



Consent Holder Annual Report - August 2018

Okere Gates (consent 65979) and Ohau Weir (consent 65980)

Bay of Plenty Regional Council
Operations Publication 2018/02
1 August 2018

Prepared by Graeme O'Rourke, Survey Team Leader

5 Quay Street
P O Box 364
Whakatāne
NEW ZEALAND

ISSN: 1176-5550 (Print)
ISSN: 1179-9587 (Online)

Acknowledgements

Bay of Plenty Regional Council's (BoPRC's) Environmental Data Services (EDS), Survey and Rivers & Drainage teams are acknowledged for their contributions to this report.

Their work includes, technical support, velocity monitoring, establishment of survey control, cross section surveys, staff gauge monitoring, installation of stoplogs and general maintenance of structures.



Figure 1 Okere Gates Barrage – Regional Council staff replacing barrage main line after failing in high flows – September 2017.

Executive summary

This report covers the 12 months of lake operations from 1 April 2017 to 31 March 2018 (referred to as 'this term' or 'this period') and will discuss:

- Actual distribution of lake levels compared to the target distributions.
- Actual flow rates compared to minimum flow rates.
- Operational difficulties.
- Stakeholder consultation.
- Complaints and investigations.
- Conclusions.

Resource Consents 65979 and 65980 approve the continued placement, operation and maintenance of the Okere Gates and the Ōhau Channel Weir structures that are located at the outlets of Lake Rotoiti and Rotorua respectively.

For this term, lake levels and flow rates were above normal rates following periods of high rainfall and inflows therefore compromising 'targeted' time in the various lake level ranges.

For Lake Rotoiti, the 'main operating range' from Reduced Level (RL) 279.10 m to 279.20 m was maintained for 235 days or 64.1% of the term (70-85% allocated). This compares to the previous 12 month term from 1 April 2016 to 31 March 2017 of 246 days or 67.4%.

As a result of high rainfalls, lake levels in the upper ranges were 200% higher than the previous year with 111 days recorded compared to 54 days previously.

For this reporting period, there were 180 rafting days or 49.3% of term compared to 349 rafting days (95.6%) in 2016/2017.

The annual drawdown of Lake Rotoiti lasted 20 days (5.5% of term) commencing on 5 August 2017 and concluding 28 August 2017.

Lake levels remained within the consented maximum (RL 279.40 m) and consented minimum (RL 279.00 m) for 98% of the time.

Okere Gates outflows were greater than Ōhau Channel inflows for 99% of the time. Minor infringements occurred as gates were adjusted at times to closely match inflows in an effort to preserve lake levels during drier periods. Reflux may occur when outflows through the Okere Gates are less than inflows causing Lake Rotorua water to then enter the main body of Lake Rotoiti.

The Ōhau Channel stoplogs were installed 8 December 2017 to manage falling lake levels and then removed 14 February 2018 when lake levels rose significantly following heavy rain.

There were no significant operational difficulties to report this term. Any minor issues were addressed quickly and did not compromise consent conditions.

There were no formal complaints received by Council's regulatory authority arm but general concerns were addressed quickly through dialogue or email.

Communication was maintained across the various interest groups with ongoing communication with Iwi, Kaituna River Rafting, Rotorua Tourism, Fish & Game New Zealand and various lakeside residents over this period. Media were also kept informed at various times when needed.

Cultural Management Plans (CMP's) have been received by the two Kaitiaki groups, Ohau ki Rotoiti Kaitiaki and Okere ki Kaituna Kaitiaki Groups and are currently before Council for consideration.

Cross sections of the Ōhau Channel were completed in October 2017 following the conclusion of the 'annual drawdown' of Lake Rotoiti. Velocity monitoring was also completed and again with previous year's results continues to indicate negligible change or increase in velocities during the drawdown phase.

Rotoiti beaches and lake level staff gauges are monitored and photographed monthly and continue to provide a robust and visual record of the lake environment.

It has been another challenging 12 month period to manage lake levels within the various consented ranges while also maintaining Kaituna River flow rates to prevent reflux.

Contents

Acknowledgements	1
Executive summary	2
Document control	6
Document information	6
Document review	6
Document history	6
Distribution control	6
Part 1: Introduction	7
1.1 Background	7
1.2 Reporting	9
Part 2: Actual distribution of lake levels against target distribution	10
2.1 Lake Rotoiti lake level distributions	10
2.2 Data collection and management	10
2.3 Lake Rotoiti	11
2.4 Lake Rotorua	14
Part 3: Actual flow rates versus minimum flow rates	17
3.1 Consent number 65979 flow rate conditions	17
3.2 Monitoring	17
3.3 Results	18
Part 4: Operational difficulties	24
4.1 Discussion	24
Part 5: Consultation with stakeholders	26
5.1 Background – establishment of liaison and Kaitiaki groups	26
5.2 Community communication	27

Part 6: Complaints and investigations	28
6.1 Complaint summary – 1 April 2017 to 31 March 2018	28
6.2 Investigations and monitoring	29
Part 7: Conclusion	33
Appendices	35
Appendix 1: Consent conditions	37

Document control

Document information

Document name:	Consent Holder Annual Report on Okere Gates (Consent 65979) and Ohau Weir (Consent 65980) – 1 August 2018
Contact person:	Graeme O'Rourke, Survey Team Leader
Status:	Final

Document review

Review timeframe:	
Reviewers:	

Document history

Author	Description of change	Date	Version

Distribution control

Person	Role	Date of issue	Version
Mark Townsend	Engineering Manager	31 August 2018	

Authorised by:

Mark Townsend

Date: 14/9/18

Reviewed by:

Mark Townsend

Date: 14/9/18

Part 1:

Introduction

1.1 Background

As Consent Holder, Bay of Plenty Regional Council's Integrated Catchments Group is required to submit an annual report by 31 August each year on the operation and performance of the Okere Gates and Ohau Channel Weir in accordance with Resource Consent (RC 65979) condition 15 and (RC 65980) condition 12.

The 35-year resource consents for Ohau Weir and Okere Gates were renewed and approved on 21 March 2012.

Prior to the construction of the Okere Gates in 1982, there was a natural rock ledge (at approximately RL 278.5 m) about 35 m downstream of the existing gates, which naturally controlled Lake Rotoiti levels. Today, the sill or floor level of the Okere Gates is at RL 277.55 m or approximately 1.0 m lower than the pre-gate rock ledge. Both control structures were put in place as part of the Kaituna Catchment Control Scheme. Pre-scheme, there was no lake level control on either Lake Rotorua or Lake Rotoiti (apart from the natural rock ledge), with the result that lake levels fluctuated naturally with climatic conditions. The structures were designed so that the lake level ranges could be managed within the range set by the former National Water and Soil Conservation Authority (NWSCA), in 1975. These levels were included in BOPRC's Transitional Regional Plan, and are referred to in the existing consents granted for damming the outlets of both lakes.

The Okere Gates structure was constructed in 1982 and is a substantial radial triple gate structure.

The purpose of the Okere Gates is to increase the outflows from Lake Rotoiti to permit floodwater to be discharged when required, and to reduce outflows to prevent undesirable low lake levels. The impacts of the Okere Gates operation on Lake Rotorua levels are generally minor but significant to ensure all Lake Rotorua water passes through the gates to prevent reflux or mixing with Lake Rotoiti water.

The Ohau Channel Weir was constructed in 1989 as a simple weir structure (double broad crested weir) with stoplogs.

The purpose of the Ohau Weir is to control the level of Lake Rotorua but predominantly to prevent undesirable low levels.

The Ohau Weir and Okere Gates are part of the Kaituna Catchment Control Scheme and they are administered as part of the Rivers and Drainage Asset Management Plan (AMP). The AMP outlines the requirements to inspect and maintain the structures over their expected life cycle. They are operated by the Engineering Section of the Integrated Catchments Group in accordance with their existing resource consents.



Figure 2 Locality map.

1.2 Reporting

It is a requirement of Bay of Plenty Regional Council Resource Consents 65979 and 65980 to report annually as follows.

Resource consent condition/s state:

(i) RC 65979 – condition 15 (Okere Gates – Lake Rotoiti)

ANNUAL REPORTING

By 31 August each year for the term of this consent, the consent holder shall provide a report to the Chief Executive of the Bay of Plenty Regional Council or delegate, the Rotorua Te Arawa Operational Liaison Group (RTALOLG), the Ohau ki Rotoiti Kaitiaki Group and the Okere ki Kaituna Katikati Group setting out:

- (a) the actual distribution of lake levels compared to the target distribution;*
- (b) the actual flow rates of the Okere Gates compared to the minimum flow rates;*
- (c) any difficulties experienced by the consent holder in achieving the target lake level ranges and minimum Okere Gate flow rates;*
- (d) a summary of any consultation undertaken with stakeholders in accordance with conditions 9, 10, 11 and 14 of this consent;*
- (e) a summary of any investigations undertaken as a result of complaints about the adverse effects of the lakes;*
- (f) methods for how any difficulties in achieving target level ranges and Okere Gate minimum flows have and will be resolved and how any complaints about the adverse effects of lake levels have been responded to; and*
- (g) methods proposed to resolve any issues that may have risen including operational difficulties, water quality, and extreme weather events, and any changes required to the Operational Management Plan.*

(ii) RC 65980 – Condition 12 (Ōhau Channel Weir – Lake Rotorua)

ANNUAL REPORTING

By 31 August each year for the term of this consent, the consent holder shall provide a report to the Chief Executive of the Bay of Plenty Regional Council or delegate, the Rotorua Te Arawa Operational Liaison Group (RTALOLG), the Ohau ki Rotoiti Kaitiaki Group and the Okere ki Kaituna Kaitiaki Group setting out:

- (a) the actual distribution of lake levels compared to the target distribution;*
- (b) any difficulties experienced by the consent holder in achieving the target lake level ranges and minimum Okere Gate flow rates;*
- (c) a summary of any consultation undertaken with stakeholders in accordance with conditions 10 and 11 of this consent;*
- (d) a summary of any investigations undertaken as a result of complaints about the adverse effects of the lakes;*
- (e) methods for how any difficulties in achieving target level ranges and Okere Gate minimum flows have and will be resolved and how many complaints about the adverse effects of lake levels have been responded to; and*
- (f) methods proposed to resolve any issues that may have risen including operational difficulties, water quality, and extreme weather events, and any changes required to the Operational Management Plan.*

Part 2:

Actual distribution of lake levels against target distribution

2.1 Lake Rotoiti lake level distributions

Lake level distributions are determined by Consent Number 65979 condition 7.4(a)-(c) (Operational Limits) and are best expressed in the graphical envelope shown in Figure 4 below.

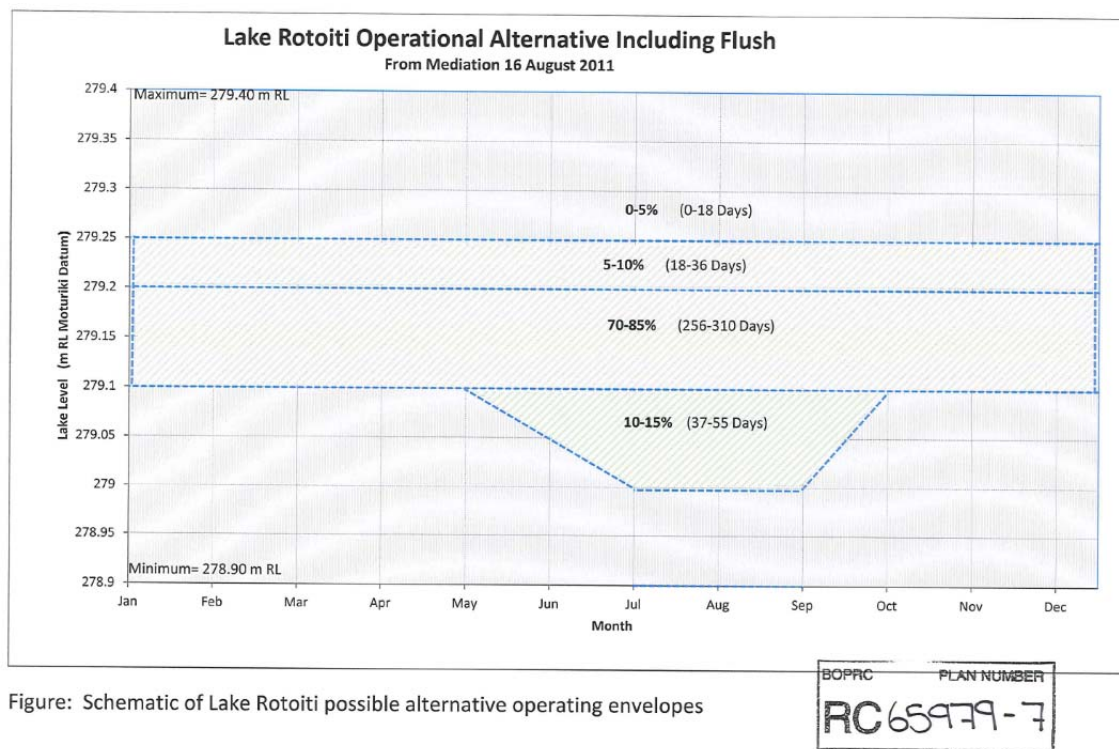


Figure 3 Lake Rotoiti operational envelope – target distributions.

2.2 Data collection and management

Lake levels and flow rates are recorded each morning from HydroTel (BOPRC telemetry and environmental data management system).

HydroTel data is generally recorded at 15 minute intervals and data is extracted as a spot reading and recorded in an 'operational spreadsheet' along with rainfall volumes, weather conditions with general commentary. A more comprehensive dataset can be extracted from the HydroTel archive for further analysis if required.

2.3 Lake Rotoiti

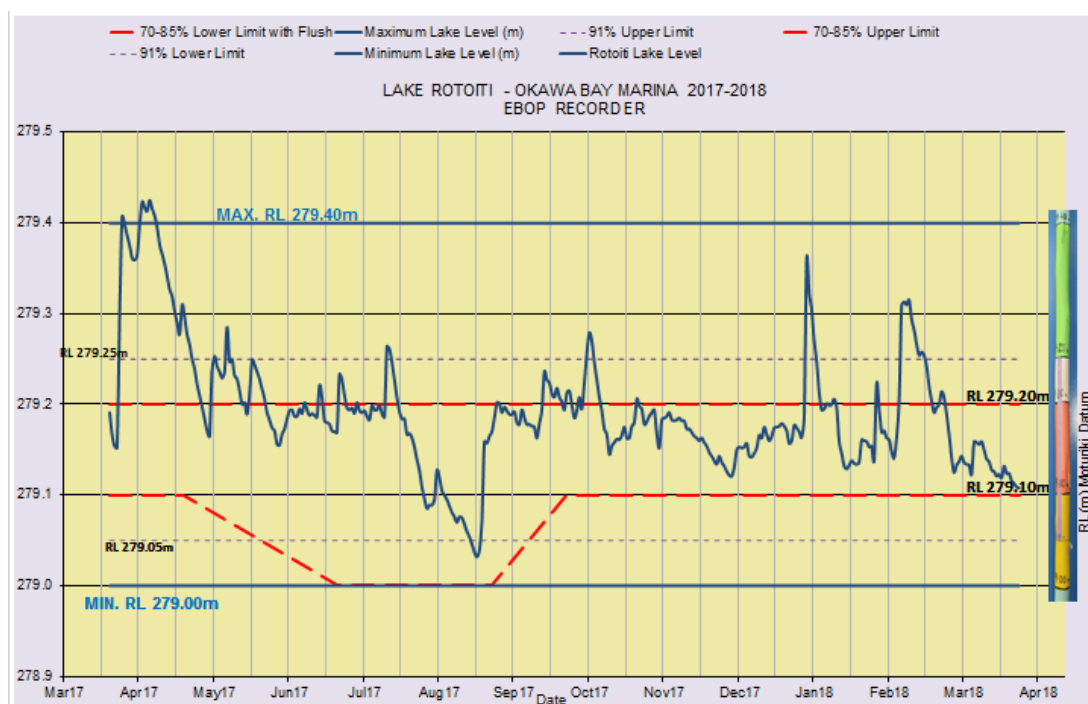


Figure 4 Lake Rotoiti levels measured at Okawa Bay Marina from 1 April 2017 to 31 March 2018.

Key observations:

- Lake levels exceeded the consented maximum level of RL 279.40 m in April 2017 following 230 mm of rain in 4 days from ex-Tropical Cyclone Debbie.
- The annual drawdown of Lake Rotoiti is a consent requirement to lower Lake Rotoiti by a further 100mm between 1 May and 30 September each year. The drawdown facilitates the flushing of the Ōhau Channel by potentially mobilising sediments to increase storage and ultimately reduce flood risk. The drawdown commenced on 5 August 2017 and concluded 28 August 2017, totalling 20 days or 5.5% of year. This compares to 49 days or 13.4% of the previous year (2016/2017) and 39 days or 11.7% of the year before that (2015/2016).

Consented time for 'drawdown allowance' is 36 to 55 days per year or 10-15% per annum.

Note: The 'annual drawdown' occurs during the winter months to improve confidence of a lake refill following lowering of the lake.

- The 'target' lake level minimum of RL 279.00 m was not achieved this term due to significant rainfall occurring during the drawdown period on 28 August 2017, raising lake levels back from RL 279.032 m to RL 279.159 m in four days.
- For the 12 month term, lake levels fell below the 'main operating range' of RL 279.10 m for only 20 days (includes drawdown) compared to 111 days in the previous term when it was much drier.

Table 1 below summarises 'lake level' distributions against 'consent target distributions' from 1 April 2017 to 31 March 2018.

Table 1 Lake level target distributions verses actual distributions.

Consent number 65979 Okere Gates				Actual results		Variation %
Condition	Range (RL m)	Target distribution (per calendar year)		Consent evaluation period 1 April 2017 to 31 March 2018		
		days	%	days	%	
7.4(a)	279.00-279.40	365	100	358	98.0	-2.0
7.4(b)(i)	279.05-279.25	332	91	303	83.0	-8.0
7.4(b)(i)(a) Drawdown zone from 1 May to 1 October 2012	279.00-279.10	36-55	10-15	20	5.5	-4.9
7.4(b)(i)(b)	279.10-279.20	256-310	70-85	235	64.1	-5.9
7.4(b)(i)(c)	279.20-279.25	18-36	5-10	60	16.4	+6.4
7.4(c)	>279.25	18	0-5	51	14.0	+9.0

Figure 5 summarises average lake levels on Lake Rotorua and Lake Rotoiti from 1 January 1997 to 31 December 2017. It can be shown that since the issue of the new consent in 2012, Lake Rotoiti levels are on average, lower (red line) than pre-2012 (green dash line) while Lake Rotorua levels are shown to be marginally higher (yellow line).

Higher levels in Lake Rotorua translates to higher levels and flows in the Ōhau Channel increasing flood risk, particularly around Mourea. However, these higher flows do not increase Lake Rotoiti levels as outflows through the Okere Gates are always greater than inflows from Lake Rotorua. This requirement is covered in Consent 65979, condition 7.4 (i) and prevents reflux or water entering Lake Rotoiti from Lake Rotorua. The Ohau Diversion wall also assists in this process to direct flows directly into the Okere Arm and through the Okere Gates.

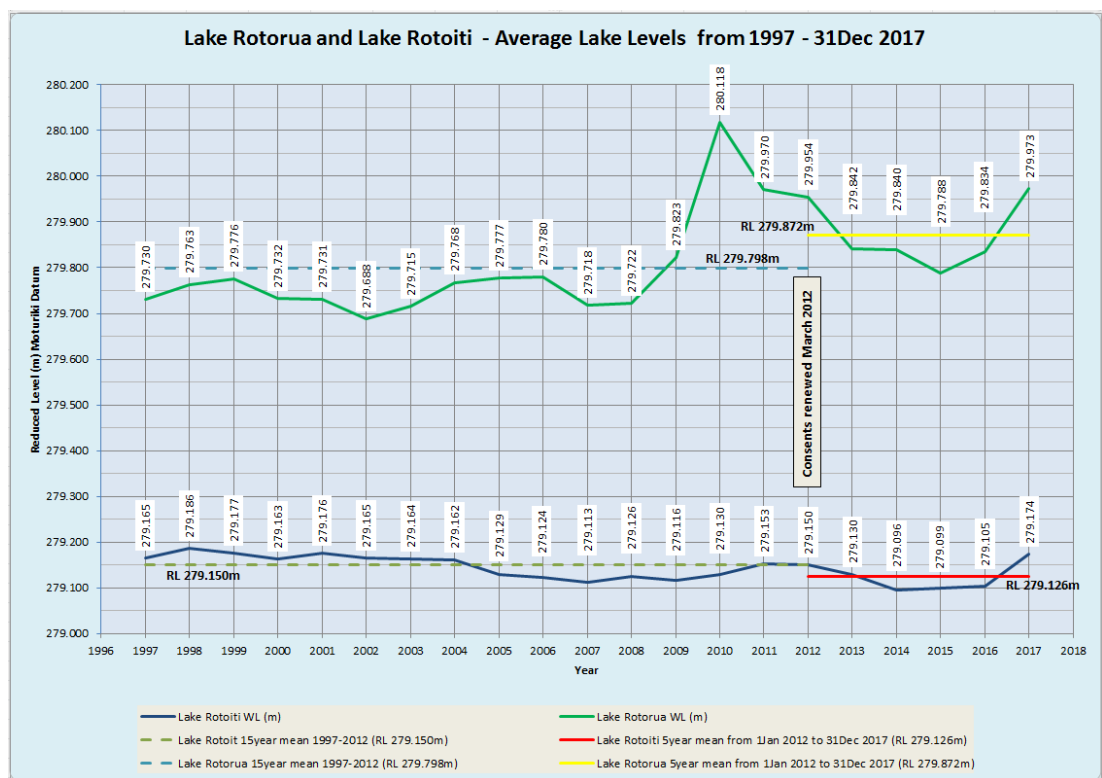


Figure 5 Graphical summary of Lake Rotorua and Lake Rotoiti average lake levels from 1997 to 31 December 2017.

Figures 6 and 7 at Te Rauto Bay and Hinehopu showing high lake levels in April 2017.



Figure 6 Lake Rotoiti at Te Rauto Bay following ex-Tropical Cyclone Debbie — Lake Level RL 279.303 m - 27 April 2017.



Figure 7 Lake Rotoiti at Hinehopu following ex-Tropical Cyclone Debbie – Lake Level RL 279.303 m - 27 April 2017.

2.4 Lake Rotorua

Figure 8 below shows the 12 month lake level trace for Lake Rotorua from 1 April 2017 to 31 March 2018.

Notable observations are:

- The Ohau Weir stoplogs were installed on 8 December 2017 to reduce falling lake levels and removed again on 14 February 2018 to relieve rising lake levels.
- For the 12 month period, lake levels were below the consented maximum of RL 280.076 m for 266 days. There were 99 days when lake levels exceeded the consented maximum due to high rain fall events in April, May and again in September 2017.
- The lowest level recorded this term was RL 279.758m on the 29 December 2017 or 0.292 m above the consented minimum of RL 279.466 m. The lowest recorded lake level during the previous term (2016/2017) was RL 279.625 m.
- The highest recorded level this term was RL 280.415 m on 15 April 2017 following ex-Tropical Cyclone Debbie.

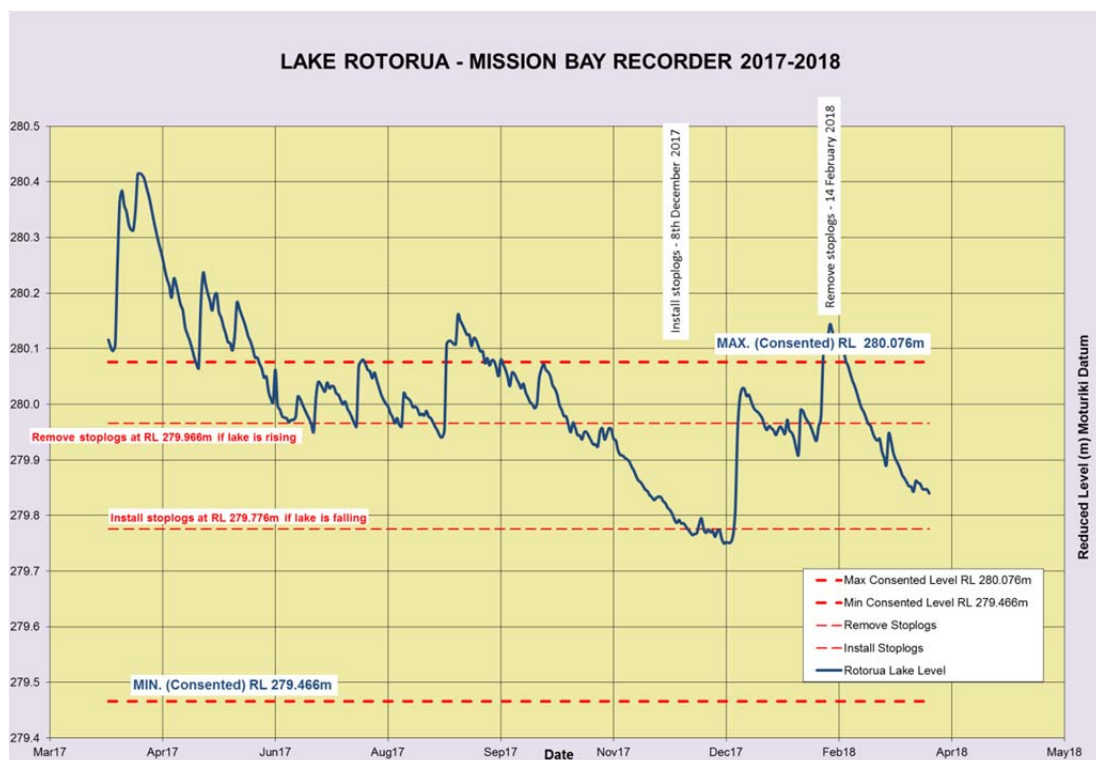


Figure 8 Lake Rotorua levels measured at Mission Bay Recorder from 1 April 2017 to 31 March 2018.

A photographic record together with staff gauge readings at the State Highway 33 Bridge at Mourea is maintained to record the relationship between Lake Rotorua, Ōhau Channel and Lake Rotoiti water levels. This will help provide better understanding of lake level influences on Ōhau Channel levels and flows, particularly during times of flooding and high lake levels.

It is noted that the Ōhau Channel Weir provides minimal flood relief once maximum lake levels occur as the weir becomes drowned. The stoplogs perform best during low lake levels to decrease outflows and maintain lake levels.



Figure 9 Installing Ōhau Weir stoplogs - 22 October 2015.



Figure 10 Ohau Channel stoplogs stored on site following refurbishment. Each stoplog is 6 m long x 0.3 m high.

Part 3:

Actual flow rates versus minimum flow rates

3.1 Consent number 65979 flow rate conditions

Operational limits 7.4(f) to (l) relate to flows through the Okere Gates and are specified in Consent conditions 65979. In summary these conditions require that except under extreme droughts or an emergency:

- A minimum river flow (7.9 cumecs) with a seven day minimum of 9.84 cumecs.
- Greater outflows (Okere Gates) than inflows (Ōhau Channel) assisting to preserve water quality of Lake Rotoiti.
- Okere Gates ramping rates - closing (-5 cumecs/hour) or opening (+10 cumecs/hour) in consideration of river bank stability downstream when flows fluctuate.
- Recreational river flows for rafting and kayaking to be provided wherever possible within the other limits of the consent.

Comments on performance follow in paragraph 3.3.1 discussion notes.

3.2 Monitoring

Flow rates on the Ōhau Channel and Okere Gates are monitored by telemetry using NIWA's lake level recorder at Mission Bay on Lake Rotorua and the Taaheke River Gauge Station on the Kaituna River, located approximately 3 km downstream of the Okere Gates. Flow values are accurate to +/-8% of any given reading but for the purposes of management, the given reading at any time is recorded as the measured flow.

A consent priority is maintaining greater outflow (Okere Gates) than inflow (Ōhau Channel) to prevent reflux around the downstream end of the Ohau Diversion Wall. This measure assists in maintaining the water quality of Lake Rotoiti.

3.3 Results

Flow rates for the Ōhau Channel (inflows in blue) and Kaituna River @ Taaheke (outflows in red) as recorded in the 'daily operational spreadsheet' are shown in Figure 11 below.

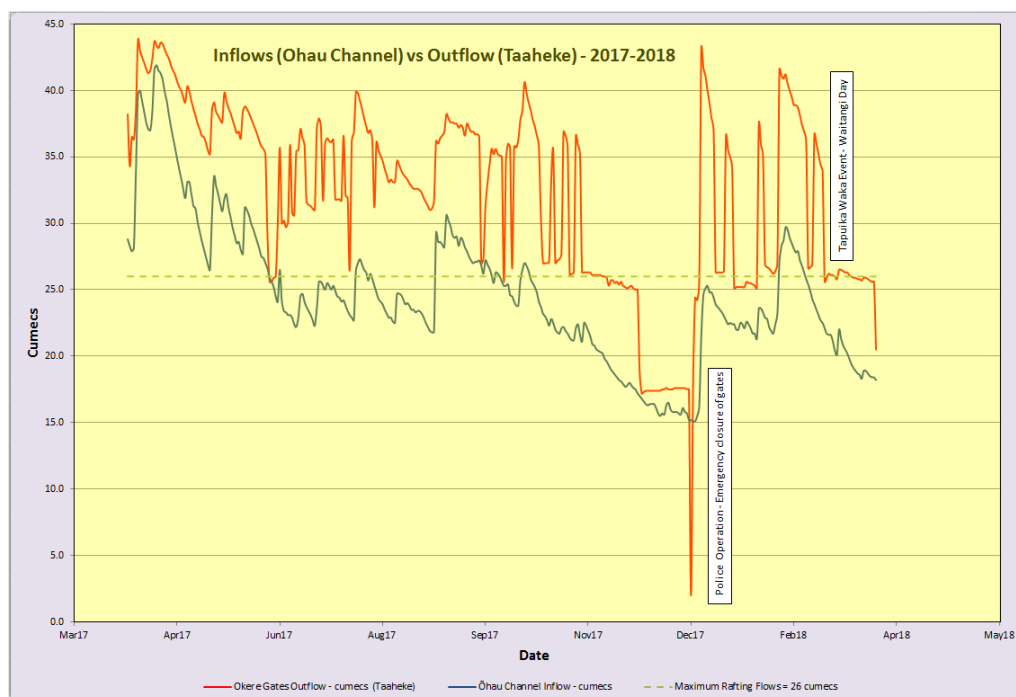


Figure 11 Lake Rotoiti inflow - Ōhau Channel (blue) and Okere Gates outflow - Kaituna River (red) - 1 April 2017 to 31 March 2018.

For interpretation of Figure 12 above, Kaituna River outflows (in red) are required to be higher than Ōhau Channel inflows (in blue) to satisfy the water quality equation – Outflows are greater than Inflows.

A more comprehensive and continuous record from the HydroTel archive is also shown below in Figures 12 and Figure 13 to show the six-hourly and seven-day flow averages. Flow requirements have been summarised in Table 2.

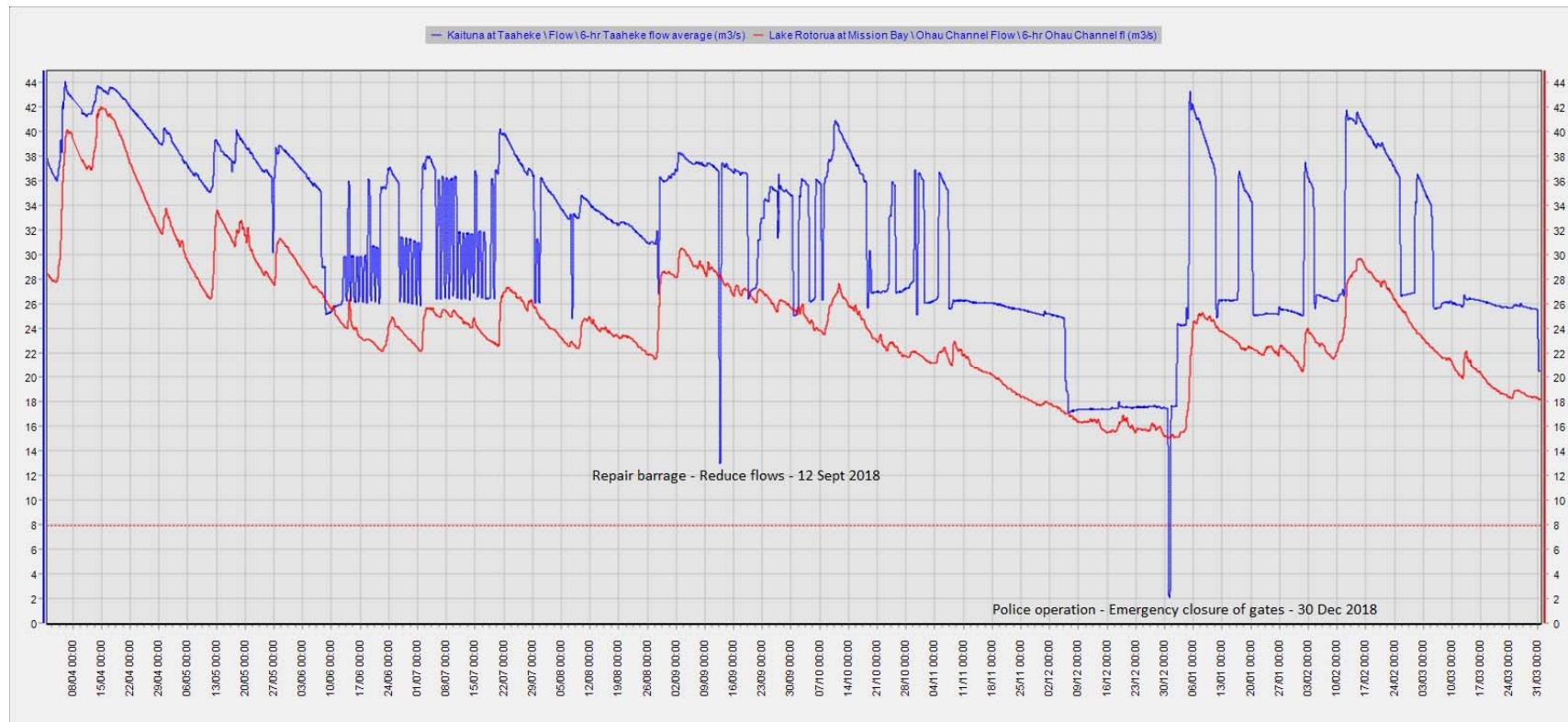


Figure 12 HydroTel summary of Ōhau Channel (red) and Kaituna River (blue) flow rates – six-hourly averages - 1 April 2017 to 31 March 2018.

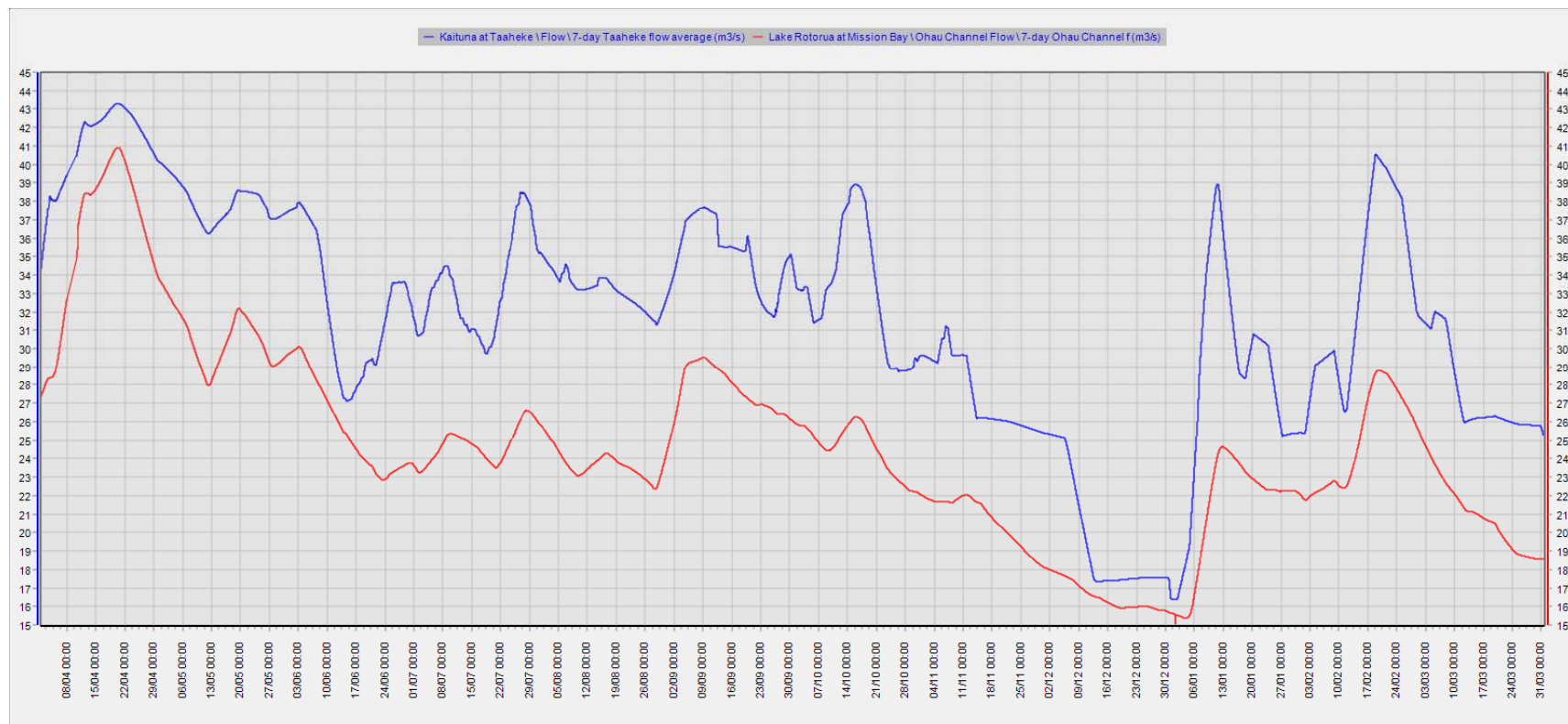


Figure 13 HydroTel summary of Ōhau Channel (red) and Kaituna River (blue) flow rates – seven day averages - 1 April 2017 to 31 March 2018.

Table 2 Okere Gate flow distributions from 1 April 2017 to 31 March 2018.

Consent #65979 Okere Gates			Results		Variation from requirement	
Condition	Flow requirement (m ³ /s)	Target distribution (per calendar year)	Consent evaluation period 1 April 2017 to 31 March 2018			
			Days	%		
7.4(f)(i)	Kaituna River - six-hourly average flow of not less than 7.9 m ³ /s. (Figure 12 – blue trace)	100%	364	99.7	30 Dec 2017	Police operation – gates fully closed to <2.5 cumecs to facilitate search and rescue.
7.4(f)(ii)	Kaituna River - seven day rolling average flow of not less than 9.84 m ³ /s. (Figure 13 – blue trace)	100%	365	100	None	Minimum flow recorded =16.4 cumecs on 31 December 2017.
7.4(i)	Six-hourly average outflow through gates > six-hourly average inflow from Ōhau Channel. (Figure 12)	100%	362	99.2	8-10/6/17 12/9/17 30-31/12/17	Flow differences were within +/- 8% (accuracy or tolerance of data) except for the barrage repair on 12 September and the police operation on 30 December 2017 when gates were closed down. Note: These exceedances can be summarised into 70 hours or 3 operational days.
7.4(j)(i).	When opening the gates, a maximum flow increment of 10 m ³ /s per hour.	100%	365	100	None	Gates were opened and closed in accordance to consent conditions – all operations are recorded in daily operating spreadsheet.
7.4(j)(ii)(a)	When closing the gates, a maximum flow decrement of 5 m ³ /s per hour when operating the Okere Gates below 30 m ³ /s.	100%	365	100	None	Gates were opened and closed in accordance to consent conditions – all operations are recorded in daily operating spreadsheet.
7.4(j)(ii)(b)	A maximum flow decrement of 10 m ³ /s per hour when operating the Okere Gates at or above 30 m ³ /s.	100%	366	100	None	Gates were opened and closed in accordance to consent conditions – all operations are recorded in daily operational spreadsheet.

3.3.1 Discussion

Okere Gate minimum flow rates usually occur during the summer months when rainfall, inflows and lake levels tend to be low.

The minimum Kaituna River/Okere Gate flow for this reporting period was 13.0 cumecs on 12 September 2017 to facilitate repairs to the barrage upstream of the Okere Gates. This compares to 11.9 cumecs in February 2017 and 12.0 cumecs in January 2016. The minimum allowable flow is 7.9 cumecs being the ecological minimum for river well-being.

The minimum Ōhau Channel flow for this reporting period was 15.1 cumecs on 30 December 2017 compared to 11.2 cumecs on 13 February 2017. Channel flows are derived by a rating curve determined from lake levels measured at the Mission Bay Recorder with flows accurate to +/-8%.

The Kaituna River seven-day minimum flow was 16.4 cumecs on 30 December 2017 while the Ōhau Channel seven day minimum flow was 15.4 cumecs on 4 January 2018 (extracted from the HydroTel record).

Okere Gates outflows were greater than Ōhau Channel inflows for approximately 99% of the time. When outflows through Okere Gates are less than inflows from Ohau Channel, an alarm is issued advising the operator. The operator will assess the situation and open the Okere Gates further to increase outflows. During the summer months, the higher release of Rotoiti lake water will compromise lake levels as water quality is maintained – Consent 65979: Condition 7.4 (h-i).

Okere Gate ramping increments (change in flow rate per hour) were maintained 100% of the time as gates were adjusted in transitional stages (10 cumecs/hour when opening and 5 cumecs/hour when closing). This data is recorded in the daily operational spreadsheet for record.

Recreational flows – Kaituna River:

- A requirement of consent condition 7.4(l) is to facilitate recreational flows for Kaituna River activities where ever practical.
- Rafting flows are achieved inside the 13-26 cumec range or at gate settings of 3 @ 200 and 3 @ 500 respectively. These 'commercial' flows have been determined by Maritime New Zealand. When Ōhau Channel inflows exceed 26 cumecs, rafting will cease on the Kaituna River as a greater flow is released through the Okere Gates (outflow>inflow).
- Every reasonable effort is made to accommodate rafting flows while maintaining consent conditions. Communications are regularly maintained to advise and assist the rafting community with planning and cancellations.
- For this reporting period, there were only 180 rafting days (49.3%) on the Kaituna River. This compares to 349 rafting days (95.6% of year) in 2016/17, 362 rafting days (98.9%) in 2015/16, 97.8% in 2014/15, 96.4% in 2013/2014 and 80.3% in 2012/2013.

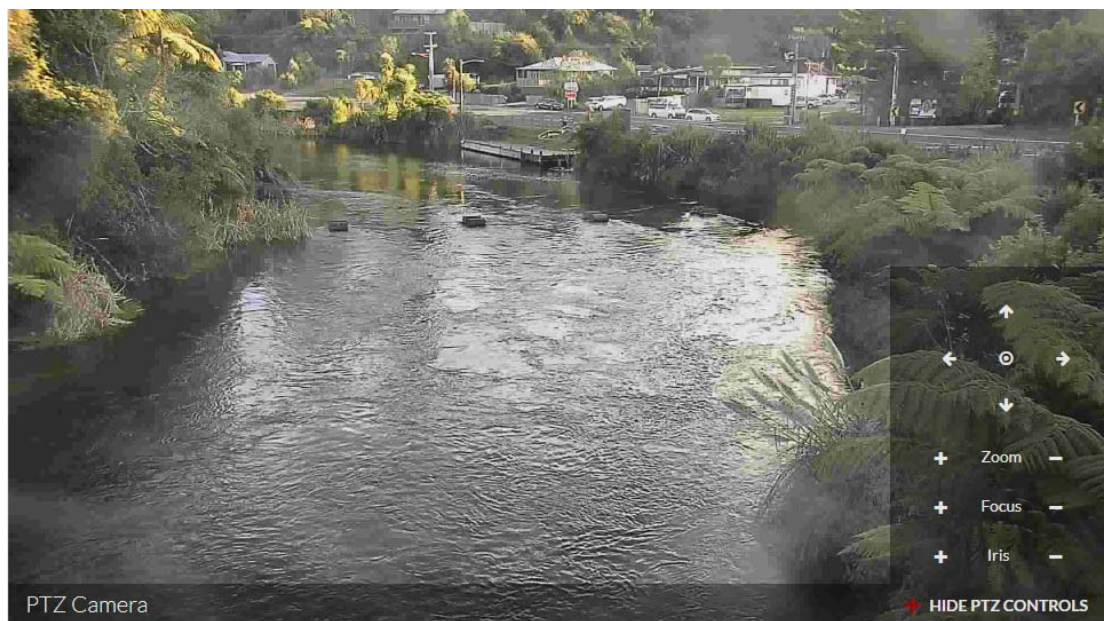


Figure 14 Barrage upstream of Okere Gates.



Figure 15 Rafters preparing to enter the Kaituna River from Okere Gates structure.

Part 4:

Operational difficulties

4.1 Discussion

Operationally, there were no significant difficulties to report this term.

The main Okere Gates Control System was fully upgraded in February 2013 improving control and communications to and from the site. The steel lifting ropes and connections on each gate were also replaced during this time. The new system has been operating well since the upgrade.

There were no issues in removing or installing the Ōhau Channel stoplogs.

Currently, a siren system is under investigation to further warn river users downstream when the Okere Gates are fully opened. This risk is currently being managed by signage, group email notifications and only opening the gates fully during hours of darkness.

The challenge each year is staying within prescribed consent ranges and limits during times of climatic extremes. This year was particularly challenging with average rainfall resulting in high lake levels and subsequent outflows. During periods of dry weather or drought, the challenge is maintaining lake levels ensuring outflows (Okere Gates) are greater than inflows (Ohau Channel).

Lake levels are proactively managed using long-range forecasts to release or store water early to manage anticipated inflows.

Figures 16 and 17 below shows the 'percentage of normal monthly rainfall' for January and February 2018.

For this term, the Rotorua lakes district, rainfall totals were approx. 250% of the January monthly average and then 250-450% of the February monthly average. These high rainfall accumulations elevated lake levels resulting in high outflows down the Ōhau Channel and through the Okere Gates into the Kaituna River.

Commercial rafting ceases on the Kaituna River once outflows through the Okere Gates exceed 26-27 cumecs (cubic meters of water per second – m³/s) This flow has been set by Maritime New Zealand.

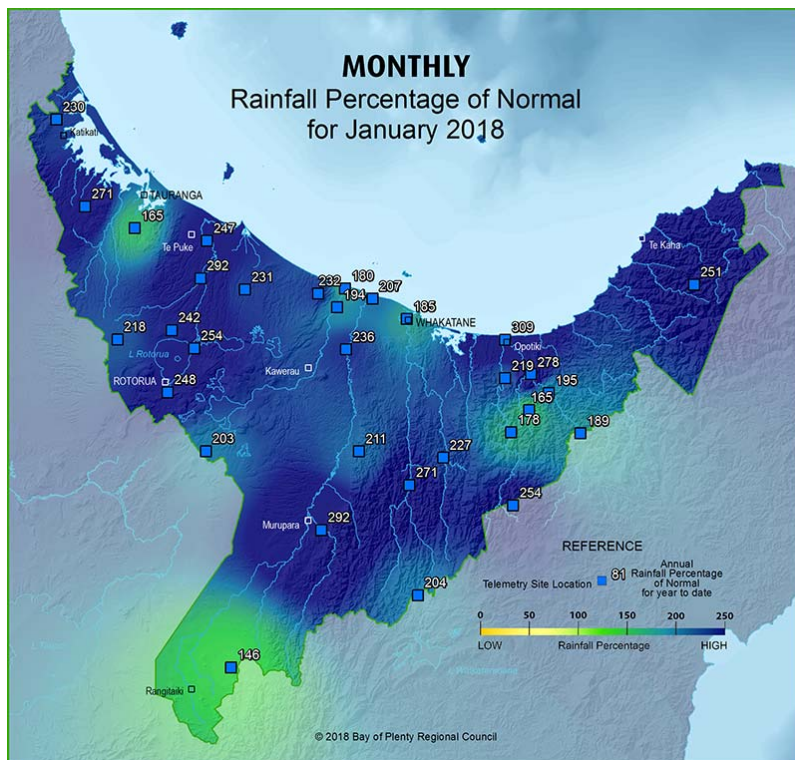


Figure 16 Monthly rainfall percentage of normal for January 2018.

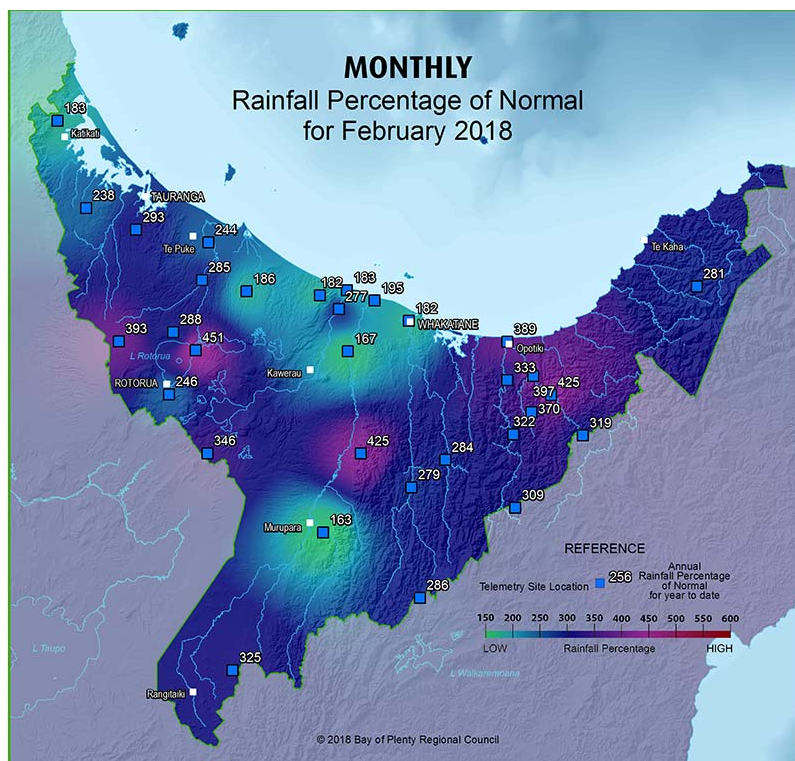


Figure 17 Monthly rainfall percentage of normal for February 2018.

Part 5:

Consultation with stakeholders

5.1 Background – establishment of liaison and Kaitiaki groups

Under the conditions of these consents, the Consent Holder was initially tasked with facilitating the establishment of a liaison group and two Kaitiaki groups within three months of the commencement of the consent. The purpose of the groups is to essentially facilitate discussion and free flow of information between the consent holder and the community.

These groups are:

- Rotorua Te Arawa Lakes Operational Liaison Group (RTALOLG).
- Ohau ki Rotoiti Kaitiaki Group (OKRKG).
- Okere ki Kaituna Kaitiaki Group (OKKKG).

The Consent Holder is required to convene a meeting each year with the two Kaitiaki groups, if requested, and with the RTALOLG at least annually in the first three years and thereafter at least every third year.

For this term, groups held their 2017 Annual General Meetings on:

- | | |
|-----------------------------------|------------------------------------|
| • RTALOLG | 7 November 2017 |
| • Okere ki Kaituna Kaitiaki Group | 27 October 2017 |
| • Ohau ki Rotoiti Kaitiaki Group | Unable to agree on a suitable date |

BOPRC facilitated these meetings and presented the 2016/2017 Okere/Ohau Annual Report. Meeting minutes were recorded and were made available to the group Chairs and then for further distribution to its members.

Both Kaitiaki Groups are required to submit Cultural Management Plans (CMP) to the Consent Holder within three years of the commencement of this consent.

Both Tapuika and Ngāti Pikiao have now presented their respective Cultural Management Plans for review.

Ngāti Pikiao have also presented their CMP to the local Rotoiti community at a meeting in 2017. Many of the issues raised in their CMP have been resolved directly with BOPRC staff and actions taken.

The on-going level of Lake Rotoiti remains a concern to Ngāti Pikiao and they have presented to the Rotorua Te Arawa Lakes Operational Liaison Group (RTALOLG) their expectations with respect to trialling an alternative management regime.

They have also requested that BOPRC regulatory group advises whether they are going to review the resource consent as a result of the findings of the CMP submitted.

As consent holder BOPRC is prepared to work with Ngāti Pikiao to find a solution that addresses their lake level concerns while ensuring that other lake level issues are also considered in finding a solution. It is likely that the first step would be to trial any proposed solution and that it would also be subject to the RMA resource consent process.

5.2 Community communication

Every effort has been made to maintain regular communication with all stakeholders.

This communication includes:

- BOPRC flood managers – Lake level and flow conditions.
- Iwi – Response to inquiries.
- Residents – Response to enquiries.
- Rafters – Gate settings and river flows.
- Rotorua tourism operators – Lake front issues.
- Media – Situation reports.

Part 6:

Complaints and investigations

6.1 Complaint summary – 1 April 2017 to 31 March 2018

There were no 'formal' complaints received this term.

Date	By	Concern	Action	Result
x	x	x	x	x

Concerns (other):

Typical concerns expressed are:

- Low lake levels during summer.
- Rafting constraints on the Kaituna River.

There were no formal flood complaints reported for this 12 month period.

Concerns or issues are addressed quickly either in writing or phone conversation. If the concern escalates to a complaint, this would be directed to the Regulatory Authority for record and action.

The Consent Holder posts regular updates to the '@Okere Gates-Kaituna River Rafting' Group advising on:

- Lake levels.
- Okere Gate settings.
- Flow rates for Ōhau Channel and Kaituna River.
- Met Service forecasts and warnings.
- Programmed activities.

6.2 Investigations and monitoring

Investigations completed or programmed to meet conditions of the consents are shown in Table 3 below:

Table 3 Investigations and monitoring completed or in progress.

Investigation	Consent 65979 Condition No.	Location	Issue	Progress
Flood mitigation and beach vegetation	12	Mourea/Ōhau Channel Hinehopu and Te Rauto Bay	Flooding Narrow beaches	12.2 Bunding no longer required as ground levels found to meet design criteria. Recommendation to remove this condition is currently on hold until CMP's have been reviewed. 12.3 Apply herbicide to Hinehopu and Te Rauto beaches. Recommendation before Regional Council's Regulatory Arm to remove herbicide element and view other measures in conjunction with Ohau ki Rotoiti Kaitiaki Group Cultural Management Plan (to be finalised).
Velocity monitoring	13.2	Ōhau Channel	Maintain fish migration during flush (Fish & Game New Zealand)	Results continue to show no increase in Ōhau Channel velocities during annual drawdown of Lake Rotoiti.
Lake level/ staff gauge monitoring and settlement	8	Hinehopu, Gisborne Point Okawa Bay Te Akau Bay	Monitor settlement	Ongoing. Lake staff gauges read monthly and record maintained to calibrate against Okawa Bay Recorder Tower.

6.2.1 Condition 14 - Hinehopu water table monitoring - Tamatea Street

Consent condition 14 states that the consent holder is tasked to investigate the correlation between lake levels and adverse ground water levels for a 12 month period within three months of the new consent being issued.

More than six years of monitoring is now complete.

The investigation concluded that:

- There was a weak correlation between lake levels and Hinehopu groundwater levels. Groundwater levels are strongly influenced by elevated wetland water levels caused by a congested drain affecting gravity flow to lake.
- Are lake levels higher under the new consent?
 - No, on average lake levels are lower.

Note that monitoring of wetland levels continues to further supplement the record.

6.2.2 Condition 13.2 - Ohau Channel cross sections and velocity monitoring

Ōhau Channel cross sections are undertaken annually at 15 locations shown in Figure 16 to monitor bed levels following the flush each year.



Figure 18 Ohau Channel cross section locations.

Several years of survey monitoring indicate that the Ōhau Channel is reasonably stable with no significant changes occurring since introducing the Annual Flush Programme in 2012.

Cross Section surveys show that the normal processes of erosion and aggradation are occurring naturally within the Ōhau Channel despite the flush but further monitoring will confirm this assessment. Data analysis indicates a generally stable environment with only minor changes occurring through the Ōhau Channel reach.

One purpose of the lake level drawdown or flush is to theoretically increase channel velocities to encourage mobilisation of sediments to increase capacity therefore reducing flood risk.

At this stage, this remains the best approach to potentially mobilise bed load and maintain sufficient gradient in the Ōhau Channel.

Figure 19 below shows an example of cross section 25 located just upstream of State Highway 33 and indicates little change in channel profile.

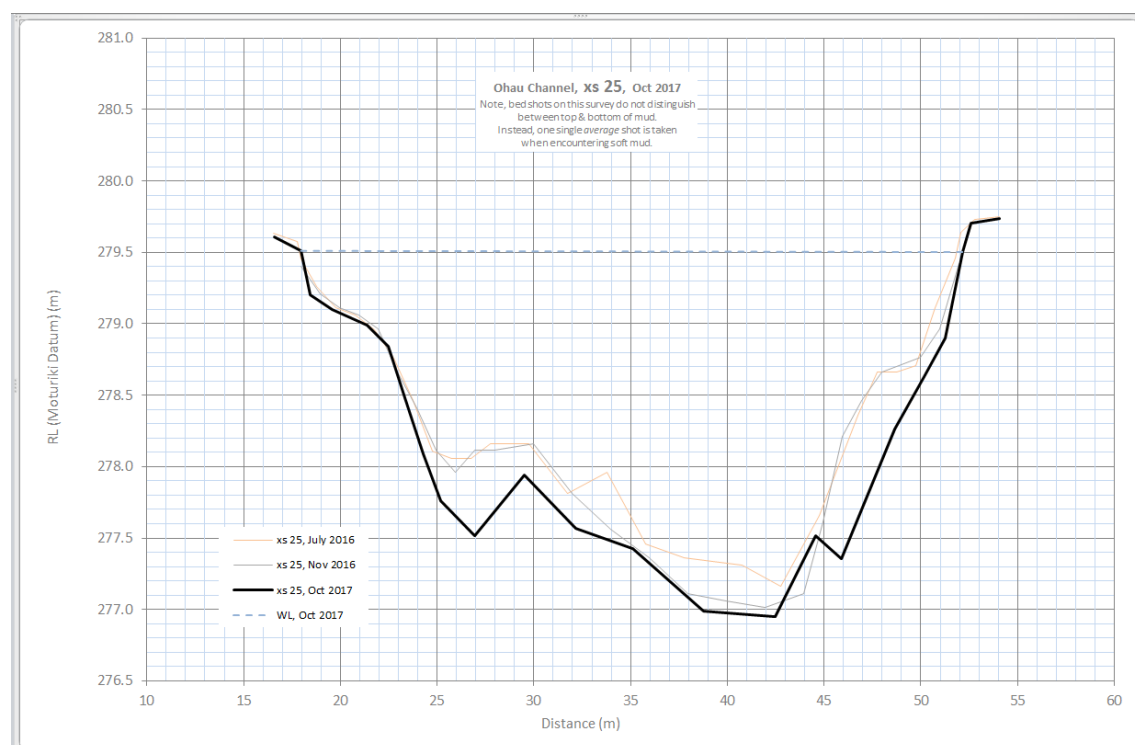


Figure 19 Cross section number 25 located above State Highway 33 – July 2016 to October 2017.

In July 2012, a staff gauge was fitted to the Ōhau Channel/State Highway 33 Bridge (Figure 20) to monitor the relationship between Lake Rotorua, Ōhau Channel and Lake Rotoiti water levels.

Following six years of monitoring, the dominant influence on Ōhau Channel water levels at Mourea are Lake Rotorua levels. This observation was particularly evident during the 2014 drawdown phase when Lake Rotorua and Ōhau Channel levels remained high while Lake Rotoiti was drawn down to RL 278.994 m on 9 July 2014 or just below its consented minimum of RL 279.00 m



Figure 20 Ohau Channel Staff Gauge on State Highway 33 Bridge – Mourea.

6.2.3 Velocity monitoring

Annual monitoring is required under condition 13.2 to address concerns by Fish & Game New Zealand to determine any effects the flush may have on Ōhau Channel velocities and fish migration.

Velocity measurements were conducted at several locations during the drawdown phase in August 2017.

The monitoring continues to report no significant change in velocities during the flush with reports submitted to Fish & Game New Zealand.

This monitoring will continue annually or until reviewed if conclusions remain unchanged.

6.2.4 Annual reporting – RC 65979 Condition 15 and RC 65980 Condition 12

A recommendation is currently on hold to bring the annual reporting date forward from 31 August to 1 June each year to better align with the anniversary of the consent renewal in March 2012 and the subsequent operating year from 1 April to 31 March.

Part 7:

Conclusion

Consents 65979 and 65980 have now been operational for over six years since the issue of the renewed consents in March 2012.

The biggest driver for Lake Rotoiti level management is water quality followed by water levels. The operational regime of these consents compliments the Rotorua Lakes Programme to improve water quality in Lake Rotoiti by ensuring outflows through the Okere Gates (Kaituna River) are always greater than inflows from the Ōhau Channel (Lake Rotorua).

Various monitoring programmes continue around the lakes and Ōhau Channel and provide valuable information for both Consent Holder and stakeholders in understanding lake dynamics and environmental effects.

The Consent Holder continues to maintain frequent communications and maintain the free flow of information with consent stakeholders at all times.

2017/2018 has been a challenging year in terms of environmental conditions to maintain lake levels and flow rates when lake levels were at their maximum. The Consent Holder has responded to concerns quickly and kept the regulatory authority informed of any issues.

The Annual General Meeting between the Consent Holder, RTALOLG and the two Kaitiaki groups is a good opportunity to present the annual report and discuss any performance issues with the consent.

The Consent Holder also acknowledges the Regional Council's Regulatory Arm to ensure both consents are managed in accordance with all 76 consent conditions.

The Consent Holder deems that it has generally fulfilled its management and operational obligations for the 2017/2018 consent period as recorded in this annual report.

Appendices



Appendix 1:

Consent conditions

BAY OF PLENTY REGIONAL COUNCIL

Resource Consent 65979

Consent Holder: Bay of Plenty Regional Council (Rivers and Drainage Group)

Address: PO Box 364
Whakatane

Resource consent to:

- (i) Use and maintain a control structure, being the Okere Control Gates, at the outlet of Lake Rotoiti; and
- (ii) Dam the outlet of Lake Rotoiti, being at or about map reference NZMS 260 U15039485; and
- (iii) Artificially control the water levels in Lake Rotoiti; and
- (iv) Discharge water from Lake Rotoiti to the Kaituna River through the Okere Control Gates.

Conditions attaching to Resource Consent 65979

1 Proceed in accordance with application, except as modified by conditions

The Proposal shall proceed in accordance with the Application, including:

- (i) The Resource Consent Application and Assessment of Environmental Effects for the Okere Gates and Ohau Channel Weir prepared by Opus international Consultants Limited, referenced as 289030.07, dated September 2010, including all appendices attached to the Application.
- (ii) The further information entitled *Resource Consents 65979 and 65980: Consent Structures and Operating Levels for Lake Rotorua and Rotoiti – Response to s92 Request dated 23 September 2010*, prepared by the Project Manager, Okere Gates and Ohau Weir Consent Project dated 22 October 2010, including all appendices.

except as modified by the conditions set out in this consent.

2 Purpose

To allow for the continued use of the Okere Gates control structure on the bed of the Kaituna River at the outlet of Lake Rotoiti and to control the water level of Lake Rotoiti with the objective of minimising water level fluctuations on Lake Rotoiti.

3 Location

The structure shall be located at the outlet to Lake Rotoiti as shown in BOPRC plan numbers RC65979/1 (BOPCC K 4294 sheet number 1/22), RC65979/2 (BOPCC K 4294 sheet number 6/22), RC65979/3 (BOPCC K 4294 sheet number 7/22), RC65979/4 (BOPCC K 4294 sheet number 9/22), RC65979/5 (BOPCC K 4294 sheet number 16/22) and RC65979/6 (BOPCC K 4294 sheet number 18/22).

4 Map reference

The structure shall be located at or about map reference NZMS 260 U15 039 485.

5 Okere gates control structure

The existing control structure shall be retained. It shall consist of:

- 5.1 A concrete dam structure incorporating three radial control gates.
- 5.2 Gate opening sill level 277.526 m above Moturiki Datum.

All levels shall be relative to the Rotorua Fundamental Benchmark Survey 1997.

6 Structure and maintenance

- 6.1 The Consent holder shall maintain the control structure in accordance with the requirements of the Rivers and Drainage Group Asset Management Plan (AMP). The Consent holder shall monitor the control structure for erosion and structural damage on a regular basis, maintain a record of such inspections and repair actions and make that record available for inspection by the Chief Executive of the Bay of Plenty Regional Council or delegate within 24 hours of a written request being made to review it.
- 6.2 The consent holder shall repair any structural or erosion damage to the Okere Arm lake edges or Kaituna River banks within 30 metres of the Okere Gates caused by the exercise of this consent. The repair shall be undertaken within 10 working days of the consent holder becoming aware of any damage or repair required.

7 Lake Rotoiti level management

Operational Management Plan

- 7.1 Within one month of the commencement of this consent, the consent holder shall submit an Operational Management Plan to the Chief Executive of the Bay of Plenty Regional Council or delegate.
- 7.2 The Operational Management Plan shall contain details of the procedures that shall be implemented for the operation of the Okere Gates in accordance with the conditions of this resource consent, and as a minimum, shall address the following matters:
 - (a) A description of how the structure operates;
 - (b) The methods and guidelines for achieving the following:
 - (i) the distribution of lake levels contained in the Lake Rotoiti Operational Strategy as set out in condition 7.4 of this consent;
 - (ii) the Okere Gates settings required to manage the levels of Lake Rotoiti for each month of the year; and
 - (iii) any relevant other methods and/or guidelines for achieving compliance with the target lake level ranges set out in condition 7.4 of this consent.
 - (c) Procedures for 'flushing' of the Ohau Channel, including details of service of notice to the community regarding the timing and duration of 'flushing';
 - (d) Plans of the Okere Gates control structure;
 - (e) A description of routine inspection and maintenance procedures to be undertaken with respect to the Okere Gates;
 - (f) A description of monitoring, including location of water level monitoring devices and record keeping of all monitoring;

- (g) A description of methods to address potential public and site personnel safety issues associated with the operation of the Okere Gates, including subsequent changes in levels for Lake Rotoiti and flows in the Kaituna River (which may include use of signage, electronic media and establishing and maintaining a text messaging database).
- (h) A description of procedures for reporting on the operation of the Okere Gates, with particular regard to the requirements of this consent and the target lake level ranges and flows to the Bay of Plenty Regional Council and key stakeholder groups;
- (i) A description of how any difficulties or unforeseen circumstances affecting the successful operation of the Okere Gates and lakes levels will be reported to the Bay of Plenty Regional Council and key stakeholder groups, and how such difficulties or circumstances will be addressed.

7.3 The Operational Management Plan may be reviewed and updated by the consent holder from time to time. The consent holder shall provide a copy of the reviewed and updated Operational Management Plan to the Chief Executive of the Bay of Plenty Regional Council or delegate.

Operational limits

7.4 The control structure shall be operated in accordance with an Operational Management Plan as provided in condition 7.1 above, subject to the following restrictions:

- (a) The Okere Gates control structure shall be operated so that the minimum lake level is no less than RL279.00 m (to Moturiki Datum) and the maximum lake level is no greater than RL 279.40 m (to Moturiki Datum).
- (b) Subject to condition 7.4(h), the water level of Lake Rotoiti shall be maintained within the following target ranges for the specified percentages of the year:
 - (i) RL 279.05 m to 279.25 m (to Moturiki Datum) for at least 91% of the time for each calendar year, and distributed as follows:
 - (a) RL 279.00 m to RL 279.10 m (to Moturiki Datum) for between 10% and 15% of the time for each calendar year and shall only occur between 1 May and 30 September with a minimum level that is limited by a straight line from RL 279.10 m on 1 May to RL 279.00 m on 1 July and from RL 279.00 m on 1 September to RL279.10 m on 30 September as shown on the schematic of the *Lake Rotoiti Operational Envelope* referenced as BOPRC Plan Number 65979/7.
 - (b) RL279.10 m to RL279.20 m (to Moturiki Datum) for between 70% and 85% of the time for each calendar year; and
 - (c) RL 279.20 m to RL 279.25 m (to Moturiki Datum) for between 5% and 10% of the time for each calendar year, subject to condition 7.4(d) below.
- (c) The water level of the lake may be above 279.25 for up to 5% of the time for each calendar year and only as a result of extreme rainfall events.
- (d) After 12 months of the exercise of this consent, the consent holder may undertake a decremental variation of the time spent above RL 279.20 m to between 0% and 5% of the time for each calendar year, if that is considered by the consent holder to be an appropriate mitigation measure to address groundwater issues at Hinehopu as provided for in condition 14 of this consent.
- (e) If, as a result of extreme weather, the target range set out in condition 7.4(b) cannot be achieved, the lake level shall be controlled within the minimum and maximum levels set out in condition 7.4(a) of this consent.
- (f) Except in the circumstances described in 7.4(g), flow rates from the Okere Gates shall not drop below:
 - (i) A 6 hourly average flow of 7.9 m³/s; and
 - (ii) A seven-day rolling average flow of 9.84 m³/s.
- (g) Flows may only drop below the flow rates specified in 7.4(f) in extreme droughts or when the Okere Gates are closed as a result of an emergency.

- (h) Maintaining minimum flows specified in condition 7.4(f) shall take precedence over maintaining minimum lake levels set out in condition 7.4(b).
- (i) During the operation of the Okere Gates, the 6 hourly average outflow of water through the gates must be equal to, or greater than the 6 hourly average inflow of water from the Ohau Channel.
- (j) When operating the Okere Gates, ramping rates for opening and closing the gates shall be as follows, except when the flow rate falls below 15m³/s as specified in condition 7.4(k):
 - (i) when opening the gates (i.e. increasing flows), a maximum flow increment of 10 m³/s in any one hour period; and
 - (ii) when closing the gates (i.e. decreasing flows):
 - (a) a maximum flow decrement of 5 m³/s in any one hour period when operating the Okere Gates below 30 m³/s; and
 - (b) a maximum flow decrement of 10 m³/s in any one hour when operating the Okere Gates at or above 30 m³/s.
- (k) Except in the circumstances described in condition 7.4(g), the maximum ramping rates for the Okere Gates when the flow rate falls below 15m³/s shall be a maximum increment or decrement of 4 m³/s in any 6 hour period.
- (l) Subject to compliance with conditions 7.4 (a) to 7.4(k), the consent holder shall operate the Okere Gates so as to provide recreational flows for rafting and kayaking in the Kaituna River. The magnitude and duration of the recreational flows shall be determined by the consent holder following consultation with the RTALOLG established under condition 11.1 of this consent.

8 Lake level monitoring

- 8.1 For the purpose of this condition “lake level” shall mean lake level as recorded by eliminating the effect of wave action.
- 8.2 The consent holder shall monitor the lake level of Lake Rotoiti to an accuracy of +/- 10mm at the Bay of Plenty Regional Council’s Okawa Bay level gauge. Levels shall be relative to Moturiki Datum and the Rotorua Fundamental survey benchmark.
- 8.3 The consent holder shall maintain a continuous record of lake level readings with any changes to data annotated and available on request by the Chief Executive of the Bay of Plenty Regional Council, or delegate, for consent monitoring purposes.

9 Ohau ki Rotoiti Kaitiaki Group

- 9.1 Within three months of the commencement of this consent, the consent holder shall facilitate the establishment of the Ohau ki Rotoiti Kaitiaki Group by invitation to each of the following (or their successors):
 - (a) Ngati Pikiao;
 - (b) Te Arawa Lakes Trust; and
 - (c) Other relevant Tangata Whenua having an interest in the Ohau Channel and Lake Rotoiti for the purposes of s.6(e) of the Resource Management Act 1991 and listed in Schedule 1 to this consent.
- 9.2 The purpose of the Ohau ki Rotoiti Kaitiaki Group is to:
 - (a) Facilitate discussion and free flow of information between the consent holder and the kaitiaki of Lake Rotoiti, Lake Rotorua, and the Ohau Channel on the environmental and cultural effects of the activities authorised by this consent;
 - (b) Facilitate discussion and free flow of information with the Okere ki Kaituna Kaitiaki Group;
 - (c) To develop a Rotoiti Cultural Management Plan;

- (d) To receive and discuss monitoring reports that the consent holder is required to produce under the conditions of this consent;
 - (e) To provide recommendations to the consent holder and the Regional Council on the environmental and Maori cultural effects of the activities authorised by this consent;
 - (f) To discuss any other relevant matters that may be agreed by the Ohau ki Rotoiti Kaitiaki Group; and
 - (g) To enable monitoring, by tangata whenua, of the environmental and cultural effects of the activities authorised by this consent as identified in the Rotoiti Cultural Management Plan.
- 9.3 Notwithstanding any other condition in this consent, the consent holder shall, at least once per calendar year, convene a meeting with representatives of the Bay of Plenty Regional Council and tangata whenua parties identified in condition 9.1 to discuss any matter relating to the exercise and monitoring of this consent.
- 9.4 The consent holder shall provide a written invitation to the members of the Ohau ki Rotoiti Kaitiaki Group at least 10 working days before the proposed meeting is to be held.
- 9.5 The meeting required by condition 9.3 need not occur if the Ohau ki Rotoiti Kaitiaki Group, or all of the tangata whenua parties listed in condition 9.1, advise the Bay of Plenty Regional Council that the meeting is not required.
- 9.6 The consent holder shall keep minutes of the meetings held in accordance with condition 9.3 and shall forward them to all attendees and to the Regional Council.
- 9.7 The meetings required by condition 9.3 shall be held at a convenient location as agreed by the Ohau ki Rotoiti Kaitiaki Group. The meetings shall as far as practicable take place on the same day and at the same venue as the meetings held by the Okere ki Kaituna Kaitiaki Group under condition 10 of this consent and the Liaison Group under condition 11 of this consent. The costs of the meeting (not including costs relating to attendees) shall be borne by the consent holder.
- 9.8 The meetings shall discuss any recommendations in the Rotoiti Cultural Management Plan and matters relevant to the purpose of the Ohau ki Rotoiti Kaitiaki Group.

Rotoiti Cultural Management Plan

- 9.9 Subject to the formation of the Ohau ki Rotoiti Kaitiaki Group, the consent holder will facilitate the development of a Rotoiti Cultural Management Plan to enable it to be produced by the Ohau ki Rotoiti Kaitiaki Group within three years of the commencement of this consent. The Rotoiti Cultural Management Plan may include, but shall not be limited to, the following objectives:
- (a) Identifying historical cultural practices which occurred along the Ohau Channel and Lake Rotoiti based on historic data and oral history, prior to the introduction of the Okere Control Gates and Ohau Weir.
 - (b) Identifying the environmental and cultural impacts on tangata whenua resulting from the operation of the Okere Control Gates and Ohau Weir, including for example any impacts on the health and wellbeing of the Ohau Channel and Lake Rotoiti, impacts on kai resources or access to waahi tapu resulting from the operation of the Okere Control Gates and Ohau Weir;
 - (c) Identifying improvements, including by way of lake management options or environmental restoration programmes, to address the environmental and cultural impacts and/or enable cultural practices to continue, where they have been affected by the operation of the Okere Control Gates and Ohau Weir;
 - (d) Identifying areas for members of the Tangata Whenua groups listed in condition 9.1 to undertake or be involved in any environmental monitoring or research to be undertaken in accordance with any conditions of this resource consent;

- (e) Provide recommendations to the consent holder in relation to the above matters and in relation to:
 - (i) Access to waahi tapu;
 - (ii) Lakeshore beach restoration;
 - (iii) Additional monitoring of beach erosion or native fishery resources;
 - (iv) The results of any surveys undertaken by Tangata Whenua on kai resources in Lake Rotoiti; and
 - (v) Any maps, data or other information regarding cultural or archaeological sites that the Ohau ki Rotoiti Kaitiaki Group considers appropriate to provide to the consent holder.

- 9.10 The consent holder shall if requested provide technical assistance where appropriate and all relevant information held by the consent holder to the Ohau ki Rotoiti Kaitiaki Group as necessary to enable the Ohau ki Rotoiti Kaitiaki Group to develop and produce the Rotoiti Cultural Management Plan.
- 9.11 Once developed, a copy of the Rotoiti Cultural Management Plan shall be provided to the consent holder, the Chief Executive of the Bay of Plenty Regional Council or delegate and the Rotorua Te Arawa Lakes Operational Liaison Group.
- 9.12 Once developed, the Ohau ki Rotoiti Kaitiaki Group and the consent holder shall meet to discuss and consider the recommendations in the Rotoiti Cultural Management Plan. In the event that any of the recommendations in the Rotoiti Cultural Management Plan can be implemented without the need for a review of this resource consent, the consent holder shall give genuine consideration to implementing those recommendations to the extent practicable.
- 9.13 The consent holder shall facilitate a review by the Ohau ki Rotoiti Kaitiaki Group of the Rotoiti Cultural Management Plan every fifth year after the completion of the initial Rotoiti Cultural Management Plan, if considered appropriate by the Ohau ki Rotoiti Kaitiaki Group. Conditions 9.9 to 9.12 shall apply to a review of the Rotoiti Cultural Management Plan.
- 9.14 The Ohau ki Rotoiti Kaitiaki Group referred to in this consent constitutes the same Kaitiaki Group referred to in Bay of Plenty Regional Council Resource Consent No. RC65980 and all meetings and actions arising out of conditions of this consent with respect the Ohau ki Rotoiti Kaitiaki Group and those in Bay of Plenty Regional Council Consent No. RC65980 are to be carried out together and as part of the same process.

10 **Okere ki Kaituna Kaitiaki Group**

- 10.1 Within three months of the commencement of this consent, the consent holder shall facilitate the establishment of the Okere ki Kaituna Kaitiaki Group by invitation to each of the following (or their successors):
 - (a) Tapuika;
 - (b) Te Arawa Lakes Trust; and
 - (c) Other relevant Tangata Whenua having an interest in the Kaituna River for the purposes of s.6(e) of the Resource Management Act 1991 and listed in Schedule 1 to this consent.
- 10.2 The purpose of the Okere ki Kaituna Kaitiaki Group is to:
 - (a) Facilitate discussion and free flow of information between the consent holder and the kaitiaki of the Kaituna River on the environmental and cultural effects of the activities authorised by this consent;
 - (b) Facilitate discussion and free flow of information with the Ohau ki Rotoiti Kaitiaki Group;
 - (c) To develop a Kaituna Cultural Management Plan;
 - (d) To receive and discuss monitoring reports that the consent holder is required to produce under the conditions of this consent;

- (e) To provide recommendations to the consent holder and the Regional Council on the environmental and Maori cultural effects on the Kaituna River of the activities authorised by this consent;
 - (f) To discuss any other relevant matters that may be agreed by the Okere ki Kaituna Kaitiaki Group; and
 - (g) To enable monitoring, by Tangata Whenua, of the environmental and cultural effects of the activities authorised by this consent as identified in the Kaituna Cultural Management Plan.
- 10.3 Notwithstanding any other condition in this consent, the consent holder shall, at least once per calendar year, convene a meeting with representatives of the Bay of Plenty Regional Council and tangata whenua parties identified in condition 10.1 to discuss any matter relating to the exercise and monitoring of this consent.
- 10.4 The consent holder shall provide a written invitation to the members of the Okere ki Kaituna Kaitiaki Group at least 10 working days before the proposed meeting is to be held.
- 10.5 The meeting required by condition 10.3 need not occur if the Okere ki Kaituna Kaitiaki Group, or all of the tangata whenua parties listed in condition 10.1, advise the Bay of Plenty Regional Council that the meeting is not required.
- 10.6 The consent holder shall keep minutes of the meetings held in accordance with condition 10.3 and shall forward them to all attendees and to the Regional Council.
- 10.7 The meetings required by condition 10.3 shall be held at a convenient location as agreed by the Okere ki Kaituna Kaitiaki Group. The meetings shall as far as practicable take place on the same day and at the same venue as the meetings held by the Ohau ki Rotoiti Kaitiaki Group under condition 9 of this consent and the Liaison Group under condition 11 of this consent. The costs of the meeting (not including costs relating to attendees) shall be borne by the consent holder.
- 10.8 The meetings shall discuss any recommendations in the Kaituna Cultural Management Plan and matters relevant to the purpose of the Okere ki Kaituna Kaitiaki Group.

Kaituna Cultural Management Plan

- 10.9 Subject to the formation of the Okere ki Kaituna Kaitiaki Group, the consent holder will facilitate the development of a Kaituna Cultural Management Plan to enable it to be produced by the Okere ki Kaituna Kaitiaki Group within three years of the commencement of this consent. The Kaituna Cultural Management Plan may include, but shall not be limited to, the following objectives:
- (a) Identifying historical cultural practices which occurred along the Kaituna River based on historic data and oral history, prior to the introduction of the Okere Control Gates.
 - (b) Identifying the environmental and cultural impacts on tangata whenua resulting from the operation of the Okere Control Gates, including for example any impacts on the health and wellbeing of the Kaituna River, impacts on kai resources or access to waahi tapu resulting from the operation of the Okere Control Gates;
 - (c) Identifying improvements, including by way of gate management options or environmental restoration programmes, to address the environmental and cultural impacts and/or enable cultural practices to continue, where they have been affected by the operation of the Okere Control Gates;
 - (d) Identifying areas for members of the Tangata Whenua groups listed in condition 10.1 to undertake or be involved in any environmental monitoring on the Kaituna River or research to be undertaken in respect of the Kaituna River in accordance with any conditions of this resource consent;

- (e) Provide recommendations to the consent holder in relation to the above matters and in relation to:
 - (i) Access to waahi tapu;
 - (ii) Kaituna River restoration;
 - (iii) The results of any surveys undertaken by tangata whenua on kai resources in Kaituna River; and
 - (iv) Any maps, data or other information regarding cultural or archaeological sites that the Okere ki Kaituna Kaitiaki Group considers appropriate to provide to the consent holder.

10.10 The consent holder shall if requested provide technical assistance where appropriate and all relevant information held by the consent holder to the Okere ki Kaituna Kaitiaki Group as necessary to enable the Okere ki Kaituna Kaitiaki Group to develop and produce the Kaituna Cultural Management Plan.

10.11 Once developed, a copy of the Kaituna Cultural Management Plan shall be provided to the consent holder, the Chief Executive of the Bay of Plenty Regional Council or delegate and the Rotorua Te Arawa Lakes Operational Liaison Group.

10.12 Once developed, the Okere ki Kaituna Kaitiaki Group and the consent holder shall meet to discuss and consider the recommendations in the Kaituna Cultural Management Plan. In the event that any of the recommendations in the Kaituna Cultural Management Plan can be implemented without the need for a review of this resource consent, the consent holder shall give genuine consideration to implementing those recommendations to the extent practicable.

10.13 The consent holder shall facilitate a review by the Okere ki Kaituna Kaitiaki Group of the Kaituna Cultural Management Plan every fifth year after the completion of the initial Kaituna Cultural Management Plan, if considered appropriate by the Okere ki Kaituna Kaitiaki Group. conditions 10.9 to 10.12 shall apply to a review of the Kaituna Cultural Management Plan.

11 **Rotorua Te Arawa Lakes Operational Liaison Group**

11.1 Within three months of the commencement of this consent the consent holder shall facilitate the establishment of a Rotorua Te Arawa Lakes Operational Liaison Group ("RTALOLG") for the purpose of:

- (a) Facilitating discussion and free flow of information between the consent holder and the community on the operations and environmental effects of the activities authorised by this consent;
- (b) Providing feedback on the effects of the implementation of the Operational Management Plan; and
- (c) Providing a forum to seek community input into resolving any difficulties in achieving the target lake level ranges set out in this consent and the Operational Management Plan referred to in condition 7.1 of this consent.

11.2 Within six months of the commencement of this consent, and following the establishment of the RTALOLG, the consent holder shall submit to the Chief Executive of the Bay of Plenty Regional Council, or delegate, Rotorua Te Arawa Lakes Operational Liaison Group terms of reference (TOR). The TOR shall be developed in consultation with the RTALOLG.

11.3 The RTALOLG TOR shall detail the procedures for the establishment and ongoing involvement of the RTALOLG and shall, as a minimum, address the following matters:

- (a) The location and frequency of meetings of the RTALOLG (to take place in Rotorua at least annually in the first three years of the commencement of the consent and thereafter at least every third year);

- (b) The parties to be invited to participate in the RTALOLG, including but not limited to at least one representative of the following (or their successors, if appropriate):
 - Te Arawa Lakes Trust;
 - Ngati Pikiao;
 - Tapuika;
 - Other relevant Tangata Whenua;
 - Kaituna Catchment Control Scheme;
 - Rotorua District Council;
 - Lake Rotoiti Community Association Incorporated;
 - Rotorua Lakes Community Board;
 - Department of Conservation;
 - Tamatea Street Ratepayers Association;
 - Fish and Game;
 - The commercial rafting/kayaking community; and
 - (c) Meeting procedures, including arrangements for election of a chair and definition of procedures;
 - (d) The nature of information to be provided to the RTALOLG including copies and summaries of the reports and complaints register required in accordance with conditions of this resource consent; and
 - (e) Procedures for reporting the outcomes of RTALOLG to the consent holder and the Chief Executive of the Bay of Plenty Regional Council or delegate.
- 11.4 Any changes to the RTALOLG terms of reference that occur as a result of consultation with the RTALOLG shall be provided in writing by the consent holder to the Chief Executive of the Bay of Plenty Regional Council or delegate.
- 11.5 The Rotorua Te Arawa Lakes Operational Liaison Group referred to in this consent may constitute the same group referred to in Bay of Plenty Regional Council Resource Consent No. RC65980 and all meetings and actions arising out of conditions of this consent with respect the Rotorua Te Arawa Lakes Operational Liaison Group and those in Bay of Plenty Regional Council Consent No. RC65980 may be carried out together and as part of the same process.
- 12 Mitigation works**
- 12.1 Within 6 months of the commencement of this consent, the consent holder shall, subject to obtaining the written approval of the Rotorua District Council, install a flapgate on the outlet of stormwater culvert that discharges to the Ohau Channel, subject to the design of the flapgate being approved by the Chief Executive of the Bay of Plenty Regional Council, or delegate. The flapgate is to be designed to prevent water from the Ohau Channel entering the stormwater culvert. Once installed the flapgate shall be maintained by the consent holder in good working order.
- 12.2 Within 12 months of the commencement of this consent, the consent holder shall, subject to obtaining the written consent of the affected landowner/s, construct earth bunding at low lying properties located adjacent to the Ohau Channel in accordance with the Application and as updated in Memorandum dated 25 November 2010 from Robbin Britton. Where the bund crosses existing open drains, flapgates shall be installed to prevent water from the Ohau Channel entering the drains. Once installed the flapgates shall be maintained by the consent holder in good working order.

- 12.3 Within 6 months of the commencement of this consent, the consent holder shall, subject to obtaining the written consent of the landowner, apply herbicide for a maximum width of 2.0 m to the landward side of beaches at Hinehopu and Ruato Bay with the objective of widening the beaches. There shall be no direct discharge of herbicide to Lake Rotoiti and the consent holder shall remove any dead vegetation resulting from the application of the herbicide. The application of herbicide shall occur at least annually thereafter, for the duration of this consent.

13 Flushing – Ohau Channel

- 13.1 Subject to condition 13.5, flushing of the Ohau Channel shall be carried out once a year between 1 May and 30 September as provided for and subject to the distribution in condition 7.4(b)(i)(a) and subject to condition 7.4(i). Flushing shall be undertaken by controlling Lake Rotoiti levels to fall to a level of RL 279.00 m and be held at that level until rainfall allows a return to RL 279.10 m.
- 13.2 The consent holder shall arrange monitoring, at appropriate location and intervals (to be determined following consultation with Fish and Game New Zealand and the consent authority), of the flow velocity in the Ohau Channel between 1 May and 30 June and again between 1 October and 30 November for each year for the duration of this consent. The purpose of this monitoring is to determine any effects of the flush on the velocities within the Ohau Channel.
- 13.3 The consent holder shall provide the results of the monitoring required by condition 13.2 to the consent authority, Fish and Game New Zealand and the Ohau ki Rotoiti Kaitiaki Group by 31 October each year for the duration of this consent.
- 13.4 Prior to carrying out any flushing of the Ohau Channel, the consent holder shall give a minimum of 48 hours' notice to the public of their intention to carry out the flushing, the expected duration of the flush and the anticipated levels of Lake Rotoiti during the flush. Such notice shall be given in accordance with the methods set out in the Operational Management Plan referred to in condition 7.1 of this consent.
- 13.5 Flushing shall not occur if a warning has been issued by the Medical Officer of Health in relation to cyanobacteria levels for Lake Rotorua, Lake Rotoiti or the Kaituna River in accordance with the Ministry for the Environment Interim New Zealand Guidelines for Cyanobacteria in Recreational Fresh Waters.

14 Hinehopu investigation

- 14.1 Within 3 months of the commencement of this consent, groundwater monitoring shall be undertaken in Tamatea Street, Hinehopu. Groundwater monitoring shall:
- (a) Be carried out for a minimum period of 12 months. Following this period of groundwater monitoring, the monitoring results shall be analysed by the consent holder and submitted to the Chief Executive of the Bay of Plenty Regional Council, or delegate. If it is determined by the Chief Executive of the Bay of Plenty Regional Council, or delegate, that the results do not represent typical years in terms of regional climate and the range of recorded lake levels, then monitoring shall continue for a further year.
 - (b) Groundwater monitoring shall be carried out using 15-minute interval automatic groundwater recorders at 48 Tamatea Street, Hinehopu as specified in section 5.7 of the *'Preliminary Groundwater Study of Tamatea Street, Hinehopu, Lake Rotoiti'* prepared by Robbin Britton and dated November 2010.
 - (c) The consent holder shall monitor the groundwater levels to an accuracy of +/- 20 mm. Levels shall be relative to Moturiki datum and the Rotorua Fundamental Benchmark.
- 14.2 The consent holder shall prepare a report on the results of the groundwater monitoring by a suitably qualified and independent expert in the field of groundwater analysis. The report shall, at a minimum, include the following information:
- (a) A map showing the locations of groundwater monitoring;

- (b) A record of the groundwater levels and relative lake levels;
 - (c) An analysis of the correlation between the lake levels and groundwater.
- 14.3 If the report concludes that there is a correlation between the levels of the lake and the groundwater levels at Hinehopu, then within six months of the completion of the report the consent holder shall develop a recommended programme of works designed to mitigate any adverse effects of the elevated lake levels on the use and enjoyment of the dwellings in Tamatea Street, Hinehopu. The recommended programme of mitigation works shall be developed in consultation with the RTALOG, the Ohau ki Rotoiti Kaitiaki Group and affected landowners. The recommended programme of mitigation works shall be submitted to the Chief Executive of the Bay of Plenty Regional Council, or delegate.
- 14.4 The consent holder shall thereafter implement the recommended programme of mitigation works, subject only to the need to gain any necessary further resource consents for the works and any timing constraints occasioned by Local Government Act funding obligations.
- 15 Annual reporting**
- 15.1 By 31 August each year for the term of this consent the consent holder shall provide a report to the Chief Executive of the Bay of Plenty Regional Council or delegate, the Rotorua Te Arawa Lakes Operational Liaison Group and the Ohau ki Rotoiti Kaitiaki Group setting out:
- (a) the actual distribution of lake levels compared to the target distribution;
 - (b) the actual flows rates of the Okere Gates compared to the minimum flow rates;
 - (c) any difficulties experienced by the consent holder in achieving the target lake level ranges and minimum Okere Gate flow rates;
 - (d) a summary of any consultation undertaken with stakeholders in accordance with conditions 9, 10, 11 and 14 of this consent;
 - (e) a summary of any investigations undertaken as a result of complaints about the adverse effects of lake levels;
 - (f) methods for how any difficulties in achieving target lake level ranges and Okere Gate minimum flows have and will be resolved and how any complaints about the adverse effects of lake levels have been responded to; and
 - (g) methods proposed to resolve any issues that may have arisen including operational difficulties, water quality, and extreme weather events, and any changes required to the Operation Management Plan.
- 16 Access**
- 16.1 The consent holder shall maintain foot access across the Okere Gates control structure.
- 17 Review**
- 17.1 The Bay of Plenty Regional Council may, annually in the month of September, serve notice of its intention to review any conditions of this consent under s.128 of the Resource Management Act 1991 for purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage.
- 17.2 The purposes of this review may include, but are not be limited to:
- (a) To modify the lake level regime or minimum flows specified in condition 7.4 of this consent;
 - (b) To modify any required monitoring/reporting and/or specify additional monitoring/reporting and/or change the monitoring/reporting frequency required to address any identified adverse effects;
 - (c) To assess, and if necessary to resolve, any identified adverse effects arising as a result of the exercise of this consent.

Cultural Management Plan review

- 17.3 The Bay of Plenty Regional Council may, within 3 months of receiving the Rotoiti Cultural Management Plan in accordance with conditions 9.11 or 9.13 or the Kaituna Cultural Management Plan in accordance with conditions 10.11 or 10.13 or receiving a written request from the Ohau ki Rotoiti Kaitiaki Group or the Okere ki Kaituna Kaitiaki Group, serve notice of its intention to review any conditions of this consent under s.128 of the Resource Management Act 1991 for the purposes of dealing with any adverse environmental or cultural effects on the environment identified in the Rotoiti Cultural Management Plan or Kaituna Cultural Management Plan.
- 17.4 In deciding whether to exercise its discretion under condition 17.3 the Bay of Plenty Regional Council shall have particular regard to the recommendations contained in the Rotoiti Cultural Management Plan and/or the Kaituna Cultural Management Plan as the case may be.
- 17.5 The purposes of any review under condition 17.3, which may be the same or separate reviews at the consent authority's discretion, may include, but are not limited to:
- (a) Implementing any of the recommendations contained in the Rotoiti Cultural Management Plan and/or the Kaituna Cultural Management Plan;
 - (b) The matters listed in condition 16.2 (a)-(c).
- 17.6 For the avoidance of doubt, any review pursuant to condition 16.3 may impose further or additional review conditions for the purpose of ensuring the adequacy of the conditions in avoiding, remedying or mitigating the cultural and spiritual effects of the activities authorised by this consent and to amend the conditions or add further conditions if necessary.

18 Term of consent

- 18.1 This consent shall expire 35 years from the date this consent was granted.

Advice Notes

- 1 *The Chief Executive of the Regional Council or delegate as referred to in this consent is the person responsible for monitoring and enforcing compliance with the conditions of this consent.*
- 2 *Any notification or reporting required to be made to the Chief Executive of the Regional Council or delegate under this consent shall be e-mailed to notify@envbop.govt.nz.*
- 3 *This consent does not authorise the holder to modify or disturb any archaeological or historic sites within the area affected by this consent. Should any artefacts, bones or any other sites of archaeological or cultural significance be discovered within the area affected by this operation, written authorisation should be obtained from the Historic Places Trust before any damage, modification or destruction is undertaken.*
- 4 *The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractors.*
- 5 *The consent holder is responsible for ensuring that all contractors carrying out works under this consent are made aware of the relevant consent conditions, plans and associated documents.*
- 6 *The works described in condition 12.2 shall be undertaken in accordance with the consent holder's existing stream care consent 64684.*
- 7 *The works described in condition 12.3 shall be undertaken as a permitted activity in accordance with Rules 21(e) and (f) of the Bay of Plenty Regional Water and Land Plan.*
- 8 *Tapuika Iwi Authority, which has the right to representation on the Okere ki Kaituna Kaitiaki Group and Operational Liaison Groups referred to in conditions 10 and 11, is in negotiations with the Crown in relation to its Treaty of Waitangi Claim concerning interests in the Kaituna River. Any outcome of those negotiations may contain provisions which affect this consent.*

BAY OF PLENTY REGIONAL COUNCIL

Resource Consent 65980

Consent Holder: Bay of Plenty Regional Council (Rivers and Drainage Group)

Address: PO Box 364
Whakatane

Resource consent to:

- (i) Use and maintain a control structure, being the Ohau Channel Weir at the outlet of Lake Rotorua; and
- (ii) Dam the outlet of lake Rotorua, being at or about map reference NZMS 260 U15018454; and
- (iii) Artificially control the water levels in Lake Rotorua; and
- (iv) Discharge water from Lake Rotorua over the Ohau Channel Weir.

Conditions attaching to Resource Consent 65980

1 Proceed in accordance with application, except as modified by conditions

The Proposal shall proceed in accordance with the Application, including:

- (i) The Resource Consent Application and Assessment of Environmental Effects for the Okere Gates and Ohau Channel Weir prepared by Opus international Consultants Limited, referenced as 289030.07, dated September 2010, including all appendices attached to the Application.
- (ii) The further information entitled *Resource Consents 65979 and 65980: Consent Structures and Operating Levels for Lake Rotorua and Rotoiti – Response to s92 Request dated 23 September 2010*, prepared by the Project Manager, Okere Gates and Ohau Weir Consent Project dated 22 October 2010, including all appendices.

except as modified by the conditions set out in this consent.

2 Purpose

To allow for the use of the Ohau Channel Weir on the bed of the Ohau Channel at the outlet of Lake Rotorua and to control the water level of Lake Rotorua with the objective of avoiding undesirably low lake levels.

3 Location

The structure shall be located at the outlet of Lake Rotorua as shown on BOPRC plan number RC65980/1 (BOPCB K4562 sheet 4/9) and RC65980/2 (BOPRC K4562 sheet 9/9) submitted with the application.

4 Map reference

At or about map reference NZMS 260 U15 018 454.

5 Ohau weir control structure

5.1 The existing control structure shall be retained. It shall conform to the following:

- (a) The control structure shall be a two stage broad crested weir installed in accordance with BOPCB plan number K4562 sheet 2 and BOPRC K4562 sheet 9.
- (b) The central lower portion of the control structure shall be at least 6 m wide.

- (c) The control structure crest levels shall be:
 - (i) the central lower crest 278.166 m above Moturiki Datum, and
 - (ii) the top crest 279.316 above Moturiki Datum.

All levels shall be relative to the Rotorua Fundamental Benchmark Survey 1997.

6 Fish passage

- 6.1 The Consent holder shall maintain and keep the fish passage facility in good working order.

7 Structure and maintenance

- 7.1 The Consent holder shall maintain the control structure in accordance with the requirements of the Rivers and Drainage Group Asset Management Plan (AMP). The Consent holder shall monitor the control structure for erosion and structural damage on a regular basis.
- 7.2 The Consent holder shall, within 10 working days of becoming aware of any damage or repair required, shall:
 - (a) Repair any erosion to the lakeside and Ohau Channel within 30 metres of the weir that is caused by the exercise of this consent.
 - (b) Repair any damage to the weir or handrail structures.
 - (c) Repair and maintain the fish pass mechanisms to operate effectively as designed in report Environment BOP, Environmental Report 96/18.
- 7.3 The consent holder shall appoint a caretaker to check weed and debris build up on the structure. The structure shall be checked for the presence of any weed and debris at least once a month and any weed and debris shall be removed.

8 Lake Rotorua level management

Operational Management Plan

- 8.1 Within one month of the commencement of this consent, the consent holder shall submit an Operational Management Plan to the Chief Executive of the Bay of Plenty Regional Council or delegate.
- 8.2 The Operational Management Plan shall contain details of the procedures that shall be implemented for the operation of the Okere Gates in accordance with the conditions of this resource consent, and as a minimum, shall address the following matters:
 - (a) A description of how the weir operates;
 - (b) Lake Rotorua Operational Guidelines, including guidelines for removing and installing stoplogs;
 - (c) Plans of the Ohau Channel Weir;
 - (d) A description of routine inspection and maintenance procedures to be undertaken with respect to the Ohau Channel Weir;
 - (e) A description of monitoring, including location of water level monitoring devices and record keeping of all monitoring;
 - (f) A description of methods to address potential public and site personnel safety issues associated with the operation of the Ohau Channel Weir, including subsequent changes in levels for Lake Rotorua and flows in the Ohau Channel (which may include use of signage, electronic media and establishing and maintaining a text messaging database);
 - (g) A description of procedures for reporting on the operation of the Ohau Channel Weir, with particular regard to the requirements of this consent to the Bay of Plenty Regional Council and key stakeholder groups;

- (h) A description of how any difficulties or unforeseen circumstances affecting the successful operation of the Ohau Channel Weir and lakes levels will be reported to the Bay of Plenty Regional Council and key stakeholder groups, and how such difficulties or circumstances will be addressed.

- 8.3 The Operational Management Plan may be reviewed and updated by the consent holder from time to time. The consent holder shall provide a copy of the reviewed and updated Operational Management Plan to the Chief Executive of the Bay of Plenty Regional Council or delegate.

Operational limits

- 8.4 The lake level for operational purposes shall be recorded at NIWA's Mission Bay level gauge.

- 8.5 The control structure shall be operated in accordance with the Operational Management Plan referred to in condition 8.1 of this consent, so that as far as is practicable the level of Lake Rotorua is maintained between the following fixed maximum and minimum levels above Moturiki Datum:

- (a) Maximum level RL 280.076 m.

- (b) Minimum level RL 279.466 m.

- 8.6 The minimum and maximum lake levels referred to in condition 8.5 may only be exceeded in circumstances associated with emergencies, extreme weather events or extreme droughts.

9 Lake level monitoring

- 9.1 For the purpose of this condition "lake level" shall mean lake level as recorded by eliminating the effect of wave action.

- 9.2 The Consent holder shall maintain a daily record of the lake level of Lake Rotorua (measured at the location specified in condition 8.4 above) and shall provide this information on request to the Chief Executive Officer of the Regional Council, or delegate, for consent monitoring purposes.

- 9.3 The consent holder shall monitor the lake level of Lake Rotorua to an accuracy of +/- 10 mm at the Mission Bay level gauge. Levels shall be relative to Moturiki Datum and the Rotorua Fundamental benchmark survey 1997.

- 9.4 The consent holder shall maintain a continuous record of lake level readings with any changes to data annotated and available on request to the Chief Executive of the Regional Council, or delegate, for consent monitoring purposes.

10 Ohau ki Rotoiti Kaitiaki Group

- 10.1 The Ohau ki Rotoiti Kaitiaki Group referred to in Bay of Plenty Regional Council Resource Consent No. RC65979 shall also be utilised for the exercise of this consent and conditions 9.1 to 9.15 of Consent No. RC65979 shall apply to this consent with references to Lake Rotoiti being taken to refer instead to Lake Rotorua.

11 Rotorua Te Arawa Lakes Operational Liaison Group

- 11.1 The Rotorua Te Arawa Lakes Operational Liaison Group ("RTALOLG") referred to in Bay of Plenty Regional Council Resource Consent No. RC65979 shall also be utilised for the exercise of this consent and conditions 11.1 to 11.4 of Consent No. RC65979 shall apply to this consent with references to Lake Rotoiti being taken to refer instead to Lake Rotorua.

12 Annual reporting

- 12.1 By 31 August each year for the term of this consent the consent holder shall provide a report to the Chief Executive of the Bay of Plenty Regional Council or delegate, the Rotorua Te Arawa Lakes Operational Liaison Group the Ohau ki Rotoiti Kaitiaki Group and the Okere ki Kaituna Kaitiaki Group setting out:
- (a) the actual distribution of lake levels compared to the target range;
 - (b) any difficulties experienced by the consent holder in achieving the target lake level range;
 - (c) a summary of any consultation undertaken with stakeholders in accordance with conditions 10 and 11 of this consent;
 - (d) a summary of any investigations undertaken as a result of complaints about the adverse effects of lake levels;
 - (e) methods for how any difficulties in achieving target lake level range have and will be resolved and how any complaints about the adverse effects of lake levels have been responded to; and
 - (f) methods proposed to resolve any issues that may have arisen including operational difficulties, water quality, and extreme weather events, and any changes required to the Operation Management Plan

13 Access

- 13.1 The consent holder shall maintain the existing foot access on the right bank of the Ohau Channel 40 metres downstream from the Ohau Channel Weir.

14 Review

- 14.1 The Bay of Plenty Regional Council may, annually in the month of September, serve notice of its intention to review any conditions of this consent under s.128 of the Resource Management Act 1991 for purposes of dealing with any adverse effect on the environment which may arise from the exercise of the consent and which is appropriate to deal with at a later stage.
- 14.2 The purposes of this review may include, but are not be limited to:
- (a) To modify the lake level regime specified in condition 8.5 of this consent;
 - (b) To modify any required monitoring/reporting and/or specify additional monitoring/reporting and/or change the monitoring/reporting frequency required to address any identified adverse effects;
 - (c) To assess, and if necessary to resolve any identified adverse effects arising as a result of the exercise of this consent.

15 Term of consent

- 15.1 This consent shall expire 35 years from the date this consent was granted.

Advice Notes

- 1 *The Chief Executive of the Regional Council or delegate as referred to in this consent is the person responsible for monitoring and enforcing compliance with the conditions of this consent.*
- 2 *Any notification or reporting required to be made to the Chief Executive of the Regional Council or delegate under this consent shall be e-mailed to notify@envbop.govt.nz.*
- 3 *This consent does not authorise the holder to modify or disturb any archaeological or historic sites within the area affected by this consent. Should any artefacts, bones or any other sites of archaeological or cultural significance be discovered within the area affected by this operation, written authorisation should be obtained from the Historic Places Trust before any damage, modification or destruction is undertaken.*
- 4 *The consent holder is advised that non-compliance with consent conditions may result in enforcement action against the consent holder and/or their contractors.*
- 5 *The consent holder is responsible for ensuring that all contractors carrying out works under this consent are made aware of the relevant consent conditions, plans and associated documents.*
- 6 *The Okere ki Kaituna Kaitiaki Group (established pursuant to condition 10 in Bay of Plenty Regional Council Resource Consent No. RC65979) is a distinct group from the Ohau ki Rotoiti Kaitiaki Group referred to in condition 10.1 of this consent and is not relevant to this consent.*