7. Review of consent	No review sought by Council	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 **4658-1**

Purpose: *To disturb the bed of Lake Opunake by removing reeds and flaxes from the edge of the lake*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Consent holder to adopt best practical option	Inspections	N/A
2. Works to be undertaken in accordance with application	Inspections	N/A
3. Notify Council prior to works	No works undertaken	N/A
4. Defines time of year works can be undertaken in	No works undertaken	N/A
5. Minimise discharge or placement of silt/organics/debris into lake	Inspections	N/A
6. Remove all plant trimmings during work	Inspections	N/A
7. Place removed material so it does not enter lake	Inspections	N/A
8. Consent to lapse if not exercised in five years	Consent was exercised	N/A
9. Review Condition	No review sought by Council	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**N/A**
Overall assessment of administrative performance in respect of this consent		**N/A**

N/A = not applicable (consent not exercised in 2015-2016)

Table 8 Summary of performance for Consent **4744-2**

Purpose*: To discharge water from hydroelectric power generation through two marine outfall pipes into the Tasman Sea*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Discharge rate limit	Review of data	Yes
2. Discharge of contaminated water shall not occur	Inspections	Yes
3. Installation of warning signs	Inspections	Yes
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **High**

N/A = not applicable

Table 9 Summary of performance for Consent **5581-1**

Purpose: *To dam the Waiaua River in association with the Opunake hydroelectric power scheme*		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Structure shall be maintained in accordance with application	Inspections	Yes
2. Maintain and operate a safe dam	Inspections	Yes
3. Maintain a fish pass	Inspections, fish surveys	No
4. Notify Council prior to and following maintenance works which involve disturbance of the bed	No works undertaken	Yes
5. Adopt best practicable option	No works undertaken	Yes
6. During works, bed disturbance shall be kept to a minimum and reinstated	No works undertaken	Yes
7. Defines times when disturbance of river bed may be undertaken	Notification and inspections	Yes
8. Removal of structure when no longer required	Structure still in use	N/A
9. Option for change or cancellation of conditions	No review sought by either Council or Company	N/A
10. Review of consent	No review sought by Council	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**Good** **High**

N/A = not applicable

Table 10 Summary of performance for Consent **5692-1**

Purpose: ***To disturb the bed of the Waiaua River by removing sediment build-up upstream of a weir***		
Condition requirement	**Means of monitoring during period under review**	**Compliance achieved?**
1. Notification prior to and following disturbance	No works undertaken	Yes
2. Disturbance shall be undertaken generally in accordance with application documentation	No works undertaken	Yes
3. Defines times when disturbance of river bed may be undertaken	No works undertaken	Yes
4. Adopt best practicable option	No works undertaken	Yes
5. During works, bed disturbance shall be kept to a minimum and reinstated	No works undertaken	Yes
6. Maintain a record of disturbance activity and forward to Council annually	No works undertaken	No
7. Placement of sediment downstream of weir only with Council permission	No works undertaken	Yes
8. Option for change or cancellation of conditions	No review sought by either Council or Company	N/A
9. Review of consent	No review sought by Council	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		**High** **Good**

N/A = not applicable (consent not exercised in 2015-2016)

During the year, the Company demonstrated a 'good' level of environmental and administrative performance with the resource consents as defined in Section 1.1.4. During the year under review, management of residual flows was very good, with flows often exceeding the minimum required by some margin. However, the fact that fish passage remains an issue is the principle reason that certain consents only attained a 'good' rating. The area where performance improved during this period was largely administrative. The data provided contained less erroneous data, and was provided at appropriate intervals. However, it still contained some large gaps, and as such needs further attention.

3.4 Recommendations from the 2014-2015 Annual Report

In the 2014-2015 Annual Report, it was recommended:

1. THAT monitoring of Opunake Hydro Limited's hydroelectric power scheme on the Waiaua River continues at the same level as in 2014-2015.

2. THAT Opunake Hydro Limited has completed works to improve fish passage by 1 August 2016.

3. That Opunake Hydro Limited improves performance in relation to the recording and provision of data.

Recommendation 1 is being implemented by the Council in the 2016-2017 monitoring period, and recommendation 3 has been implemented by the Company. However, there have been some delays for the Company in implementing recommendation 2.

3.5 Alterations to monitoring programmes for 2016-2017

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

- the extent of information made available by previous authorities;
- its relevance under the RMA;
- its obligations to monitor emissions/discharges and effects under the RMA; and
- to report 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 emitting to the atmosphere/discharging to the environment.

It is proposed that for 2016-2017 the monitoring programme be expanded to include additional inspections pertaining to the fish trap and transfer system. It is recommended that four inspections be undertaken, with two coinciding with regular site inspections. The inspections of the fish passage systems should target the key times for fish migration, primarily spring (whitebait) and summer (elvers), although regard should be given to checking it during the trout and lamprey migration times (autumn and winter respectively).

4. Recommendations

1. THAT monitoring of consented activities at the Opunake Power Station in the 2016-2017 year be amended from that undertaken in 2015-2016, by adding four inspections of the fish transfer system.

2. THAT Opunake Power Limited completes the works to improve fish passage by the end of the 2016-2017 monitoring period (30 June 2017).

Glossary of common terms and abbreviations

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

Al*	Aluminium.
As*	Arsenic.
Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
cfu	Colony forming units. A measure of the concentration of bacteria usually expressed as per 100 millilitre sample.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Cu*	Copper.
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m^3s^{-1}).
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
E.coli	Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Ent	Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample.
F	Fluoride.
FC	Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
$g/m^2/day$	grams/$metre^2$/day.
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.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point.
NH_4	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH_3	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NO_3	Nitrate, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
Pb*	Lead.
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.
PM_{10}	Relatively fine airborne particles (less than 10 micrometre diameter).
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.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.
UI	Unauthorised Incident.

Zn* Zinc.

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

For further information on analytical methods, contact the Council's laboratory.

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Appendix I

Resource consents held by Opunake Power Limited

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

Water Permit

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

Name of Consent Holder:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	13 October 2006
Commencement Date:	13 October 2006

Conditions of Consent

Consent Granted:	To take water from the Waiaua River in association with the Opunake hydro electric power scheme
Expiry Date:	1 June 2018
Site Location:	South Road (State Highway 45), Opunake
Legal Description:	Lot 1 SS6265 Sib Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674582E-5632132N
Catchment:	Waiaua

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

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The take authorised by this consent shall be limited to a maximum of 3900 litres per second.

2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 2661. In the case of any contradiction between the documentation submitted in support of application 2661 and the conditions of this consent, the conditions of this consent shall prevail.

3. The consent holder shall maintain a fish pass that allows the passage of native fish, juvenile trout and adult trout to habitat upstream of the weir at SH45.

4. The consent holder shall ensure that a residual flow of not less than 80 L/s as measured in the Waiaua River immediately downstream of the fish pass, and not less than 180 L/s as measured in the Waiaua River immediately downstream of the canal sluice gate discharge, is maintained at all times.

5. In accordance with section 128 of the Resource Management Act 1991, the Taranaki Regional Council shall review during the month of June 2009 and/or June 2012, the appropriateness of a gradual increase in the residual flow specified in condition 4 of this consent.

6. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing at least seven days prior to the exercise of this consent.

7. The sluice gate/bywash shall only be closed when the level of the Waiaua River in receding flows falls below a level of 100 mm above the intake weir crest.

8. The consent holder shall record generation figures [as a measure of abstraction rates] and fish pass water levels at a minimum of 15-minute intervals, and shall make such records available to the Chief Executive, Taranaki Regional Council, at three monthly intervals.

9. The consent holder shall review the Operational Procedure and forward this to the Chief Executive, Taranaki Regional Council by 30 June of each year. The scheme shall be operated in accordance with this Operational Procedure.

10. The consent holder and staff of the Taranaki Regional Council shall meet as appropriate, and at least once per year, with interested submitters to the consent, to discuss any matter relating to the exercise of this resource consent, particularly the monitoring programme design, implementation and interpretation, in order to facilitate ongoing consultation.

11. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2009 and/or June 2012, 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.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

Water Permit

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

Name of Consent Holder:	Opunake Power Limited PO Box 91826 Auckland 1142	
Decision Date (Change):	16 October 2006	
Commencement Date (Change):	16 October 2006	(Granted: 21 March 2001)

Conditions of Consent

Consent Granted:	To take and use water from Lake Opunake for hydroelectric power generation in association with the Opunake hydroelectric power scheme
Expiry Date:	1 June 2018
Site Location:	Lake Opunake, Layard Street, Opunake
Legal Description:	Lot 1 SS6265 Sub Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674033E-5631971N
Catchment:	Waiaua

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

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 & 2 (changed)

1. The consent holder shall maintain levels within Lake Opunake in the following manner:

a) the lake level shall not be lowered more than 480 mm (equivalent to 500 mm on lake staff gauge) below the lake spillway crest (980 mm on lake staff gauge);

b) lowering the lake below this level for maintenance (i.e., weed control, de-silting or other operational reasons) shall be done only with the prior written approval of the Chief Executive, Taranaki Regional Council.

2. Notwithstanding special condition 1 the exercise of this consent shall be undertaken to ensure there is a constant flow through the fish pass.

Conditions 3 & 4 (unchanged)

3. The consent holder shall monitor Lake Opunake levels, at a minimum of 15 minute intervals and shall make records of such measurements available to the Chief Executive, Taranaki Regional Council, at three monthly intervals.

4. The consent holder shall install and maintain a staff gauge at Lake Opunake to the satisfaction of the Chief Executive, Taranaki Regional Council.

Condition 5 (changed)

5. In accordance with section 128 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 2009 and/or June 2012, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this 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.

Transferred at Stratford on 10 March 2016

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:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	21 March 2001
Commencement Date:	21 March 2001

Conditions of Consent

Consent Granted:	To discharge sand and silt deposits from a diversion canal sand trap via a spillway to the Waiaua River in association with the Opunake hydroelectric power scheme
Expiry Date:	1 June 2018
Site Location:	Lake Opunake, Layard St, Opunake
Legal Description:	Lot 1 SS6265 Sub Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674248E-5631944N
Catchment:	Waiaua

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

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1) The consent holder shall supply a sediment management protocol within three months of the granting of this consent for the written approval of the Chief Executive, Taranaki Regional Council.

2) The consent holder shall maintain a record of any sand trap discharges for supply to the Chief Executive, Taranaki Regional Council, at three monthly intervals.

3) The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the adverse effect of the discharge.

4) The consent holder may apply to the Taranaki Regional Council for a change or cancellation of the conditions of their consent, in accordance with section 127(1)(a) of the Resource Management Act 1991, to take account of operational requirements or the results of the monitoring.

5) In accordance with section 128 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 December 2003 and/or June 2006 and/or June 2012, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it is not appropriate to deal with at the time.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

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

Name of Consent Holder:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	21 March 2001
Commencement Date:	21 March 2001

Conditions of Consent

Consent Granted:	To erect, place and maintain an outfall structure in the coastal marine area on the Opunake Beach foreshore in association with the Opunake hydroelectric power scheme
Expiry Date:	1 June 2018
Site Location:	Opunake Beach, Beach Road, Opunake
Legal Description:	Lot 1 SS6265 Sub Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1673748E-5632044N
Catchment:	Tasman Sea

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

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1) The structure authorised by this consent shall be maintained generally in accordance with the information submitted in support of the application and to ensure that the conditions of this consent are met.

2) The consent holder shall notify the Taranaki Regional Council, at least 48 hours prior to the commencement and upon completion of, the any subsequent maintenance works which would involve disturbance of, deposition to, or discharges to the coastal marine area.

3) That during any maintenance works the consent holder shall adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of silt or other contaminants and to avoid or minimise the disturbance of the coastal marine area and any effects to water quality.

4) That during any maintenance works the consent holder shall ensure that the area and volume of disturbance shall so far as is practicable, be minimised and any areas which are disturbed, shall so far as is practicable be reinstated.

5) The structure authorised by this consent shall be removed and the area reinstated, if and when it is no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to the structures removal and reinstatement.

6) The consent holder may apply to the Taranaki Regional Council for a change or cancellation of the conditions of their consent, in accordance with section 127(1)(a) of the Resource Management Act 1991, to take account of operational requirements or the results of the monitoring.

7) In accordance with section 128 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 December 2003 and/or June 2006 and/or June 2012, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it is not appropriate to deal with at the time.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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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:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	22 March 2006
Commencement Date:	22 March 2006

Conditions of Consent

Consent Granted:	To disturb the bed of Lake Opunake in the Waiaua catchment by removing reeds and flaxes from the edge of the lake
Expiry Date:	1 June 2024
Review Date(s):	June 2018
Site Location:	Lake Opunake, Layard Street, Opunake
Legal Description:	Sec 46-49 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674148E-5632044N
Catchment:	Waiaua
Tributary:	Opunake Lake

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

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 4057. In the case of any contradiction between the documentation submitted in support of application 4057 and the conditions of this consent, the conditions of this consent shall prevail.

3. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing at least seven days prior to commencing work.

4. That works shall only be undertaken during the period 1 May to 31 October.

5. That the consent holder shall observe every practicable measure to minimise the discharge or placement of silt and/or organics and/or debris into the lake.

6. That the consent holder shall collect and remove all plant trimmings and other floatable material produced during the works.

7. That where removed material is placed on or near the banks of the lake, this is done in a manner which avoids decaying vegetation or leaching into the lake or the Waiaua River.

8. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2012 and/or June 2018, 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.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management

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

Name of Consent Holder:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	15 November 2012
Commencement Date:	15 November 2012

Conditions of Consent

Consent Granted:	To discharge water from hydroelectric power generation through two marine outfall pipes into the Tasman Sea
Expiry Date:	1 June 2018
Site Location:	Beach Road, Opunake
Legal Description:	Sec 48 Opunake Suburban (Discharge source) Adjacent to Sec 1 Blk VII TN of Opunake (Discharge site)
Grid Reference (NZTM)	1673815E-5631907N
Catchment:	Tasman Waiaua
Tributary:	Opunake Lake

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 [the Council] all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

Special conditions

1. The rate of discharge shall not exceed 3900 litres per second.

2. There shall be no discharge of contaminated water as a result of the exercise of this consent.

3. The consent holder shall install and/or maintain signage at the site of discharge warning the public that there may be discharge of water from the outfall structures at any time.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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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:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	21 March 2001
Commencement Date:	21 March 2001

Conditions of Consent

Consent Granted:	To dam the Waiaua River in association with the Opunake hydroelectric power scheme
Expiry Date:	1 June 2018
Site Location:	South Road (State Highway 45), Opunake
Legal Description:	Lot 1 SS6265 Sib Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674548E-5632144N
Catchment:	Waiaua

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

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The weir authorised by this consent shall be maintained generally in accordance with the information submitted in support of the application and to ensure that the conditions of this consent are met.

2. It is the responsibility of the consent holder to maintain and operate a safe dam and the Taranaki Regional Council accepts no responsibility in this regard.

3. The consent holder shall maintain a fish pass that allows the passage of native fish, juvenile trout and adult trout.

4. The consent holder shall notify the Taranaki Regional Council, at least 48 hours prior to the commencement and upon completion of, the any subsequent maintenance works which would involve disturbance of, or deposition to, the riverbed or discharges to water.

5. That during any maintenance works the consent holder shall adopt the best practicable option, as defined in the section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of silt or other contaminants into water or onto the riverbed and to avoid or minimise the disturbance of the riverbed and any adverse effects on water quality.

6. That during any maintenance works the consent holder shall ensure that the area and volume of riverbed disturbance shall so far as is practicable, be minimised and any areas which are disturbed, shall so far as is practicable be reinstated.

7. That any disturbance of parts of the riverbed covered by water and/or any works which may result in downstream discolouration shall be undertaken only between 1 November and 30 April, except where this requirement is waived in writing by the Chief Executive, Taranaki Regional Council.

8. The structure[s] authorised by this consent shall be removed and the area reinstated, if and when the structure[s] are no longer required. The consent holder shall notify the Taranaki Regional Council at least 48 hours prior to structure[s] removal and reinstatement.

9. The consent holder may apply to the Taranaki Regional Council for a change or cancellation of the conditions of their consent, in accordance with section 127(1)(a) of the Resource Management Act 1991, to take account of operational requirements or the results of the monitoring

10. In accordance with section 128 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 December 2003 and/or June 2006 and/or June 2012, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it is not appropriate to deal with at the time.

Transferred at Stratford on 10 March 2016

For and on behalf of
Taranaki Regional Council

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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:	Opunake Power Limited PO Box 91826 Auckland 1142
Decision Date:	21 March 2001
Commencement Date:	21 March 2001

Conditions of Consent

Consent Granted:	To disturb the bed of the Waiaua River by removing sediment build-up upstream of a weir for the purpose of maintaining the Opunake hydroelectric scheme intake
Expiry Date:	1 June 2018
Site Location:	South Road (State Highway 45), Opunake
Legal Description:	Lot 1 SS6265 Sub Sec 47 Borough of Opunake Blk IX Opunake SD
Grid Reference (NZTM)	1674548E-5632144N
Catchment:	Waiaua

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

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1) The consent holder shall notify the Taranaki Regional Council in writing at least 72 hours prior to the commencement and upon completion of any disturbance licensed by this consent.

2) The disturbance authorised by this consent shall be undertaken generally in accordance with the documentation submitted in support of the application and to ensure the conditions of this consent are met.

3) Any disturbance of parts of the riverbed covered by water and/or any works which may result in downstream discolouration shall be undertaken only between 1 December and 30 April, except where this requirement is waived in writing by the Chief Executive, Taranaki Regional Council.

4) The consent holder shall adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to avoid or minimise the discharge of silt or other contaminants into water or onto the riverbed and to avoid or minimise the disturbance of the riverbed and any adverse effects on water quality.

5) The consent holder shall ensure that the area and volume of riverbed and bank disturbance shall, so far as is practicable, be minimised and any areas which are disturbed shall, so far as is practicable, be reinstated.

6) The consent holder shall maintain a record of all disturbance activity including, timing and duration of disturbance activities and volumes of sediment removed, and shall forward this to the Chief Executive, Taranaki Regional Council on an annual basis, by 31 May each year.

7) The placement of sediment downstream of the weir for the purposes of maintaining clearance at the intake gates shall only be undertaken upon written approval of the Chief Executive, Taranaki Regional Council, and in accordance with special conditions 3, 4, and 5.

8) The consent holder may apply to the Taranaki Regional Council for a change or cancellation of the conditions of their consent, in accordance with section 127(1)(a) of the Resource Management Act 1991, to take account of operational requirements or the results of the monitoring.

9) In accordance with section 128 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 December 2003 and/or June 2006 and/or June 2012, for the purpose of ensuring that the conditions adequately deal with the environmental effects arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it is not appropriate to deal with at the time.

Transferred at Stratford on 1 April 2016

For and on behalf of
Taranaki Regional Council

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A D McLay
Director - Resource Management