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Report To: Operations, Monitoring and Regulation Committee

Meeting Date: 20 June 2013

Report From: Nick Zaman, Pollution Prevention Manager

Hydro-Electric Schemes Compliance Report June 2010 - June 2013

Executive Summary

This report provides an overview of the number and location of hydro-electric consents within the Bay of Plenty Region as well as the various levels of compliance for these consents.

There are currently 34 active resource consents for six major schemes within the region and during the June 2010-2013 reporting period all of these sites had a high level of compliance.

This report does not cover consents for small schemes as those monitoring and reporting dates fall outside this reporting period.

1 Recommendations

That the Operations, Monitoring and Regulation Committee under its delegated authority:

- 1 Receives the report, Hydro-Electric Schemes Compliance Report June 2010 - June 2013.**

2 Introduction

The Bay of Plenty Regional Council has a responsibility under the Resource Management Act 1991 to monitor consented activities, including hydro-electric consents. Under the Compliance and Impact Monitoring Policy 2001 all hydro dams with significant water resource impacts are monitored on a yearly basis and reported on a three yearly cycle. All other dams are monitored and reported on a five yearly cycle.

This report has been prepared to outline the level of compliance for 34 resource consents for six current hydro-electric schemes in the Bay of Plenty region.

3 Method of compliance monitoring

Site inspections have been undertaken and compliance field sheets have been completed. The purpose of these inspections and field sheets is to assess

compliance with the consent conditions as well as providing a report to the consent holder outlining any issues that need addressing and acknowledging any good work that has been undertaken. This enables the consent holder to gauge their progress and to identify any matters that require attention.

Some of these consents require that the consent holder submit self-monitoring data to the Bay of Plenty Regional Council and the monitoring officer assesses the results in conjunction with the consent conditions and where appropriate compliance with compensation and recreational release flows.

4 **Site description and compliance issues**

An overview of each hydro-electric consent, the consent conditions, a site summary and details of any compliance issues including an overall compliance rating is provided in Appendix 1.

There were no compliance issues at any of the sites.

5 **Compliance ratings**

Each site has been given an overall compliance rating which takes into account the sites performance over the whole reporting period. Sites are rated as follows:

- High: indicates compliance with all or most consent conditions with non-compliance being of a low risk to the environment.
- Moderate: indicates compliance with most conditions and the environmental consequence of non-compliance is deemed to be minor, but has the potential to result in moderate environmental effects.
- Poor: indicates a failure to comply with a number of consent conditions and/or the consequence of non-compliance is deemed to be significant.

Table 1: Summary of Compliance Ratings for Schemes - June 2010 – 2013 monitoring period

Scheme June 2010 - June 2013	Total consents	High	Moderate	Poor
Trustpower Limited - Kaimai	12	12	0	0
Trustpower Limited - Matahina, Rangitaiki	5	5	0	0
Trustpower Limited - Wheao, Rangitaiki	6	6	0	0
Nova Energy - Aniwhenua, Rangitaiki	5	5	0	0

Karaponga Hydro Limited - Karaponga	4	4	0	0
Ngatuhua Lodge Outdoor Education Soc. Inc.– Ngatuhua Lodge	2	2	0	0

6 Summary of 2010 – 2013 monitoring period

- The amount of consents that relate to major hydro-electric schemes total 34.
- One hundred percent of the 34 sites have a high rating.
- No hydro schemes operating within the 2010 to 2013 cycle received ratings of moderate or poor.
- No abatement notices or infringement notices were issued for the 2010 to 2013 period.
- No prosecutions have been undertaken during this period.
- Any reported non-compliance by consent holders has been evaluated and summarised as not being a breach of the conditions and has been attributed to natural conditions such as lack of rainfall in these areas.

7 Conclusion

- It is satisfying to see a high level of compliance for the major hydro-electric schemes in the Bay of Plenty Region.
- The Regional Council have built up good relationships with the consent holders and their representatives which makes it easier to solve problems and work through certain issues that may arise.

Mike Caldwell
Pollution Prevention Officer Mount

for Pollution Prevention Manager

11 June 2013

Appendix 1

Hydro-electric consents - Site descriptions and compliance June 2010 – June 2013

1 Trustpower Limited: Kaimai Scheme

1.1 Trustpower Limited: Kaimai Scheme – Consent 20195

Purpose: To dam, divert and discharge water at the Opuiaki Stream, Tauwharawhara Stream, Ngatuhua Stream, Awakotuku Stream, Mangaonui Stream, Omanawa River, Ruakaka Stream, Mangapapa River, and Dam Scotts Dry Gully, and to discharge up to 14.2 cubic metres per second water flow to generate electricity through the tunnel 6 outlet turbine power station and use up to 14.2 cubic metres of water per second to generate electricity in the Lloyd Mandeno Power Station.

Condition Details: Inspection and maintenance of warning signs, safety booms, intake screens, compensation flows, fish ladders and passes, vegetation clearance and water levels.

Compliance Issues: Nil. Rating: High.

Site Summary: On the 8 February 2010 a change was granted to the consent increasing the discharge through tunnel 6 from 12 to 14.2 cubic metres per second. At the last site inspections in 2011, 2012 and 2013 apart from maintenance matters relating to flashboards and walkways after flood events all other requirements were being completed and structures were in place.

All monitoring results have been submitted and are up to date.

In 2010 and 2013 the Kaimai stakeholder meetings were held which includes representation from key stakeholders involved with the scheme.

1.2 Trustpower Limited: Kaimai Scheme – Consent 20011

Purpose: To dam the Mangapapa River to form a reservoir, and divert and take the water from the reservoir for electricity generation at the Lower Mangapapa power house and to discharge the surplus water into the Mangapapa River.

Condition Details: Inspection and maintenance of warning signs, safety booms, intake screens, compensation flows, and water levels and operational records.

Compliance Issues: Nil. Rating: High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and structures were in place.

1.3 Trustpower Limited: Kaimai Scheme – Consent 23297

Purpose: To dam, divert and discharge water at the Mangakarengorengo River, Mangapapa River, Tributary One (Mairoa Stream), Tributary Two, Tributary Three, and to use up to 28 cubic metres per second water flow to generate electricity at the Ruahihi Power Station.

Condition Details: Inspection and maintenance of warning signs, safety booms, intake screens, compensation flows, fencing maintenance, vegetation clearance, and water levels.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and structures were in place.

1.4 **Trustpower Limited: Kaimai Scheme – Consent 64716**

Purpose: To discharge aquatic herbicides, (Diquat and Glyphosate) to Lake McLaren, and to air over Lake McLaren to control submerged weeds and willows in the lake.

Condition Details: The consent holder has notification conditions which include several parties. They have monitoring and reporting conditions relating to dissolved oxygen and temperature profiles at various locations. They also have yearly reports to be submitted.

Compliance Issues: Nil. **Rating:** High.

Site Summary: In 2008 it was agreed that the application of Glyphosate on willows is permitted pursuant to the Regional Water and Land Plan. Spraying was completed in January 2010. It is envisaged that spraying will be completed in March 2013. The annual report has been submitted for 2010 and 2012. The next report is due in July 2013.

1.5 **Trustpower Limited: Kaimai Scheme – Consent 64717**

Purpose: To discharge aquatic herbicides, (Diquat) to Lloyd Mandeno Canal, and to air over Lloyd Mandeno Canal to control submerged weeds in the canal.

Condition Details: The consent holder has notification conditions to the Regional Council. There is monitoring and reporting conditions that concentrate on visual inspections and the submission of a report and plan by the 31 July each year.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Spraying was completed in March 2010. It is envisaged that spraying will be completed in March 2013. The annual report has been submitted for 2010 and 2012. The next report is due in July 2013.

1.6 **Trustpower Limited: Kaimai Scheme – Consent 64718**

Purpose: To discharge aquatic herbicides, (Diquat) to the Ruahihi Canal, and to air over the Ruahihi Canal to control submerged weeds in the canal.

Condition Details: The consent holder has signage, and notification conditions that include several parties. There is monitoring and reporting conditions that concentrate on visual inspections and the submission of a report and plan by the 31 July each year.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Spraying was completed in March 2010, March 2011, and March 2012. It is envisaged that spraying will be completed in March 2013.

The annual report has been submitted for 2010, 2011 and 2012. The next report is due in July 2013.

1.7 **Trustpower Limited: Kaimai Scheme – Consent 50216**

Purpose: To construct a new intake structure and remove the existing structure in the Ngatuhua Stream and reconstruct the embankment of the Ngatuhua Canal.

Condition Details: The consent holder has a maintenance condition and notification to the Regional Council prior to maintenance works commencing.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

1.8 **Trustpower Limited: Kaimai Scheme – Consent 50396**

Purpose: To construct a new spillway channel and control gate on McLarens Lake dam.

Condition Details: The consent holder has a maintenance condition and notification to the Regional Council prior to maintenance works commencing.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

1.9 **Trustpower Limited: Kaimai Scheme – Consent 61766**

Purpose: To excavate sediment and debris from behind the Ngatuhua intake weir in the Ngatuhua Stream.

Condition Details: The consent holder has a notification condition to contact the Regional Council five days prior to works commencing. Works are to be undertaken in December, January, or February of any year.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

1.10 **Trustpower Limited: Kaimai Scheme – Consent 63409**

Purpose: To place and use an access way over the bed of Lake Mangaonui.

Condition Details:

The consent holder has a maintenance condition and keeping records of all maintenance completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

1.11 Trustpower Limited: Kaimai Scheme – Consent 65788

Purpose: To install gabion baskets as an erosion protection in the bed and bank of the Mangaonui stream.

Condition Details: The consent holder has a maintenance condition.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

1.12 Trustpower Limited: Kaimai Scheme – Consent 65843

Purpose: To remove a rubber spillway dam and replace it with hydraulic steel gates at Lake Mangaonui.

Condition Details: The consent holder has a maintenance condition and keeping records of all maintenance completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: At the last site inspections in 2011, 2012 and 2013 all requirements were being completed and no maintenance had been completed.

2 Trustpower Limited: Matahina, Rangitaiki Scheme

2.1 Trustpower Limited: Matahina, Rangitaiki Scheme – Consent 22195

Purpose: To dam the Rangitaiki River to form a reservoir known as Lake Matahina, take and use up to 160 cubic metres of water per second from Lake Matahina for the purpose of generating electricity at the Matahina Power Station, and discharge from Lake Matahina and the Power Station to the Rangitaiki River.

Condition Details: Inspection of warning signs, safety booms, intake screens, compensation flows, elver passes, monitoring river flow and erosion, reporting and water levels.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013 and all structures were in place as required. In 2006 an alarm was fitted to identify reservoir level exceedance. Biennial monitoring reports were received for 2010 and 2012 and the next is due in August 2014.

All monitoring results have been submitted and are up to date.

This consent expired on 30 November 2009. A replacement application has been submitted and is still before the Environment Court. Therefore the consent holder can continue to operate under the existing consent.

2.2 Trustpower Limited: Matahina, Rangitaiki Scheme – Consent 63388

Purpose: To use and maintain two existing boat ramps and a jetty on Lake Matahina.

Condition Details: The consent holder has a maintenance condition including the recording of any maintenance work completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013 and there were no issues detected.

2.3 **Trustpower Limited: Matahina, Rangitaiki Scheme – Consent 60102**

Purpose: To disturb the bed of, and to erect and use a jetty in the bed of Lake Matahina.

Condition Details: The consent holder has a maintenance condition.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013 and there were no issues detected.

2.4 **Trustpower Limited: Matahina, Rangitaiki Scheme – Consent 50880**

Purpose: To disturb the bed of, and to erect and use an access ramp in the bed of the Rangitaiki River.

Condition Details: The consent holder has a maintenance condition.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013 and there were no issues detected.

2.5 **Trustpower Limited: Matahina, Rangitaiki Scheme – Consent 63299**

Purpose: To carry out small scale earthworks and remove, place and use a structure in the Rangitaiki River.

Condition Details: The consent holder has a notification condition and reporting condition to the Regional Council of any works completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: These works were to repair erosion on the banks of the Rangitaiki River below the Matahina Dam caused by the July 2004 floods. Site inspections were completed in 2012 and 2013 and there were no issues detected.

3 **Trustpower Limited: Wheao, Rangitaiki Scheme**

3.1 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 20253**

Purpose: To dam, divert and discharge water at the Rangitaiki River, Wheao River, Flaxy Creek, and to use the water from the penstocks for the generation of electric power.

Condition Details: Inspection of warning signs, safety booms, intake screens, compensation flows, vegetation clearance and water levels and subsequent reporting.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. During the reporting period Council staff were advised of several incidents that primarily relate to weather conditions, system failure and maintenance. None of these incidents equated to a breach of the consent. At some stages there has been a shortage of rainfall and the flow has slipped below the 6 cumecs. This would be described as exceptional circumstances and therefore not classified as a breach of the consent.

All monitoring results have been submitted and are up to date.

Survey results have been submitted in 2011 and 2012.

3.2 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 64049**

Purpose: To discharge aquatic herbicides, (Diquat) to control weed growth in the Flaxy Canal.

Condition Details: The consent holder has signage, and notification conditions that include local newspapers and several parties including the Regional Council. A report is to be submitted on a yearly cycle.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. No spraying has been completed over this reporting period.

3.3 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 60594**

Purpose: To discharge herbicides containing Diquat to control weed growth in the Rangitaiki-Wheao canal.

Condition Details:

The consent holder has signage, and notification conditions that include local newspapers, forestry owners and the Regional Council.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. No spraying has been completed over this reporting period. This consent expired in August 2012 and the consent holder has decided not to renew it.

3.4 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 62487**

Purpose: To deposit and discharge sediment into the Wheao River and intake dam.

Condition Details: The consent holder has notification conditions concerning sluicing operations. There is trout monitoring survey conditions and reporting of these surveys.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Sluicing operations were completed in 2010 and 2011. Site inspections were completed in 2012 and 2013. The trout monitoring was discontinued in 2008 after consultation with the water science and support manager. No issues were detected.

3.5 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 62903**

Purpose: To complete the dredging operation for the Rangitaiki canal.

Condition Details: The consent holder has notification conditions concerning dredging operations.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Dredging was completed in 2011 and notification was completed. Site inspections were completed in 2012 and 2013. Checking of the disposal areas for the sludge revealed no issues. No issues were detected.

3.6 **Trustpower Limited: Wheao, Rangitaiki Scheme – Consent 65536**

Purpose: To construct and use a sediment trap in the Rangitaiki canal.

Condition Details: The consent holder has notification conditions concerning dredging operations as well as monitoring and reporting on dissolved oxygen levels.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. Removal of sediment was completed in 2010 and 2012. Checking of the disposal areas for the sludge revealed no issues. No issues were detected.

4 **Nova Energy: Aniwhenua, Rangitaiki Scheme**

4.1 **Nova Energy: Aniwhenua, Rangitaiki Scheme – Consent 20190**

Purpose: To dam, divert and discharge water at the Rangitaiki River, and Pokairoa Stream to form Lake Aniwhenua and use water from Lake Aniwhenua for the generation of electric power.

Condition Details: Inspection of warning signs, sound signals, safety booms, intake screens, compensation flows, vegetation clearance and weed control, water levels, sediment and ecological surveys.

Compliance Issues: Nil. **Rating:** High.

Site Summary: A site inspection was completed in 2013 and the consent holder is in the process of changing their name from Bay of Plenty Energy Limited to Nova Energy. Maintenance work is continually being completed. The annual sediment surveys have been submitted for 2010, 2011 and 2012.

All monitoring results have been submitted and are up to date.

The ecological survey was submitted in 2012 and is to be submitted on a 5 yearly cycle. No issues were detected.

4.2 **Nova Energy: Aniwhenua, Rangitaiki Scheme – Consent 50158**

Purpose: To carry out maintenance works in the bed of the Rangitaiki River at the dam barrage.

Condition Details: The consent holder is to notify the Regional Council of trout stranding and when maintenance work is to be completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: A site inspection was completed in 2013 and the consent holder is in the process of changing their name from Bay of Plenty Energy Limited to Nova Energy. Council staff were advised of recent maintenance work below the barrage. No issues were detected.

4.3 **Nova Energy: Aniwhenua, Rangitaiki Scheme – Consent 50341**

Purpose: To carry out maintenance works on the two existing training banks at the head of Lake Aniwhenua.

Condition Details: The consent holder is to notify the Regional Council when maintenance work is to be completed.

Compliance Issues: Nil. **Rating:** High.

Site Summary: A site inspection was completed in 2013 and the consent holder is in the process of changing their name from Bay of Plenty Energy Limited to Nova Energy. Some maintenance work was completed in 2011. No issues were detected.

4.4 **Nova Energy: Aniwhenua, Rangitaiki Scheme – Consent 60548**

Purpose: To use a jetty on the bed of Lake Aniwhenua.

Condition Details: There is a maintenance condition and every five years the consent holder is to supply to the Regional Council an independent structural integrity survey.

Compliance Issues: Nil. **Rating:** High.

Site Summary: A site inspection was completed in 2013 and the consent holder is in the process of changing their name from Bay of Plenty Energy Limited to Nova Energy. The next survey is to be completed in September 2013. No issues were detected.

4.5 **Nova Energy: Aniwhenua, Rangitaiki Scheme – Consent 20458**

Purpose: To divert the Hikurangiha Stream and discharge back into Lake Aniwhenua.

Condition Details: The consent holder is to maintain the stream.

Compliance Issues: Nil. **Rating:** High.

Site Summary: A site inspection was completed in 2013 and the consent holder is in the process of changing their name from Bay of Plenty Energy Limited to Nova Energy. Some maintenance work was completed in 2012. No issues were detected.

5 Karaponga Hydro Limited: Karaponga Scheme

5.1 Karaponga Hydro Limited: Karaponga Scheme – Consent 24433

Purpose: To dam water at the Karaponga Stream to create a reservoir for the purpose of power generation.

Condition Details: Undertake an evaluation of native fish and submit a report to the Regional Council. Inspection of intake screens, undertake stability monitoring of the reservoir area.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. The consent holder has recently changed the name from Karaponga Power Limited to Karaponga Hydro Limited. This scheme has been completely overhauled with a large amount of upgrade work being completed and should be operational in 2013. The fish survey was submitted in 2013. When the scheme is operational then the remaining monitoring will be completed. No issues were detected.

5.2 Karaponga Hydro Limited: Karaponga Scheme – Consent 24434

Purpose: To take surface water at the Karaponga dam for the purpose of power generation.

Condition Details: Undertake weekly records of water measurement and submit records to the Regional Council. Inspection of intake screens.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. No weekly records have been submitted as the scheme has been off line whilst the upgrade works are being completed.

5.3 Karaponga Hydro Limited: Karaponga Scheme – Consent 24435

Purpose: To discharge water used in power generation to the Karaponga Stream.

Condition Details: Undertake monitoring of water flow and submit records to the Regional Council.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. No weekly records have been submitted as the scheme has been off line whilst the upgrade works are being completed.

5.4 Karaponga Hydro Limited: Karaponga Scheme – Consent 24437

Purpose: To discharge compensation flow to the residual channel between the dam and the power house for the purpose of fish access.

Condition Details: Undertake testing and monitoring of water flow and submit records to the Regional Council.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2012 and 2013. No weekly records have been submitted as the scheme has been off line whilst the upgrade works are being completed.

6 **Ngatuhua Lodge Outdoor Education Society Incorporation:
Ngatuhua Lodge Scheme**

6.1 **Ngatuhua Lodge Outdoor Education Society Incorporation: Ngatuhua
Lodge Scheme – Consent 21458**

Purpose: To dam, divert, and discharge water at the Ngatuhua Stream for the purpose of generating hydro-electric power.

Condition Details: To monitor and maintain the scheme.

Compliance Issues: Nil. **Rating:** High.

Site Summary:

Site inspections were completed in 2011, 2012 and 2013. No issues were detected.

6.2 **Ngatuhua Lodge Outdoor Education Society Incorporation: Ngatuhua
Lodge Scheme – Consent 61939**

Purpose: To replace and use a weir and canal structure in the Ngatuhua Stream. To disturb the bed and divert the flow of water in the Ngatuhua Stream to a hydro-electric scheme.

Condition Details: To monitor and maintain the scheme.

Compliance Issues: Nil. **Rating:** High.

Site Summary: Site inspections were completed in 2011, 2012 and 2013. No issues were detected.