Bathing Surveillance Grading Report 2008

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Cover Photo: Kaiate Falls

Executive Summary

Environment Bay of Plenty staff sampled bathing water in the Bay of Plenty in accordance with the Ministry for the Environment (MfE) and Ministry of Health (MoH) 'Microbiological Water Quality Guidelines for Marine and Freshwaters, 2003'. The MfE/MoH Guidelines have a system for grading beaches used for contact recreational activities based on indicator bacteria results and a catchment survey of potential microbiological hazards. This risk-based approach to monitoring water quality has the end result of a 'grade' that community and water managers alike can easily identify with to assess the risk of using recreational waters.

The purpose of this monitoring is for 'state of the environment' information and to assist Toi Te Ora Public Health and District Councils in health protection of the community.

The objective of this report is to provide information for recreational water managers and users which can be used to assess the risks of using those waters. The report does this by giving a 'grade' based on the MfE/MoH Guidelines for many of the Bay of Plenty's most popular and higher risk recreational waters.

A beach grade is made up of two components:

- The Sanitary Inspection Category (SIC) composed of five ratings from very low to very high dependant upon the presence and potential effect of faecal contaminant sources. It generates a measure of the susceptibility of a water body to faecal contamination from potential water quality risk factors close to swimming spots such as sewage outfalls, stormwater drains, stock in waterways and run-off from land; and

- Historical microbiological results, which generate a Microbiological Assessment Category (MAC), which provides a measurement of the actual water quality over time (last five years).

These two combined give an overall Suitability for Recreation Grade (SFRG), which describes the general condition of a site at any given time, based on both risk and indicator bacteria counts. There are five SFRG grades ranging from 'Very Good' to 'Very Poor'. The grades help to determine whether ongoing monitoring is required and provides the basis for telling people whether or not the water is suitable for recreational use, from a public health perspective. If further investigation is required a 'Follow Up' grade is given.

Over 80 beaches in the Bay of Plenty Region have been graded and the details are contained within this report.

A Suitability for Recreation Grade (SFRG) of 'Very Good' has been allocated to 44 % of sites monitored for bathing suitability. Together with the 'Good' and 'Fair' SFRG categories, these results indicate that around 70 % of Bay of Plenty sites monitored are suitable for swimming, although some sites should be treated with caution especially after rainfall events.

Grading results show that 26 % ('Poor' plus 'Very Poor' SFRG) of Bay of Plenty monitored recreational water sites present a health risk to recreational users on occasion (e.g. after rainfall).

Rivers have the highest percentage of 'Very Poor' graded sites. Contamination at these sites can be due to a combination of factors. The most common factor at such sites is the density of intensive and semi-intensive livestock-based agriculture. Other elements such as urban stormwater and industrial discharges can also be a factor at certain sites.

The lake sites and marine sites continue to be the safest locations for contact recreational pursuits. Most of these sites are found in the marine recreational areas with a smaller percentage of 'Very Good' graded sites occurring in rivers.

Catchment surveys above a new site at Kaiate Falls indicate local faecal contamination from livestock agriculture. The catchment of the Ngongotaha Stream has also been investigated with faecal contamination occurring high in the catchment with elevated levels often triggered by rain events.

Shellfish monitoring results are also presented from monitoring at five Tauranga Harbour locations and one location in Waihi Estuary. Results were generally within guideline levels for consumption, however some sites registered levels over the guideline after rainfall. Elevated indicator bacteria levels occurred on other occasions but the reasons for these contamination occurrences are unclear.

Three options are explored in the future development of Environment Bay of Plenty's bathing monitoring programme. The recommendation is to continue with the current programme as it provides the community with the best information under current resourcing levels.

Contents

Chapter 1: Introduction

This is the third grading report on bathing beach water quality and risks to recreational water users. The grading system is based on the 'Microbiological Water Quality Guidelines for Marine and Freshwaters (2003)', which is a document produced by the Ministry for the Environment and the Ministry of Health (hereafter referred to as the MfE/MoH Guidelines).

The MfE/MoH Guidelines aim to establish national consistency in recreational water quality and to protect the public when there is a health risk concerning microbiological contamination. The guidelines now consist of two parts, one being the standards and methods used to monitor recreational waters over the bathing season and two, a risk assessment of catchment components to provide a qualitative assessment of the risk to water users. This second component together with historic faecal indicator bacteria data come together to form a beach grade for any individual beach.

The objective of this report is to provide information for recreational water managers and users which can be utilised to assess the risks of using those waters. The report does this by giving a 'grade' based on the MfE/MoH Guidelines for many the Bay of Plenty's most popular and higher risk recreational waters.

This information provides a tool for water quality managers to aid in the creation and prioritisation of monitoring programmes and in the continued assessment and re-assessment of recreational water quality. It also gives the community a mechanism by which the risks of recreational pursuits in terms of microbiological water quality can be easily determined.

For the most part grading results can be considered as interim in this report as the faecal indicator bacteria data for many sites does not yet meet the guideline specifications (explained later). Interim grades do give a good indication of the risk present at recreational water sites and the status of these may be improved if future monitoring meets data requirements.

Suitability for recreation grades will also make up a national picture of water quality as the Ministry for the Environment reports these on a national scale.

Chapter 2: Beach Grading – Suitability for Recreation Grade (SFRG)

Beach grades are designed to gauge the general health of beaches (marine or freshwater). They aim to provide the public and water managers with an easy to understand system with which to judge the quality of a monitored beach.

A beach grading is made up of two components:

- The Sanitary Inspection Category (SIC) composed of five ratings from very low to very high dependant upon the presence and potential effect of faecal contaminant sources. It generates a measure of the susceptibility of a water body to faecal contamination from potential water quality risk factors close to swimming spots such as sewage outfalls, stormwater drains, stock in waterways and run-off from land; and

- Historical microbiological results, which generate a Microbiological Assessment Category (MAC), which provides a measurement of the actual water quality over time.

These two combined give an overall Suitability for Recreation Grade (SFRG) (Figure 1), which describes the general condition of a site at any given time, based on both risk and indicator bacteria counts. The five grades in the SFRG range from 'Very Good' to 'Very Poor'. Grades help determine whether ongoing monitoring is required and provides the basis for telling people whether or not the water is suitable for recreational use, from a public health perspective. If there is an incompatibility between the SIC and the MAC (this may be due to limited data) then a 'Follow Up' grade is given.

The Sanitary Inspection Category is developed from a Catchment Assessment Checklist (CAC) (Appendix 1), which explores land use, water use and characteristics, microbiological hazards, discharges, littoral drift, climatic influences, and other influences present in the catchment of the beach under analysis. Once a CAC is completed a Sanitary Inspection Category can be allocated. This has been implemented using the Bathewatch software downloaded from the MfE website.

The grading system developed by MfE and MoH is prescriptive with a view to keeping the grading system uncomplicated and user friendly. The only room for interpretation is within the CAC when determining microbiological hazards.

A microbiological hazard is assessed by answering the question "is the water quality in the recreational area affected, or likely to be affected by". This question has been answered based on the best available information and in some cases the water quality survey data used in a MAC has been used as the initial step in determining potential problems at some sites. However, in some cases experience and judgement have been used to determine if an effect is likely. For example, assessing whether water craft mooring near a site will have an affect on the site is made by examining the type of craft present, their density and whether water quality sampling has been carried out often enough to have picked up a potential

contamination. Putting these factors together to determine if an affect (i.e. a high risk) is likely, can come down to a judgement call.

The MAC is calculated as the 95 percentile of the last five years of historic faecal indicator bacteria data. Enterococci are the preferred indicator bacteria in marine waters and *Escherichia coli* (*E.coli*) are the indicator bacteria analysed for in freshwaters. Ideally at least 20 samples taken weekly over the bathing season over a five year period to provide at least 100 sample points for the MAC. This has not occurred for any Bay of Plenty sites to date and so MAC evaluations are based on available data. Table 1 shows the range of indicator bacteria counts that define the MAC.

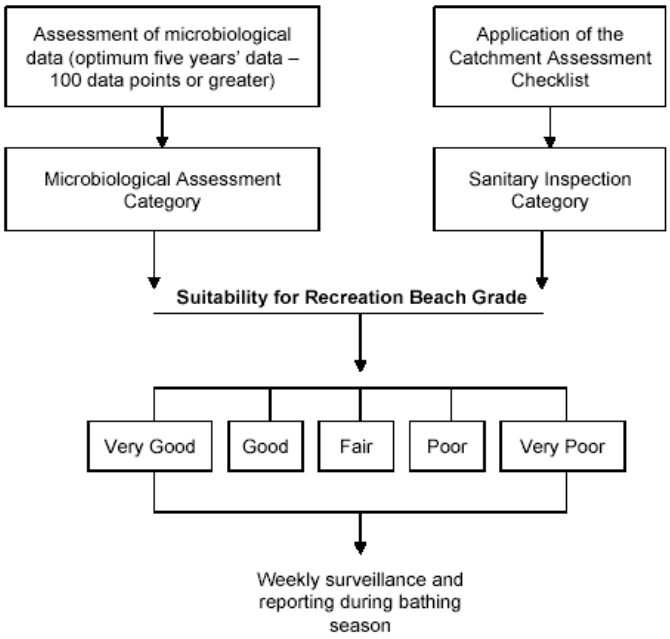

Figure 1: Components used to grade a beach (from MfE and *MoH, 2003)*

MAC for beaches in this report were calculated using Bathewatch software for data sets greater than 20. For data sets of less than 20 points an Excel spreadsheet using the Hazen method[1] to calculate the 95 percentile was used.

Once a grade has been determined for the SIC and MAC then a SFRG can be made. Table 2 shows the matrix for determining the SFRG.

Table 1: Microbiological Assessment Category (MAC) definitions (from MfE and MoH, 2003).

Marine waters	
A	Sample 95 percentile ≤ 40 Enterococci per 100 mL
B	Sample 95 percentile 41 - 200 Enterococci per 100 mL
C	Sample 95 percentile 201 - 500 Enterococci per 100 mL
D	Sample 95 percentile > 500 Enterococci per 100 mL
Freshwater	
A	Sample 95 percentile ≤130 *Escherichia coli* per 100 mL
B	Sample 95 percentile 131 - 260 *Escherichia coli* per 100 mL
C	Sample 95 percentile 260 - 550 *Escherichia coli* per 100 mL
D	Sample 95 percentile > 550 *Escherichia coli* per 100 mL

[1] For an explanation of the Hazen method see standard statistical text (e.g. Statistical Methods in Water Resources, D.R. Helsel and R.M. Hirsch (1992).

Table 2: Suitability for recreation grade (SFRG) (from MfE and MoH, 2003).

Susceptibility to faecal influence		**Microbiological Assessment Category** Indicator counts (as percentiles – see Table 1)			
		A	**B**	**C**	**D**
Sanitary Inspection Category (SIC)	**Very Low**	Very Good	Very Good	Follow Up**	Follow Up**
	Low	Very Good	Good	Fair	Follow Up**
	Moderate	Follow Up*	Good	Fair	Poor
	High	Follow Up*	Follow Up*	Poor	Very Poor
	Very High	Follow Up*	Follow Up*	Follow Up*	Very Poor

Notes

* Indicates unexpected results requiring investigation (reassess SIC and MAC). If after reassessment the SFRG is still 'follow up', then assign a conservative grade (i.e. the first grade to the right of the 'follow up' in the same SIC row). This follows the precautionary principle applied in public health.

** Implies non-sewage sources of indicators, and this should be verified. If after verification the SFRG is still 'follow up', then assign a conservative grade (i.e. the first grade after 'follow up' in the same MAC

An SFRG can be determined using the Bathewatch software or the matrix in Table 2. The Bathewatch software can also calculate a conservative interim grade for those sites that initially are graded as "Follow Up".

2.1 Explanation of Grades (from MfE/MoH, 2003)

Beaches are graded by considering microbiological monitoring results from previous years in combination with the factors in the catchment that may contribute faecal contamination to the beach. It is a risk-associated grading of the beach, meaning that it provides an indication of what the likely condition of the beach will be on any day. The following general explanation provides a description of each of the beach grades.

2.1.1 Very Good

Water-quality tests and assessment of potential contamination sources indicate beaches within this category are considered to have very good water-quality (see Table 1 for details). This indicates there may be some indirect run-off from low intensity agricultural/urban/rural/bush catchments, but there are likely to be no significant sources of faecal contamination.

Recommendation:

Considered satisfactory for swimming at all times, and therefore may not require monitoring on a regular basis.

2.1.2 Good

Water-quality tests and assessment of potential contamination sources indicate beaches within this category are considered to have generally good water-quality (see Table 1 for details). On occasions (such as after high rainfall) there may be an increased risk of contamination from run-off. Such sites receive run-off from one or more of the following sources and may contain animal or human faecal material:

- River discharges impacted by tertiary treated wastewater, combined sewer overflows, sewer overflows, intensive agricultural/rural catchments, significant feral bird/animal populations.
- River discharges impacted by; run-off from low-intensity agricultural/urban/rural catchment.

- Direct discharges from stormwater not contaminated by sewage, boat moorings or marinas.

- Direct discharges from low-intensity agriculture.

Recommendation:

Satisfactory for swimming most of the time. Exceptions may include following rainfall. Such beaches are monitored regularly throughout the summer season and warning signs will be erected if water quality deteriorates.

2.1.3 Fair

Water-quality tests and assessment of potential contamination sources indicate beaches within this category are considered to have generally fair water-quality (see Table 1 for details). However, events such as high rainfall increase the risk of contamination levels from run-off. Such sites receive run-off from one or more of the following sources and may contain animal or human faecal material:

- River discharges impacted by tertiary treated wastewater, combined sewer overflows, sewer overflows, intensive agricultural/rural catchments, significant feral bird/animal populations.

- River discharges impacted by run-off from low-intensity agricultural/urban/rural catchment.

- Direct discharges from stormwater not contaminated by sewage, boat moorings or marinas.

- Direct discharges from low-intensity agriculture.

Recommendation:

Generally satisfactory for swimming, though there are many potential sources of faecal material. Caution should be taken during periods of high rainfall, and swimming avoided if water is discoloured. Sites are monitored weekly and warning signs erected if water quality deteriorates.

2.1.4 Poor

Water-quality tests and assessment of potential contamination sources indicate beaches within this category are considered to have generally poor water-quality (see Table 1 for details). These sites receive run-off from one or more of the following sources and may contain animal or human faecal material:

- Tertiary treated wastewater.

- Urban stormwater, intensive agriculture, unrestricted stock access or dense bird populations.

- Low-intensity agriculture, marinas or boat moorings or urban storm water not contaminated by sewage.

- River discharges containing untreated/primary/secondary treated wastewater or on-site waste treatment systems river discharges impacted

by tertiary treated wastewater, combined sewer overflows, intensive agricultural/rural catchments or feral bird/animal populations.

Recommendation:

Generally not okay for swimming, as indicated by historical results. Swimming should be avoided, particularly by the very young, the very old and those with compromised immunity. Permanent warning signs may be erected at these sites, although councils may monitor these sites weekly and post temporary warnings.

2.1.5 Very Poor

Water-quality tests and assessment of potential contamination sources indicate beaches within this category are considered to have 'Very Poor' water-quality (see Table 1 for details). These sites receive run-off from one or more of the following sources and may contain animal or human faecal material:

- Untreated/primary/secondary treated wastewater.
- On-site waste treatment systems.
- Tertiary treated wastewater.
- Urban stormwater, intensive agriculture, unrestricted stock access or dense bird populations.
- River discharges containing untreated/primary/secondary treated wastewater or on-site waste treatment systems.

Recommendation:

Avoid swimming, as there are direct discharges of faecal material. Permanent signage will be erected at the beach stating that swimming is not recommended.

2.1.6 Follow Up

Indicates unexpected results requiring investigation (reassess SIC and MAC). If after reassessment the SFRG is still 'follow up', then assign a conservative grade (i.e. the first grade to the right of the 'follow up' in the same SIC row). This follows the precautionary principle applied in public health. Follow Up SFRG in the MAC 'D' category of SIC 'Very Low' and MAC 'C' category implies non-sewage sources of indicators, and this should be verified. If after verification the SFRG is still 'follow up', then assign a conservative grade (i.e. the first grade after 'follow up' in the same MAC.

2.2 Reporting

Environment Bay of Plenty has now set up a protocol in tandem with Toi Te Ora Public Health and District Councils in the Bay of Plenty region to monitor and report microbiological bathing water quality and this is consistent with the MfE/MoH Guidelines. Roles, responsibilities and accountability in the protocol are listed below.

2.2.1 Roles and Responsibilities

Agencies involved in the monitoring and reporting on recreational waters are the regional council, territorial authorities and District Health Boards and Medical Officer of Health. There is no legislation dictating which agency is responsible for recreational bathing monitoring, but under the Health Act (1956) and the Resource Management Act (1991) local agencies and the health authority have defined responsibilities. Based on these responsibilities, the MfE/MoH Guidelines provide a recommended framework for roles and responsibilities of the agencies involved in recreational water quality monitoring. These are:

i. The regional council co-ordinates the monitoring and reporting strategy.
ii. The regional council implements surveillance and alert-level monitoring.
iii. The Medical Officer of Health reviews the effectiveness of the monitoring and reporting strategy.
iv. The regional council informs the Medical Officer of Health and territorial authority if alert or action levels are reached.
v. The Medical Officer of Health will ensure that the territorial authority is informed.
vi. The territorial authority will inform the public when the action level is exceeded – the Medical Officer of Health will ensure the public is informed within agreed timeframes.
vii. If the action level is reached, the territorial authority will undertake nuisance monitoring and cause all proper steps to be taken to abate or remove the nuisance. On occasion it may be more appropriate for the regional council to undertake this duty. The Medical Officer of Health will provide advice and ensure that proper steps are taken by the territorial local authorities and/or regional councils.
viii. It is the responsibility of the Medical Officer of Health to ensure that sites with modified grades are audited in accordance with these guidelines.
ix. The regional council will collate the information for state of the environment reporting and a review of management policies.

**see Microbiological Water Quality Guidelines for Marine and Freshwater, 2003: G(viii) and H(xii) for further notes.*

Based on this framework a protocol for monitoring and reporting has been developed between respective agencies and is for the most part being implemented.

2.2.2 Accountability

The Regional Council is responsible for the monitoring and timely reporting of microbiological water quality sampling results to respective health authority and territorial authority personnel. Exceedences must be reported to the respective health authority and territorial authority personnel within 24 hours of completion of laboratory analysis.

The health authority is responsible for assessing whether sampling has shown that there is a public health risk and what action should be taken to inform the public of the problem, and if a sanitary survey should be undertaken.

The health authority will liaise with the respective authority or authorities to ensure proper steps are taken to abate nuisance and reduce the risk to public health.

When prompted by the health authority, the territorial authority is responsible for informing the public of any microbiological water quality health risk.

2.2.3 Regional Council's Role

As well as undertaking the regional monitoring, the reporting network includes a graphical website interface that is updated weekly during the bathing season, weekly result from the region reported electronically to respective authorities, and exceedences reported within 24 hours of sampling. Other councils and Toi Te Ora Public Health provide links from their websites to Environment Bay of Plenty's website for up to date monitoring information.

Media releases and Regional Guardian bulletins are posted as part of communicating the risk posed to recreational water users around the region. While it is not the Regional Councils direct responsibility, when needed signage or other appropriate warning methods will be posted when a direct threat to the communities wellbeing is recognised and other organisations may not be in a position to alert the community to the potential risks. This report will also provide updated information to the community on the state of popular contact recreations sites.

Chapter 3: Monitoring and Results

Seasonal bathing beach monitoring is used to provide an alert system to any contamination problems that may occur over the bathing season. Such monitoring occurs weekly or every second week at selected sites and when alert levels are reached, the public health agency and local authorities are informed. Sampling is then increased to determine if there is a continued health risk at that site.

Using the methods as described in the MfE/MoH Guidelines and as described in the previous chapter, over 80 marine and freshwater sites around the Bay of Plenty have been graded using the data collected over the last five seasons of bathing beach monitoring.

Some grades are interim, as microbiological data has not reached an optimum level according to the 2003 guidelines. The data does provide useful information to allow an assessment of perceived risk to users of recreational waters.

The results are presented in three tables grouped into marine sites, lake sites and river/stream sites. Tables give site description information, Hazen percentile (P) value, MAC score, SIC score, SFRG, and a conservative interim grade where applicable. Grades and MAC scores are based on the last five years of data from October 2003 to April 2008. Detailed site information is given in Appendix 3.

3.1 Discussion

Based on the last five years of data a Suitability for Recreation Grade (SFRG) of 'Very Good' has been allocated to 44 % of sites monitored for bathing suitability (Table 3). This is up on the 2006 Grading Report (SFRG 'Very Good' = 38.2%) primarily due to a more extensive data set. Together with the 'Good' and 'Fair' SFRG categories, these results indicate that around 70 % of Bay of Plenty sites monitored are suitable for swimming, although some sites should be treated with caution especially after rainfall events.

Grading results show that 26 % ('Poor' plus 'Very Poor' SFRG, Table 3) of Bay of Plenty monitored recreational water sites present a health risk to recreational users on occasion (e.g. after rainfall).

The bathing programme has five year's worth of data for most sites resulting in a reduced percentage of sites graded in the 'Follow Up' grade, just 4.7 % (Table 3) over the region. Improved catchment information and greater sampling frequencies have been the main reason for this improvement. Sites graded as 'Follow Up' occur due to an inconsistency between the SIC and the MAC. In such cases, often the SIC is 'Very High' due to the presence of faecal sources such as septic tanks and the MAC is rated 'A' or 'B' showing that actual monitoring has found contamination to be at a low to moderate level.

The opposite can also occur, where monitoring shows a relatively high level of contamination, but no source can be readily identified. Such an example occurs in some of our river monitoring sites that are adjacent to intensive livestock agriculture.

Table 3: Percentage of sites in each SFRG for marine, river and lake sites.

SFRG	Marine	Rivers	Lake	Region
Very Good	48.6%	24%	63.6%	**43.5%**
Good	14.3%	4%	4.5%	**8.2%**
Fair	25.7%	12%	13.6%	**17.6%**
Poor	5.7%	48%	9.0%	**22.4%**
Very Poor	2.9%	8%	0.0%	**3.5%**
Follow Up	2.9%	4%	9.0%	**4.7%**

The lake sites and marine sites continue to be the safest locations for contact recreational pursuits. Most of these sites are found in the marine recreational areas with the smallest percentage of 'Very Good' graded sites occurring in rivers.

Sites graded 'Very Poor' were found only at river sites and sites graded 'Poor' were also high at river sites. Contamination at these sites can be a combination of factors, however the most common element is level of intensive and semi-intensive livestock based agriculture within the catchments. Other elements such as urban stormwater and industrial discharges can also be a factor at certain sites.

The percentage days in compliance (monitored days below the red alert guideline) are given in Tables 4 to 6. Percentage days in compliance is another indicator of risk to recreational water users, where a low percentage (e.g. <90%) indicates a risk to users. Caution must be used when interpreting this indicator, as rainfall can generate high results.

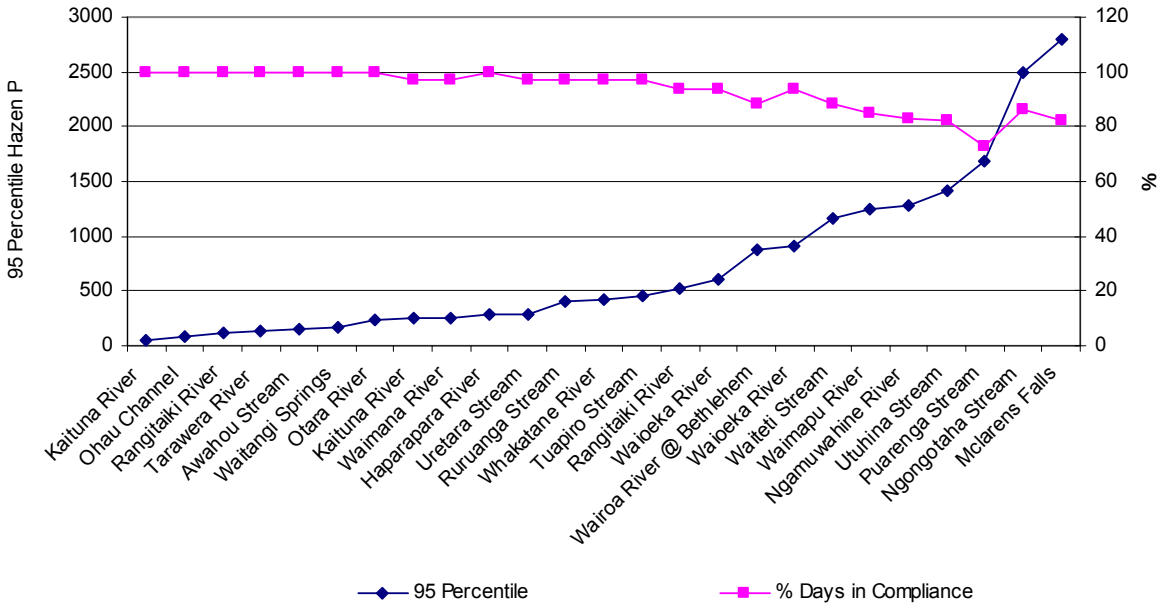

Figure 2 95 Percentiles and Percentage Days in Compliance, River sites, 2003 to 2008.

Percentage days in compliance has a good correlation with the Hazen 'P' 95 percentile (used for the MAC category) for all sites except the open coastal sites and lake sites (estuarine sites: r=-0.866, p<0.01 n=16; river sites: r=-0.952, p=0.01, n=24; lake sites: r=-0.487, p<0.05, n=21). This relationship is illustrated in Figure 2 for the river sites monitored in the Bay of Plenty. Two sites do not follow the trend of increasing percentile to decreasing percentage days in compliance, these are the Ngongotaha Stream and the Wairoa River at McLarens Falls. Both waterways have consistently elevated results affecting the Hazen percentile with some non-compliance days.

3.2 Further Site Monitoring

Kaiate Falls is a popular recreational area in the Welcome Bay area of Tauranga. Kaiate Stream passes through a series of rock pools and water falls before passing into the Waitao Valley. The area was included in the Environment Bay of Plenty bathing surveillance programme through monitoring work being carried out by the Te Awa O Waitao Joint Steering Group in 2007. The group in liaison with NIWA had consistently found E.coli levels from the Kaiate Falls area above the red alert mode given in the MfE/MoH Guidelines.

Summer surveillance monitoring found similar high concentrations at times (Figure 3) which resulted in Toi Te Ora Public Health issuing a health warning in December of 2007. Warning signs were duly erected and the catchment above the falls was surveyed.

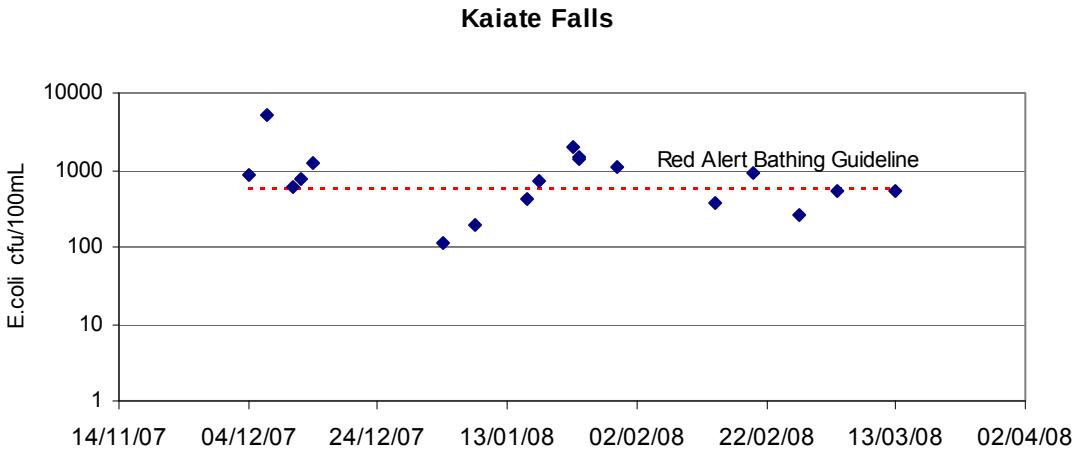

Figure 3 E.coli concentrations, Kaiate Falls.

The catchment above Kaiate Falls consists of a series of incised tributaries through pastoral land-use and then native bush/forest in the upper catchment. Stock have access to the lower tributaries. Monitoring of the tributaries before they enter the Kaiate Stream indicated elevated E.coli concentrations (Figure 4) indicating stock are potentially impacting the bacterial water quality of the stream.

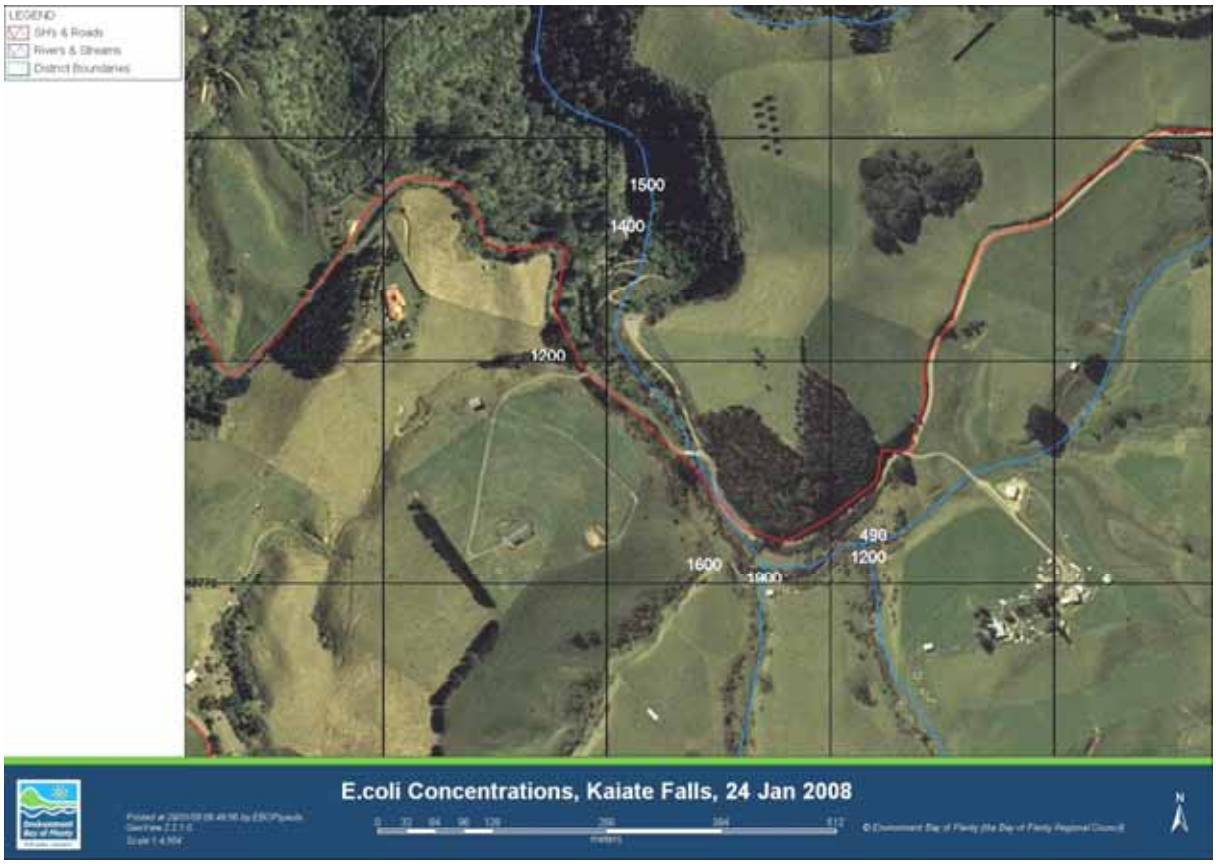

Figure 4 E.coli concentrations (cfu/100ml), Upper Kaiate Stream.

The Ngongotaha Stream site monitored at Railway Bridge has on several occasions displayed *E.coli* concentrations above the amber mode bathing guideline level (Figure 5) for the past two summer seasons. Often elevated concentrations have been associated with rainfall events, but not always.

A small catchment survey was undertaken in early 2008 to ascertain if elevated results were also occurring higher up in the catchment. Figure 6 shows that some faecal contamination is detected near the headwaters of the stream but this increases downstream below a wildlife park containing a variety of ponds. *E.coli* levels are variable further down with the higher results (>900 *E.coli*/100ml) being found after a rain event that occurred on 27 March 2008. However, this has not impacted the regular sampling site results at the Railway Bridge, but this may be due to variability in the water or dilution from urban stormwater.

The only discharge consents in the catchment are for onsite wastewater treatment systems, a jet boat operation and various stormwater discharges within the urban area. There is potential for an increase in urban development to have added to the stormwater loading to the stream, however it would seem that faecal contamination is occurring much higher up in the catchment. As most of the catchment is a mixture of pastoral lands and forestry with the lower catchment urbanised, there are a range of sources that are potentially contributing to contamination.

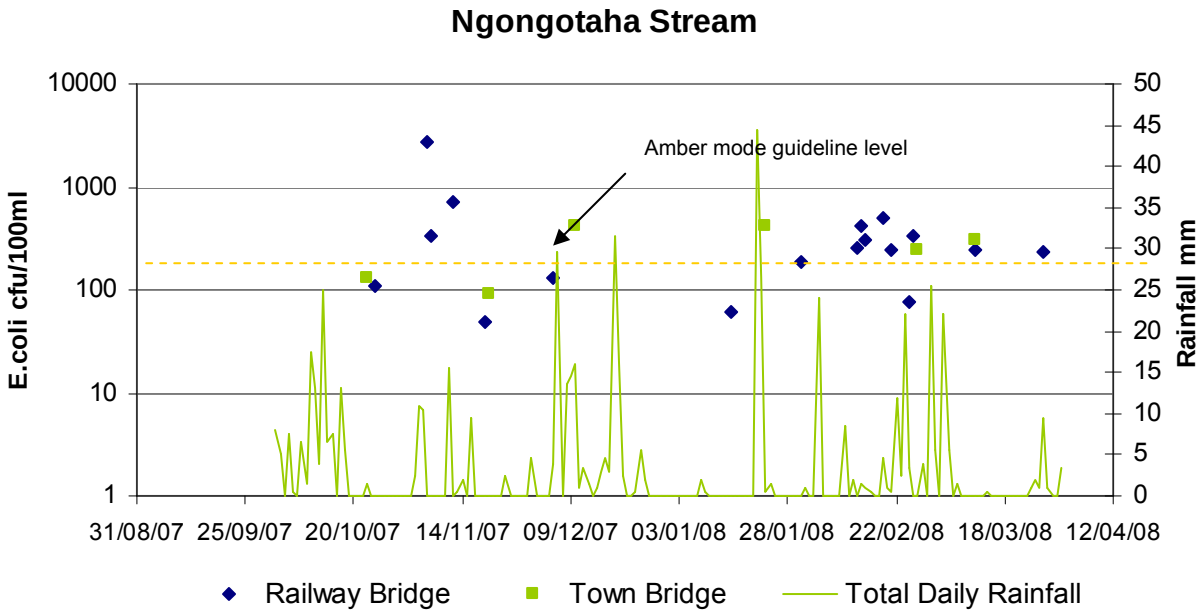

Figure 5 E.coli concentrations (cfu/100ml), Ngongotaha Stream.

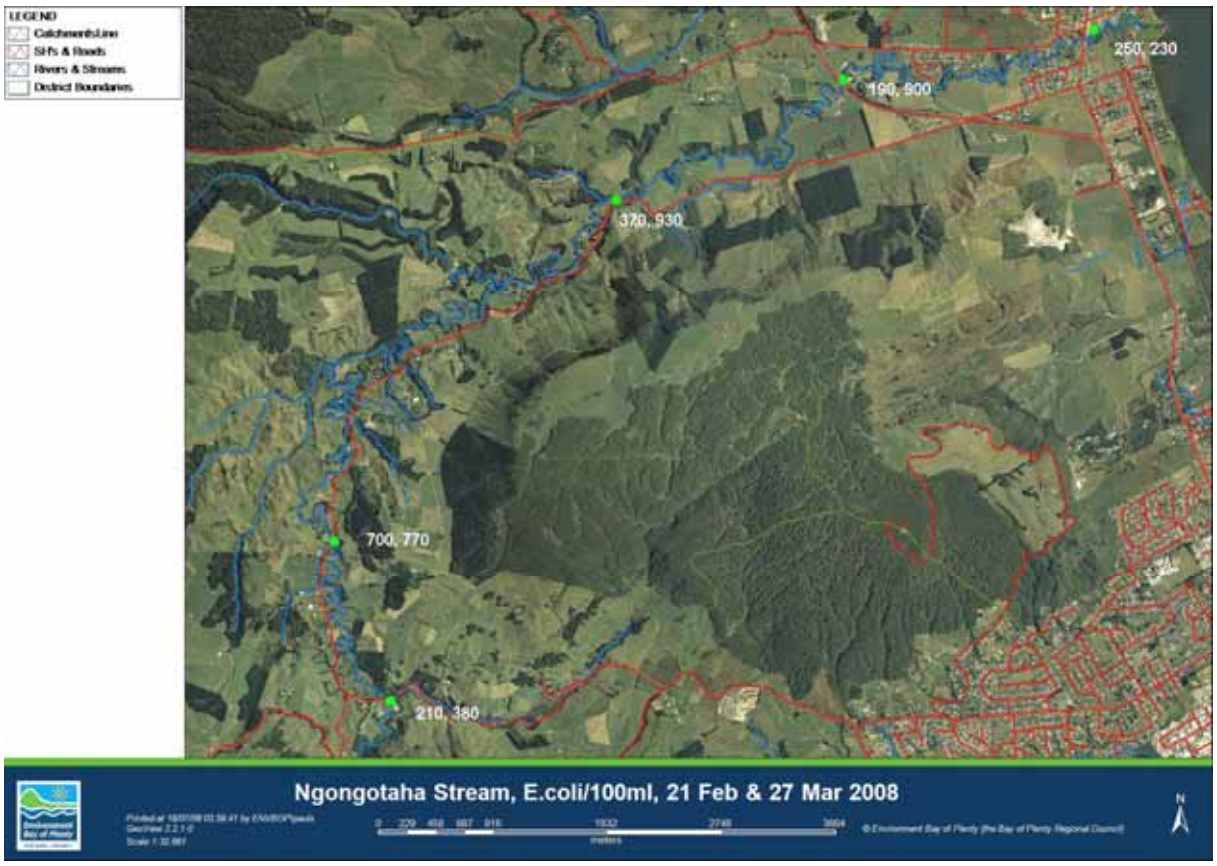

Figure 6 E.coli concentrations, Ngongotaha Stream.

Table 4: Grades – Marine 2003 - 2008			BOP Site					% Days in
District	Site	Description	Number	P	MAC	SIC	SFRG	Compliance
Opotiki	Hikuwai Beach End of Snell Road	Hikuwai	160005	65.1	B	Moderate	**Good**	98
Opotiki	Omaio Bay Domain	Omaio	160004	54.8	B	Moderate	**Good**	100
Opotiki	Te Kaha Beach Maraetai Bay	Te Kaha	160003	26.2	A	Very Low	**Very Good**	100
Opotiki	Te Rangiharu Bay	Waihau Bay	160036	23.5	A	Very Low	**Very Good**	100
Opotiki	Waihau Bay	Waihau	160001	78.6	B	Very High	**Poor**	100
Opotiki	Waiotahi Beach Estuary	Waiotahi Est	160008	160	B	Very Low	**Very Good**	96
Opotiki	Waiotahi Beach Surf Club	Waiotahi	160007	31	A	Low	**Very Good**	100
Opotiki	Whanarua Bay	Whanarua Bay	160002	52.8	B	Very Low	**Very Good**	100
Tauranga	Mt Maunganui Ocean Beach Surf Club	Mount	160025	28.8	A	Very Low	**Very Good**	100
Tauranga	Omanu Beach	Omanu Surf Club	900096	40.6	B	Very Low	**Very Good**	100
Tauranga	Otumoetai Beach reserve end of Beach	Otumoetai	160021	269	C	Moderate	**Fair**	96
Tauranga	Papamoa Beach Surf Club	Papamoa	160026	24.8	A	Very Low	**Very Good**	100
Tauranga	Pilot Bay Mid Beach	Pilot Bay	160042	173.5	C	High	**Poor**	96
Tauranga	Rangataua Bay	Maungatapu	160049	79.4	B	Very Low	**Very Good**	100
Tauranga	Tilby Point Reserve	Tilby Pt	160020	139	B	Moderate	**Good**	98
Tauranga	Waimapu Estuary Motel-Motor Camp	Waimapu	160019	124.5	B	Low	**Good**	100
WBOP	Anzac Bay Bowentown Domain	Anzac Bay	160028	57.9	B	Very Low	**Very Good**	100
WBOP	Athenree Opposite Motor Camp	Athenree	160030	409	C	Very Low	**Fair**	92
WBOP	Little Waihi Domain Boat Ramp	Little Waihi	160016	276	C	Moderate	**Fair**	95
WBOP	Maketu Surf Club	Maketu	160017	218.1	C	Moderate	**Fair**	97
WBOP	Omokoroa Beach	Omokoroa	160022	40.4	B	Very Low	**Very Good**	98
WBOP	Ongare Point Harbour View Road	Ongare Pt	160032	212.5	C	Low	**Fair**	96
WBOP	Pahoia End of Beach	Pahoia	160023	235	C	Low	**Fair**	92
WBOP	Pukehina Beach Surf Club	Pukehina	160015	15.3	A	Very Low	**Very Good**	100
WBOP	Tanners Point Beach	Tanners Pt	160031	73.0	B	Very low	**Very Good**	97
WBOP	Waihi Beach Surf Club	Waihi Beach	160027	51.4	B	Low	**Good**	100
WBOP	Waitui Reserve	Te Puna	800087	152.6	B	Very High	**Follow-up**	96
Whakatane	Kohioawa Beach Murphy's Motor Camp	Kohioawa	160035	27.6	A	Very Low	**Very Good**	100
Whakatane	Ohiwa Harbour Reserve Boat Ramp	Ohiwa	160009	70.4	B	Very Low	**Very Good**	100
Whakatane	Ohope Beach Surf Club	Ohope 2	160011	272.5	C	Moderate	**Fair**	95
Whakatane	Ohope Beach Surf 'n Sand Motor Camp	Ohope 1	160010	43.1	B	Very Low	**Very Good**	100
Whakatane	Otarawairere Bay	Otarawairere	160012	481	C	Very Low	**Fair**	94
Whakatane	Piripai Beach Ocean Beach	Piripai	160014	59.7	B	Very Low	**Very Good**	100
Whakatane	Whakatane Heads Oceanside of Boat Ramp	Whakatane	160013	342.5	C	Moderate	**Fair**	91
Whakatane	River Mouth	Tarawera River	110125	570	D	High	**Very Poor**	93

Table 5: Grades – Rivers 2003 - 2008

District	Site	Description	BOP Site Number	P	MAC	SIC	SFRG	% Days in Compliance
Kawerau	Ruruanga Stream	Cricket Pavilion	160111	402.5	C	High	**Poor**	97
Kawerau	Tarawera River	Boyce Park	160110	136	B	Moderate	**Good**	100
Opotiki	Haparapara River	Omaio d/s SH35 Bridge	160100	286	C	Low	**Fair**	100
Opotiki	Otara River	d/s SH35 Bridge	160101	235.5	B	High	**Follow-up**	100
Opotiki	Waioeka River	bend near Waioeka Pa	160102	918	D	Moderate	**Poor**	94
Opotiki	Waioeka River	SH2 Bridge	160103	604	D	High	**Very Poor**	94
Rotorua	Awahou Stream	Glouster Road	160118	158	B	Very Low	**Very Good**	100
Rotorua	Kaituna River	Trout Pool Rd	160112	55	A	Very Low	**Very Good**	100
Rotorua	Ngongotaha Stream	Railway Bridge	160114	2490	D	Moderate	**Poor**	86
Rotorua	Ohau Channel	SH 33 Bridge	160119	84	A	Very Low	**Very Good**	100
Rotorua	Puarenga Stream	Whakarewarewa	160113	1680	D	Moderate	**Poor**	73
Rotorua	Utuhina Stream	Lake Road	160117	1413	D	Moderate	**Poor**	82
Rotorua	Waitangi Springs	Lake Rotoehu	160120	168	B	Very Low	**Very Good**	100
Rotorua	Waiteti Stream	Ngongotaha	160115	1160	D	Moderate	**Poor**	88
Tauranga	Waimapu River	Greerton Park Footbridge	160150	1251.5	D	High	**Very Poor**	85
Tauranga	Wairoa River	Bethlehem	160122	882.5	D	Moderate	**Poor**	87
WBOP	Kaituna River	Te Matai Rail Bridge	160129	254	B	High	**Poor**	97
WBOP	Ngamuwahine River	at Reserve	160125	1272.5	D	Moderate	**Poor**	83
WBOP	Tuapiro Stream	McMillan Road	160126	456.5	C	Moderate	**Fair**	97
WBOP	Uretara Stream	Katikati	160123	286	C	Moderate	**Fair**	97
WBOP	Wairoa River	below McLaren Falls Dam	160124	2790	D	Moderate	**Poor**	82
Whakatane	Rangitaiki River	Te Teko	110018	114.5	A	Very Low	**Very Good**	100
Whakatane	Rangitaiki River	Thornton Domain	160109	529	C	High	**Poor**	94
Whakatane	Waimana River	Waimana Gorge Picnic Area	160105	258	B	Very Low	**Very Good**	97
Whakatane	Whakatane River	Landing Road Bridge	160106	420	C	High	**Poor**	97

Table 6: Grades – Lakes 2003 - 2008

Site	Description	Site No.:	P	MAC	SIC	SFRG	% Days in Compliance
Lake Rotoma	Matahi Lagoon Road, Beach	160050	162	B	Very Low	**Very Good**	97
Lake Rotoma	Anaputa Point, Beach	160051	38.8	A	Very Low	**Very Good**	100
Lake Rotoma	Whangaroa	160052	95.6	A	Very Low	**Very Good**	97
Lake Rotoiti	Hinehopu, Jetty	160053	34.5	A	High	**Follow-up**	97
Lake Rotoiti	Gisborne Point	160054	106.9	A	Very Low	**Very Good**	97
Lake Rotoiti	Ruato	160055	154.4	B	Very Low	**Very Good**	100
Lake Rotoiti	Okawa Bay	160056	268.5	C	High	**Follow-up**	100
Lake Rotoiti	Te Akau Point	160057	226	B	Very Low	**Very Good**	97
Lake Rotoiti	Otaramarae	160058	84	A	Very Low	**Very Good**	97
Lake Okataina	Beach	160059	8.9	A	Very Low	**Very Good**	100
Lake Okareka	East end of dwellings	160061	380	C	Very Low	**Fair**	97
Lake Okareka	Jetty	160062	105	A	Very Low	**Very Good**	100
Lake Tikitapu	Beach	160063	38.7	A	Very Low	**Very Good**	100
Lake Tarawera	Tarapatiki Point	160064	41	A	Very Low	**Very Good**	100
Lake Tarawera	Rangiuru Bay	160072	84	A	Very Low	**Very Good**	100
Lake Rotorua	Mourea	160065	82.8	A	Very Low	**Very Good**	100
Lake Rotorua	Holdens Bay	160066	270	C	Moderate	**Fair**	97
Lake Rotorua	Ohinemutu	160068	343	C	Moderate	**Fair**	100
Lake Rotorua	Ngongotaha	160069	872	D	Very Low	**Poor**	93
Lake Rotorua	Hamurana	160070	490	C	High	**Poor**	97
Lake Okaro	Ski Area	160073	122.4	A	High	**Poor**	100
Lake Rerewhakaaitu	Pump Station Boat Ramp	160077	76.1	A	Moderate	**Good**	100

Chapter 4: Shellfish

Shellfish monitoring over the 2007/2008 summer period was restricted to six sites, five in Tauranga Harbour and one site at Waihi Estuary. An intensive sampling effort was made at these sites with the sites being sampled monthly. Monitoring results will form part of a wider investigation into shellfish contamination to be reported at the end of 2008. Samples are being analysed for bacterial and viral content and the programme will run for a year and includes intensive monitoring around potential contamination events.

The 2007/2008 summer surveillance indicator bacteria monitoring results are shown in Table 7. Samples are analysed for faecal coliforms per 100g of flesh and in some cases enterococci analyses are also undertaken, as enterococci is the indicator organism used for marine bathing surveys.

The standard used for shellfish quality for consumption is based on the Ministry of Health's Microbiological Reference Criteria for Food (1995). This standard is listed in the thirteenth schedule of the Regional Coastal Environment Plan. To comply with the standard faecal coliform levels in the flesh sample should be less than 330MPN/100g (MPN=mean probable number), and levels from 230 to 330MPN/100g are marginally acceptable.

Table 7 Faecal coliform concentrations in shellfish flesh per 100g.

Description	Species	Site No.	9/10/2007	8/11/2007	6/12/2007	7/01/2008	7/02/2008	3/03/2008
Waihi Estuary channel	Pipi	900302	300	130	20	130	140	**2100**
Tilby Pt	Pipi	900032	8	23	4	2	50	240
Pilot Bay	Pipi	900304	1	23	<2	2	**3000**	**1600**
Pio's Beach	Cockle	900048	13	80	240	30	**500**	240
Te Puna Estuary	Oyster	900035	140	240	**9000**	170	**5000**	**1600**
Te Puna Beach	Horse mussel	900075	170	240	170	2	23	240

Results above the recommended consumption criteria were experienced on three dates over a range of sites (results in bold in Table 7). Oysters sampled in the Te Puna Estuary have consistently shown the highest level of contamination. Major potential sources of contamination include rural run-off from the stream and adjacent communities with on-site wastewater treatment systems.

Elevated results in February 2008 at three sites are unexplained, but similar results in early March may be a result of rainfall after a sustained dry period.

Chapter 5: Conclusions and Recommendations

Suitability for Recreation Grades have now been established for almost all sites in the bathing surveillance programme based upon the five years of survey data. Under the MfE/MoH Guidelines most sites graded should be considered as interim as the minimum of 100 data points has not been met. Many sites are close to meeting this minimum.

Grading results indicate 26 % of the regions monitored sites are often not of a standard recommended for recreational use. However, all but one site was in compliance with recreational water quality guidelines greater than 80 % of the time. Run-off due to rainfall is the primary cause of sites not meeting recreational water quality guidelines with river sites by far the greatest affected.

Grading results are communicated to the public via the Environment Bay of Plenty website which is linked to district council websites and Toi Te Ora Public Health's website. Sites with a consistent 'Poor' history have had signs erected warning of potential risks to recreational users.

Five years of consistent data collection (around 10 samples per year or greater for most sites) now provides a good background on recreational water quality at most sites. However, under the current survey programme it is unlikely (or only possibly likely for some sites) that 100 data points would be collected in the five year timeframe. This is often due to the programme having to cater for exceedance sampling and the summer programme being resourced to collect a little over 1000 samples.

A number of options for the future direction of the bathing surveillance programme are possible:

1. *Retain the bathing surveillance programme in its current form.* The current programme would appear to meet Environment Bay of Plenty regional objectives for recreational water quality, state of the environment monitoring, and planning mechanisms. Maintaining the current programme would also provide continuity of data for determining trends over time.

2. *Increase the bathing surveillance programme building on the current data set so a number of sites meet the MfE/MoH minimum data requirements.* Not only would this option meet MfE/MoH requirements but would also strengthen and add confidence to the findings made. It would require more resourcing. At sites graded good or very good this may be seen to be unnecessary.

3. *Focus on sites with poor or very poor gradings and monitor other sites on an alternating year basis*. This alternative may only serve to further validate the grading and potentially help determine which sub-catchments contribute to the contamination. For the worst sites some of this work is already being carried out. A reduction in resources used may be achieved through this option.

There are new methods in the analysis of indicator bacteria that may change how the bathing surveillance programme operates. Such methods may affect the future shape of bathing surveillance monitoring but under the present circumstances it would be prudent to keep the bathing surveillance programme similar to its current form. Not only will this have the benefits of providing consistent continuous data to help evaluate change over time, but this approach fits in well with our current commitment to contact recreational monitoring in partnership with other stakeholders.

Option 1 is considered to be the best option under the current resourcing structure. This option already pushes laboratory resources to its limit, so any increase in monitoring may need to be undertaken by territorial authorities or the public health sector.

Two catchment surveys have been reported on. Faecal contamination above Kaiate Falls is linked to stock having access to waterways. Land Management Officers are currently working with landowners to work towards solutions for this catchment.

A range of non-point sources are likely to be contributing to the elevated indicator bacteria levels in the Ngongotaha Stream. The Stream may also be contributing to the poor water quality of Lake Rotorua in the Ngongotaha area, although the Waiteti Stream also contributes an elevated bacteria load to the lake. Further investigation into land use and stormwater run-off could help ascertain potential sources of contamination.

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Appendices

Appendix I – Catchment Assessment Checklist

Source: Ministry for the Environment and Ministry of Health, 2003: *Microbiological Water Quality Guidelines for Marine and Freshwaters, 2003*. MfE Number 474.

Note H(iv): Catchment Assessment Checklist (CAC) for marine recreational waters

The purpose of the checklist is to identify potential catchment risk factors for use in establishing the Sanitary Inspection Category (SIC).

Site/area name: _____

Type of site: *Open coastal beach* _____ *Estuarine*_____ *Enclosed bay* _____ *Other*_____

Location: _____

Map references: Latitude _____ Longitude _____

Name of local authority (specify authority responsible) _____

_____

Name of person completing checklist (for compiling report): _____

Check and tick all that apply and note findings for subsequent report.

Part A: Land use

Type of land or human activity surrounding the recreational site.

Land cover/geography

Forest/bush	☐	Pasture	☐	Urban	☐
Swamp/mangroves	☐	River/stream/irrigation	☐	Sand dunes	☐
Hilly	☐	Flat	☐		

Urban

Residential (population density)	☐	Commercial	☐	Industry (specify)	☐
Hotel	☐	Harbour	☐	Airport	☐
Road/rail	☐	Military/prison (restricted areas)	☐	Other potentially polluting activity (please specify)	☐
Sanitary landfills/old dumps	☐				

Disposal of human wastes (degree and type of treatment applied - (please specify)

_____

_____

_____

_____

Part B: Rural land use

Indicate the presence of the following for agricultural land use.

Sheep	☐	Dairy/beef	☐	Horses	☐
Pigs	☐	Deer	☐		
Poultry	☐	Feral	☐		

Is there disposal of animal wastes? (please specify) _____

_____

_____

Part C: Water uses

Indicate the presence of the following for the marine area.

Marina	☐	Fish boat berths	☐
Permanent boat moorings	☐	Harbour	☐
Temporary boat moorings	☐	Ferry berth	☐

Additional influencing factors

Size of bathing area:

Area _____ m^2

Length _____ m

Mean width _____ m

Is there a beach? ☐

Average area _____ m^2

Length _____ m

Width at low tide _____ m

Width at high tide _____ m

Are there lagoons used for bathing? ☐

Is the beach subject to above average seasonal/holiday loading? ☐

Direction of prevailing onshore winds _____

Direction of prevailing water currents _____

Shoreline configuration/geomorphology/erosion gullies: _____

_____

Presence of sandbars ☐

Presence of surf: average wave heights _____

Total rainfall

Total annual: _____ mm

Seasonal patterns: _____

Part D: Microbiological hazards

Sewage and animal waste

Is the water quality in the recreational area *affected*, or *likely to be affected* by:		Is it present?	Is it likely to cause an effect?
1	discharge of untreated human effluent onto or adjacent to a recreational area	☐	☐
2	stormwater outlets with potential sewage contamination / combined stormwater outlet onto or adjacent to a recreational area	☐	☐
3	urban stormwater that is protected from sewage ingress	☐	☐
4	on-site or other private sewage disposal systems (e.g. septic tank or package plant)	☐	☐
5	communal sewage disposal or primary or secondary treatment facilities	☐	☐
6	communal sewage disposal with tertiary treatment facilities	☐	☐
7	intensive agricultural use in immediate catchment and potential for run-off from untreated animal effluent (e.g. dairying, piggeries, milking sheds)	☐	☐
8	the incidence and density of bird life (particularly where lagoons or estuarine conditions exist)	☐	☐
9	water craft mooring or use (for boats, proximity, densities and pump-outs).	☐	☐

	Yes	No
Is there a river or stream (including a piped stream) discharging into the recreational area?	☐	☐

If 'Yes' complete Questions 10–15 to determine an effect.

River/stream discharge influences

Is the water quality of any river or stream discharging into the recreational area affected or *likely to be affected* by:		Is it present?	Is it likely to cause an effect?
10	discharge of untreated human effluent, primary or secondary wastewater treatment plant discharge, on-site or other private sewage disposal systems (e.g. septic tank)	☐	☐
11	stormwater outlets with potential sewage contamination/combined stormwater outlet	☐	☐
12	communal sewage disposal with tertiary treatment facilities	☐	☐
13	high-intensity agricultural/rural activities, incidence and density of feral animal/bird population	☐	☐
14	focal points of drainage, as run-off from low-intensity agriculture/urban/rural catchment	☐	☐
15	potential for run-off from feral animals (e.g. forest or bush).	☐	☐

Other influences

		Is it present?	Is it likely to cause an effect?
16	tidal movements or onshore winds that are likely to carry water polluted by untreated / primary / secondary treated effluent or onsite waste treatment systems into the recreational area	☐	☐
17	tidal movements or onshore winds that are likely to carry water polluted by tertiary treated wastewater into the recreational area.	☐	☐

Further considerations

	Yes	No
Does rainfall trigger contamination events?	☐	☐
Does microbiological water quality data exceed the national guidelines (280 single-sample exceedance) on any occasion?	☐	☐
Is there additional information implying risk (such as notified illness related to recreational water activities)?	☐	☐

Note: If the box is ticked indicating the presence of any of the above microbiological hazards, the answer as to whether it is causing an effect may be obvious (e.g. discharge of human or animal effluent onto or adjacent to a recreational area). If it is unclear whether it is causing an effect, a more detailed investigation may be required to establish relative importance and magnitude of the effect.

Part B: Rural land use

Indicate the presence of the following for agricultural land use.

Sheep	☐	Dairy	☐	Beef	☐
Pigs	☐	Deer	☐	Horses	☐
Poultry	☐	Feral	☐		

Is there disposal of animal wastes? (Please specify) _____

_____

_____

Part C: Water uses

Indicate the presence of the following for the recreational site.

Marina	☐	Boat ramp	☐
Permanent boat moorings	☐	Jetty/wharf	☐

Additional influencing factors

Size of bathing /recreational area:

Area _____ m^2

Length _____ m

Mean width _____ m

Is the site subject to seasonal/holiday loading? Yes / No

Direction of prevailing winds _____

Shoreline configuration/geomorphology/erosion gullies: _____

_____

Total rainfall:

Total annual: _____ mm

Location of rainfall monitoring station: _____

Shoreline configuration/geomorphology/erosion gullies: _____

_____

Part D: Microbiological hazards

Sewage and animal wastes

Is the water quality in the recreational area *affected*, or *likely* to be *affected* by:		Is it present?	Is it likely to cause an effect?
1	discharge of untreated human effluent onto or upstream to a recreational area	☐	☐
2	stormwater outlets with potential sewage contamination / combined stormwater outlet onto or upstream to a recreational area	☐	☐
3	urban stormwater that is protected from sewage ingress	☐	☐
4	on-site or other private sewage disposal systems (e.g. septic tank or package plant)	☐	☐
5	communal sewage disposal or primary or secondary treatment facilities	☐	☐
6	communal sewage disposal with tertiary treatment facilities	☐	☐
7	intensive agricultural use in immediate catchment and potential for run-off from untreated animal effluent (e.g. dairying, piggeries, milking sheds etc.)	☐	☐
8	focal points of drainage, as run-off from low-intensity agriculture/urban/rural catchment	☐	☐
9	unrestricted stock access to waterways	☐	☐
10	the incidence and density of birdlife	☐	☐
11	water craft mooring or use	☐	☐
12	potential for run-off from feral animals (e.g. forest or bush).	☐	☐

Indirect influences

	Yes	No
Is there a stream (including a piped stream or tributary) or drain or wetland discharging into or upstream to the recreational area?	☐	☐

If 'Yes' please answer Questions 13–18.

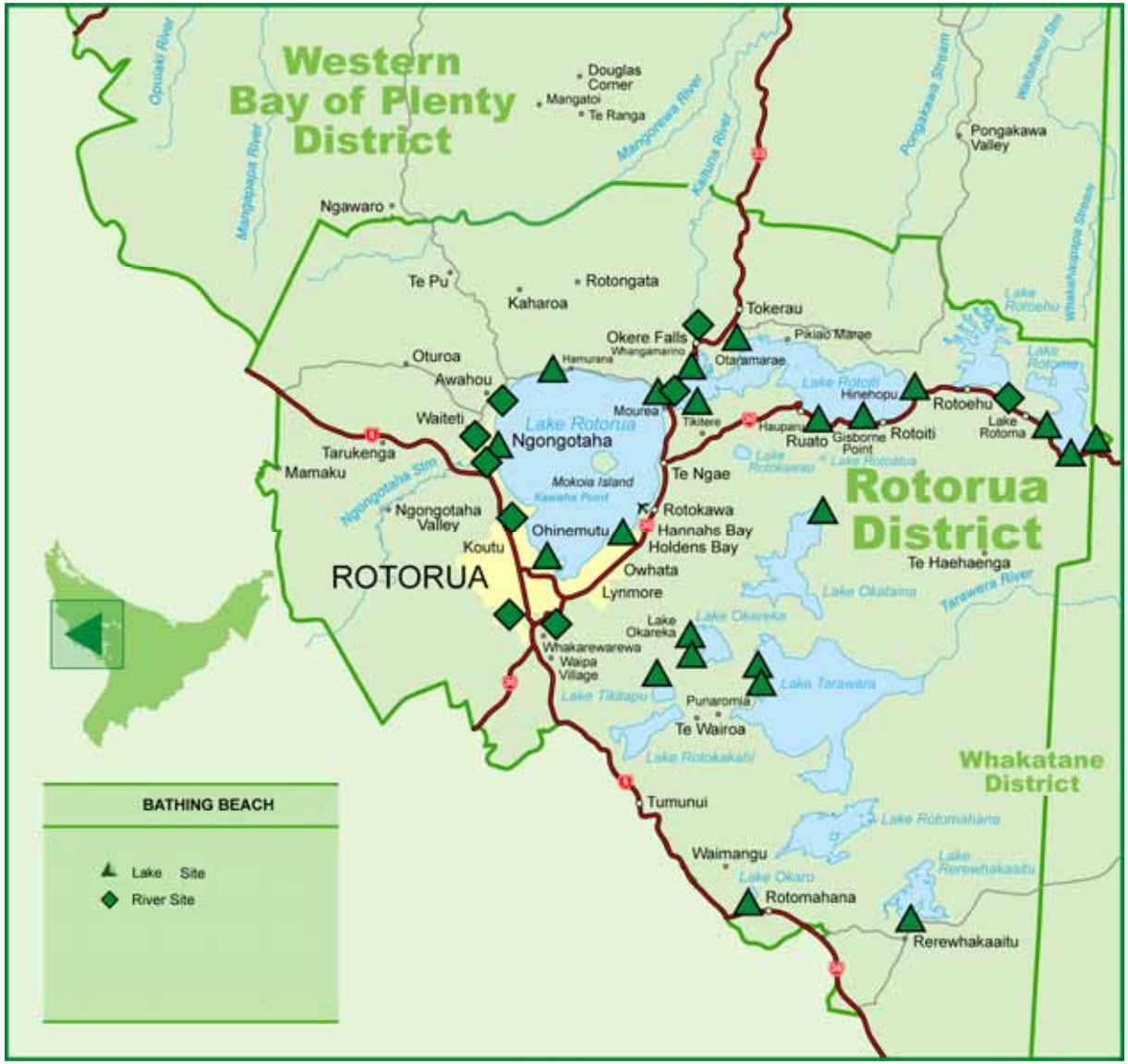
Is the water quality of that stream, drain or wetland *affected* or *likely to be affected by*:		Is it present?	Is it likely to cause an effect?
13	discharge of untreated human effluent, primary or secondary wastewater treatment plant discharge, on-site or other private sewage disposal systems (e.g. septic tank)	☐	☐
14	stormwater outlets with potential sewage contamination / combined stormwater outlet	☐	☐
15	communal sewage disposal with tertiary treatment facilities	☐	☐
16	high-intensity agricultural/rural activities, incidence and density of feral animal/bird population	☐	☐
17	focal points of drainage, as run-off from low-intensity agriculture/urban/rural catchment	☐	☐
18	potential for run-off from feral animals (e.g. forest or bush).	☐	☐

Further considerations	Yes	No
Does rainfall trigger contamination events?	☐	☐
Does microbiological water-quality data exceed the national guidelines (550 *E. coli* per 100 mL single sample exceedance) on any occasion?	☐	☐
Is there additional information implying risk (such as notified illness related to recreational water activities)?	☐	☐

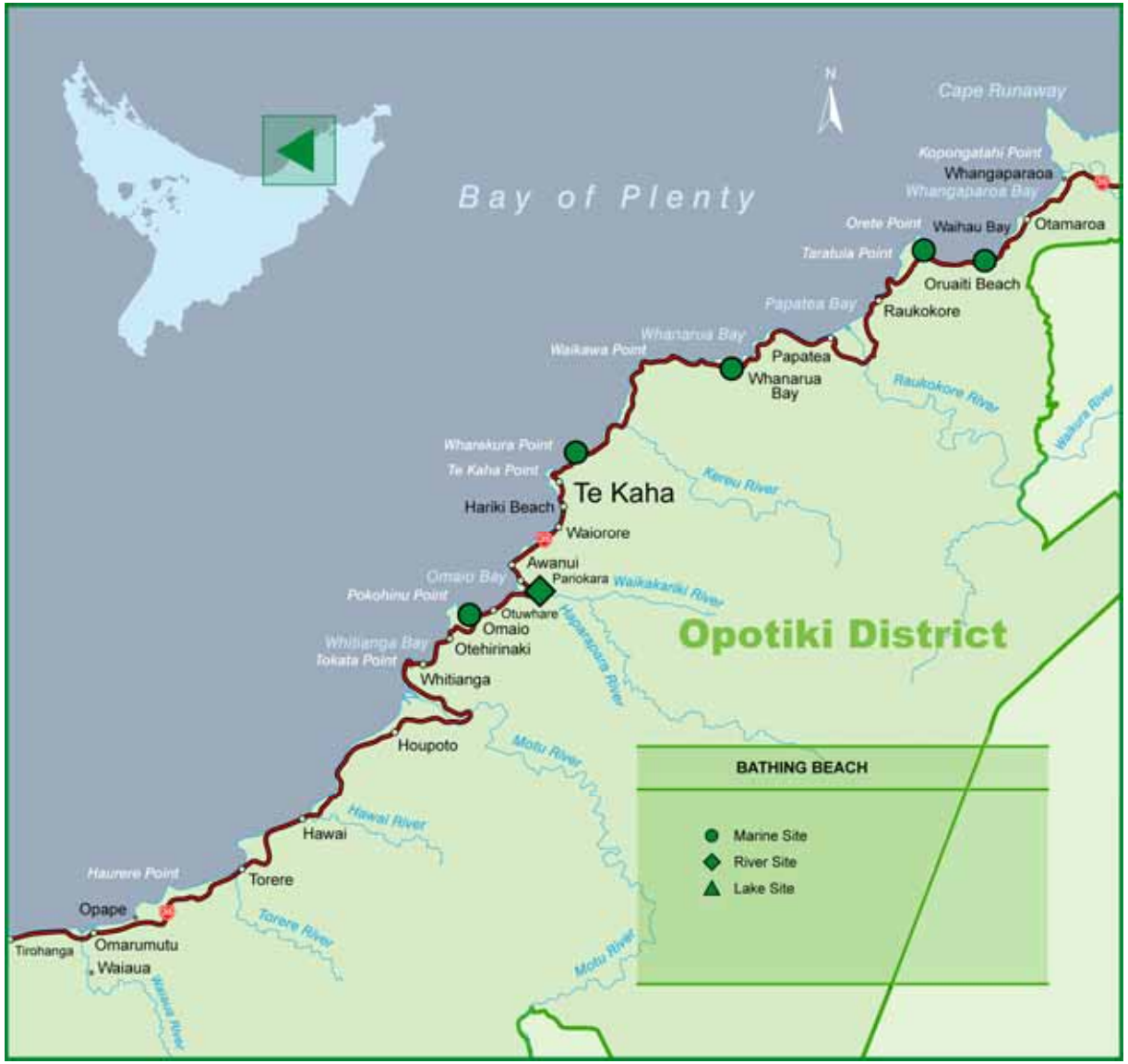
Note: *If the answer to any of the above microbiological hazard questions is ticked as present, the answer as to whether or not it is causing an effect may be obvious (i.e. discharge of untreated human effluent into or upstream to a recreational area). If, however, it is unclear that it is causing an effect, a more detailed investigation may be required to establish the relative importance of the effect.*

Appendix II – Site Location Maps


Bay of Plenty
Hauone
Pikowai
Matata
Awakaponga
Thornton
WHAKATANE
Coastlands
Kohi Point
Otarawairere Bay
Paroa
Piripai
Ohope
Ohiwa Harbour
Opotiki
Ohiwa
Waiotahi Beach
Edgecumbe
Otakiri
Manawahe
Poroporo
White Pine Bush
Awakeri
Awakeri Springs
Te Teko
Onepu
Whakatane District
Taneatua
Wainui
Cheddar Valley
Kutarere
Kererutahi
Kukumoa
Hospital Hill
Waiotahi
Paerata Ridge
Woodlands
Apanui
Waioeka
Otara
Te Rere Pa
Waioeka Pa
Waiotahi Valley
Lake Pupuwharau
Kawerau
Te Mahoe
Kawerau District
Lake Matahina
Matahina
Opouriao
Ruatoki North
Waimana
Nukuhou North
Matahanea
Okiore
Waikirikiri
Raroa
Tanatana
Opotiki District
Oponae
Matahi
Tahora
Paraoanui
Tauwhare
Hopeone
Horomanga
Kopuriki
Lake Aniwhenua
BATHING BEACH
Marine Site
River Site
Lake Site


Western Bay of Plenty District
Douglas Corner
Mangatoi
Te Ranga
Ngawaro
Te Puke
Rotongata
Kaharoa
Tokerau
Pikiao Marae
Okere Falls
Whangamarino
Otaramarae
Oturoa
Awahou
Hamurana
Waiteti
Mourea
Lake Rotorua
Ngongotaha
Tikitere
Hinehopu
Rotoehu
Haupeni
Ruato
Gisborne Point
Rotoiti
Lake Rotoma
Tarukenga
Mamaku
Mokoia Island
Kawaha Point
Te Ngae
Rotorua District
Ngongotaha Valley
Rotokawa
Ohinemutu
Hannahs Bay
Holdens Bay
Koutu
ROTORUA
Owhata
Lynmore
Te Haehaenga
Lake Okareka
Whakarewarewa
Waipa Village
Punaromia
Te Wairoa
Lake Tarawera
Tarawera River
Whakatane District
Tumunui
Waimangu
Rotomahana
Rerewhakaaitu
BATHING BEACH
Lake Site
River Site


BATHING BEACH
AREA
Marine Site
River Site
Orokawa Bay
Waihi Beach
Island View
Athenree
Pios Beach
Bowentown Heads
Bowentown
Katikati Entrance
Tahawai
Katikati
Tauranga Harbour
Matakana Island
Bay of Plenty
Aongatete
Omokoroa Beach
Opureora
Tauranga Entrance
Mount Maunganui
Apata
Pahoia
Te Puna Beach
Omokoroa
Otumoetai
Omanu
Tauranga City
Te Maunga
Te Puna
Wairoa Pa
Minden
Wairoa
Whakamarama
Kairua
Papamoa Beach
Waitao
Ngapeke
Papamoa
TAURANGA
Welcome Bay
Kaitemako
Te Ranga
Ohauiti
Kaiate Falls
Maketu Estuary
Maketu
Okurei Point
Little Waihi
Waihi Estuary
Pukehina Beach
Te Puke
Te Tumu
Rangiuru
Te Matai
Manoeka
Western Bay of Plenty District
Lower Kaimai
McLaren Falls
Omanawa
Omanawa Falls
Pyes Pa
Oropi
Moirs Reef
Waiari
Paengaroa
Pongakawa
Ohinepanea
Pukehina


Bay of Plenty
N
Cape Runaway
Kopongatahi Point
Whangaparaoa
Whangaparoa Bay
Orete Point
Waihau Bay
Otamaroa
Taratula Point
Oruaiti Beach
Papatea Bay
Raukokore
Whanarua Bay
Waikawa Point
Papatea
Whanarua Bay
Raukokore River
Waikura River
Whanokura Point
Te Kaha Point
Te Kaha
Hariki Beach
Karau River
Waiorore
Awanui
Omaio Bay
Pariokara
Waikakariki River
Pokohinu Point
Otuwhare
Omaio
Opotiki District
Whitianga Bay
Tokata Point
Otehirinaki
Whitianga
Houpoto
Motu River
Hawai River
Hawai
Haurere Point
Torere
Opape
Torere River
Tirohanga
Omarumutu
Waiaua
Motu River
BATHING BEACH
Marine Site
River Site
Lake Site

Appendix III

Beach Site Locations, Suitability for Recreation Grades and Catchment Assessment Results

Opotiki Marine

Site Location
Hikuwai Beach – end of Snell Road

Site Code
BOP160005

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
12: River - tertiary treatment facilities
Other Impact:
None
Factors present but without significant impact:
5: Primary or secondary treatment facilities
7: Intensive agricultural use
10: River - untreated human effluent
11: River - stormwater outlets
13: River - agricultural activities/birds/feral animals
14: River - focal points of drainage
17: Tidal/onshore winds carry treated wastewater

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2887210, NZMS Northing (meters) 6347930
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Pasture, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated Secondary Treatment and Septic Tank
Potentially Polluting Activities: Sewage irrigated into dunes

Part B: Rural Land Use
Sheep, dairy/beef, pigs

Part C: Water Use
Size of Bathing Area: Area (square meters) 5000, Length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 8750, Beach Length (meters) 500, High Tide Width (meters) 10, Low Tide Width (meters) 25

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1
Total annual rainfall (millimetres): 1116
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – steep foredune on high energy coastline.
Seasonal rainfall pattern: No extremes – moderate annual rainfall evenly distributed.
Direction of prevailing onshore winds: North.
Direction of prevailing water currents: North East.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 65

Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:

Site Location
Omaio Bay Domain

Site Code
BOP160004

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
11: River – stormwater outlets
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
10: River – untreated human effluent
14: River – focal points of drainage

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2917530, NZMS Northing (meters) 6366000
Name of Local Authority: Opotiki District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Tony Dwane

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, sand dunes, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic Tank

Part B: Rural Land Use

Sheep, dairy/beef, horses
Disposal of animal waste: No

Part C: Water Use

Size of Bathing Area: Area (square meters) 16000, Length (meters) 800, Width (meters) 20

Size of Beach Area: Average Area (square meters) 8000, Beach Length (meters) 200, High Tide Width (meters) 15, Low Tide Width (meters) 65

Additional Influencing Factors:

Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1
Total annual rainfall (millimetres): 1400
Shoreline configuration/geomorphology/erosion gullies: Sloping sandy/gravel beach – high energy coastline.
Seasonal rainfall pattern: Sub-tropical climate – can get high rainfall in the ranges however coastal tend to be more evenly distributed annually.
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: East.
Rainfall does not trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 55
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:
This monitoring point is situated in a small enclosed bay adjacent to the heart of the local community. The primary microbiological source of concern is from private sewage disposal via septic tanks. Set back of the community from the beach is such that the risk from sewage contamination is deemed moderate.

Site Location
Te Kaha Beach - Maraetai Bay

Site Code
BOP160003

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
10: River - untreated human effluent
14: River - focal points of drainage
15: River - feral animals (e.g., forest / bush)
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2923690, NZMS Northing (meters) 6375200
Name of Local Authority: Opotiki District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Jessica Weisman and Tony Dwane

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic Tank
Potentially Polluting Activities: Stormwater run-off from road

Part B: Rural Land Use
Dairy/beef, feral horses

Part C: Water Use
Size of Bathing Area: Area (square meters) 75000, Length (meters) 100, Width (meters) 75

Size of Beach Area: Average Area (square meters) 93.75, Beach Length (meters) 125, High Tide Width (meters) 50, Low Tide Width (meters) 100

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5
Total annual rainfall (millimetres): 1400
Shoreline configuration/geomorphology/erosion gullies: Sloping sandy beach – high energy coastline.
Seasonal rainfall pattern: No extremes – moderate annual rainfall evenly distributed.
Direction of prevailing onshore winds: East.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 26
Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:
Situated in a small enclosed bay, this monitoring site adjacent to only a small part of the local community, but is near a public toilet and area used for camping in the summer months.

The primary microbiological source of concern is from private sewage disposal via septic tanks and the public toilets. There is also a small stream entering the bay. The risk of contamination is considered high although monitoring results show the water quality to be good.

Site Location
Te Rangiharu Bay – Waihau Bay

Site Code
BOP160036

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
9: Water craft mooring use
13: River – agricultural activities/birds/feral animals
14: River – focal points of drainage

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2946820, NZMS Northing (meters) 6386280
Name of Local Authority: Environment Bay of Plenty
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, sand dunes, flat
Urban Land Uses: Hotel
Disposal of Human Wastes: Septic Tank

Part B: Rural Land Use
Dairy/beef, feral, horses

Part C: Water Use
Size of Bathing Area: Area (square meters) 22500, Length (meters) 1500, Width (meters) 15

Size of Beach Area: Average Area (square meters) 23000, Beach Length (meters) 1500, High Tide Width (meters) 12, Low Tide Width (meters) 20

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.3.
Total annual rainfall (millimetres): 1200.
Shoreline configuration/geomorphology/erosion gullies: Sandy beach in large bay area. Moderate energy, shallow beach
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: North.
Direction of prevailing water currents: North.
Rainfall does not trigger contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 24
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Located at the eastern end of Waihau Bay, this monitoring site is adjacent to a community subject to high seasonal loadings and near a small stream from predominantly an afforested catchment.

The primary microbiological source of concerns is from private sewage disposal via septic tanks. The community is widely spread and well set back from the beach so the risk of contamination is considered low and this is confirmed by monitoring to date.

Site Location
Waihau Bay

Site Code
BOP160001

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
3: Urban stormwater
4: Private sewage disposal systems
9: Water craft mooring or use

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2943330, NZMS Northing (meters) 6386850
Name of Local Authority: Opotiki District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Paul Scholes.

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use

Dairy/beef, feral, horses

Part C: Water Use

Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 8500, Beach Length (meters) 200, High Tide Width (meters) 10, Low Tide Width (meters) 75

Additional Influencing Factors:

Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1.
Total annual rainfall (millimetres): 1400.
Shoreline configuration/geomorphology/erosion gullies: Steep shingle beach.
Seasonal rainfall pattern: Sub-tropical climate – can get high rainfall in the ranges coastal tends to be more evenly distributed annually
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: East.
Rainfall triggers contamination.
Microbiological water quality data has not exceeded national guidelines.
There is no additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 79
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Located at the western end of Waihau Bay, this monitoring site is adjacent to a community subject to high seasonal loadings and boat traffic

The primary microbiological source of concerns is from private sewage disposal via septic tanks. Much of the community adjacent to the beach is commercial or holiday homes. Five years of monitoring shows there is little risk of contamination from septic tank effluent.

Site Location
Waiotahi Beach Surf Club

Site Code
BOP160007

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Low

Primary Impact:
14: River – focal points of drainage
Other Impact:
11: River – stormwater outlets
Factors present but without significant impact:
4: Private sewage disposal systems

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2882520, NZMS Northing (meters) 6348050
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Tony Dwane

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use

Sheep, dairy/beef, horses
Disposal of Animal Wastes: No

Part C: Water Use

Size of Bathing Area: Area (square meters) 5000, length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 5000, Beach Length (meters) 100, High Tide Width (meters) 25, Low Tide Width (meters) 75

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5
Total annual rainfall (millimetres): 1400
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – steep shoreline on high energy coastline.
Seasonal rainfall pattern: No extremes – moderate annual rainfall evenly distributed.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data has not exceeded national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 31
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

The Waiotahi Beach site is located between the Waiotahi and Waioeka Rivers adjacent to the local beach community.

The primary microbiological source of concern is from septic tanks. The community is set well back from the beach so the risk of microbiological contamination is considered to be low.

Site Location
Waiotahi Beach Estuary

Site Code
BOP160008

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use]
8: Birds
13: River – agricultural activities/birds/feral animals

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2879270, NZMS Northing (meters) 6348080
Name of Local Authority: Opotiki District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, sand dunes, hilly, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use
Dairy/beef
Disposal of Animal Wastes: No

Part C: Water Use
Size of Bathing Area: Area (square meters) 5000, length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 4250, Beach Length (meters) 100, High Tide Width (meters) 10, Low Tide Width (meters) 75

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1400.
Shoreline configuration/geomorphology/erosion gullies: Sandy, flat low energy coastline – influenced by daily tidal movements
Seasonal rainfall pattern: No extremes – moderate annual rainfall evenly distributed.
Direction of prevailing onshore winds: East
Rainfall trigger contamination
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 160
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
The Waiotahi Estuary is fed by the Waiotahi River with the monitoring site located near the mouth of the estuary.

The primary microbiological source of concern is from agricultural runoff and discharges dominated by dairy. There is a public toilet located near the estuary mouth. The risk of microbiological contamination is considered to be low as there is little risk of contamination from human influenced sources and monitoring to date indicates little occurrences of contamination.

Site Location
Whanarua Bay

Site Code
BOP160002

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
14: River – focal point of drainage
15: River – feral animals (e.g. forest/bush)

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2932380, NZMS Northing (meters) 6380100
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Tony Dwane

Part A: Land Use

Land Cover and Geography: Forest/bush, urban, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use

Dairy/beef, feral, horses
Disposal of Animal Wastes: No

Part C: Water Use

Size of Bathing Area: Area (square meters) 5000, length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 3750, Beach Length (meters) 150, High Tide Width (meters) 10, Low Tide Width (meters) 40

Additional Influencing Factors:

Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1
Total annual rainfall (millimetres): 1400
Shoreline configuration/geomorphology/erosion gullies: Sand/gravel mix, rocky intertidal zone.
Seasonal rainfall pattern: Sub-tropical climate – can get high. Rainfall in the ranges, coastal rain tends to be more evenly distributed annually.
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: East.
Rainfall does not trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 53
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

This monitoring site is in a small enclosed bay adjacent to a small community and subject to high seasonal loadings.

The primary microbiological source of concern is from private sewage disposal via septic tanks. The community is well spread along the bay and is generally located on higher coastal cliff. The risk of microbiological contamination is considered to be low as monitoring results to date indicate.

Opotiki Rivers

Site Location

Haparapara River – Omaio d/s SH35 Bridge

Site Code

BOP160100

Suitability for Recreation Grade (SFRG)

Fair

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Low

Primary Impact:
12: Runoff from feral animals (e.g. forest/bush)
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
9: Unrestricted stock access to waterways

Site Identification

Type of Site: River
NZMS Easting (meters) 2885300, NZMS Northing (meters) 6345600
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, hilly
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use

Feral, horses

Part C: Water Use

Size of Bathing Area: Area 7500, length 150, Width 50

Additional Influencing Factors:

Direction of prevailing onshore winds: North East.
Shoreline configuration/geomorphology/erosion gullies: Steep ranges adjacent to site.
Total annual rainfall (millimetres): 3039
Location of rainfall monitoring station: Haparapara
Seasonal rainfall pattern: Moderate to heavy seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – C

Hazen Percentile Result: 286

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Staff have been asked if the water was still ok to drink when sampling here. Apparently it's used as a source to collect drinking water.

Site Location

Otara River – Opotiki
Downstream of SH35 bridge

Site Code

BOP160101

Suitability for Recreation Grade (SFRG)

Follow-up

Sanitary Inspection Category (SIC)

SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
6: Tertiary treatment facilities
9: Unrestricted stock access to waterways

Site Identification

Type of Site: Estuarine/ River
NZMS Easting (meters) 2886820, NZMS Northing (meters) 6346470
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Pasture, urban, flat
Urban Land Use: Residential
Disposal of Human or Animal Wastes: Tertiary treatment

Part B: Rural Land Use

Dairy, horses
Disposal of Animal Wastes: Dairy effluent

Part C: Water Use

Size of Bathing Area: Area 22200, length 370, Width 60

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping river shoreline with stop banks created. Flat low lying topography is adjacent.
Total annual rainfall (millimetres): 1339
Location of rainfall monitoring station: Otara town wharf
Seasonal rainfall pattern: Moderate to high rainfall – very sub-tropically seasonal.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – B

Hazen Percentile Result: 236

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

- No direct stormwater discharge into river however there is a pumping station above the site, which is controlled by EBOP under flood scheme
- Consent number 2835 updated to 63179, groundwater monitoring from sewerage plant

Site Location
Waioeka River – SH2 Bridge

Site Code
BOP160103

Suitability for Recreation Grade (SFRG)
Very Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
4: Private sewage disposal systems
6: Tertiary treatment facilities
8: Run-off from low intensity agriculture
14: Stormwater outlets with sewage contamination
16: High intensity agriculture or feral animals/birds

Site Identification
Type of Site: River/estuarine
NZMS Easting (meters) 2885210, NZMS Northing (meters) 6345370
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Pasture, urban, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Tertiary treatment

Part B: Rural Land Use
Dairy, horses

Part C: Water Use
Size of Bathing Area: Area 21000, Length 300, Width 70

Additional Influencing Factors:
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Wide sloping river bank area reaching flat low lying town.
Total annual rainfall (millimetres): 1304
Location of rainfall monitoring station: Mouth of Gorge (Waioeka)
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions. Sub-tropical climate
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 604
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
- Stormwater pump adjacent to sampling site (50835-0).
- Woodlands still septic tanks, although plans to upgrade!

Site Location
Waioeka River – bend near Waioeka Pa

Site Code
BOP160102

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
9: Unrestricted stock access to waterways
Factors present but without significant impact:
4: Private sewage disposal system
12: Run-off from feral animals (e.g. forest/bush)
18: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: River
NZMS Easting (meters) 2885960, NZMS Northing (meters) 6336530
Name of Local Authority: Opotiki District Council
Name of Person Completing Checklist: Jessica Wiseman

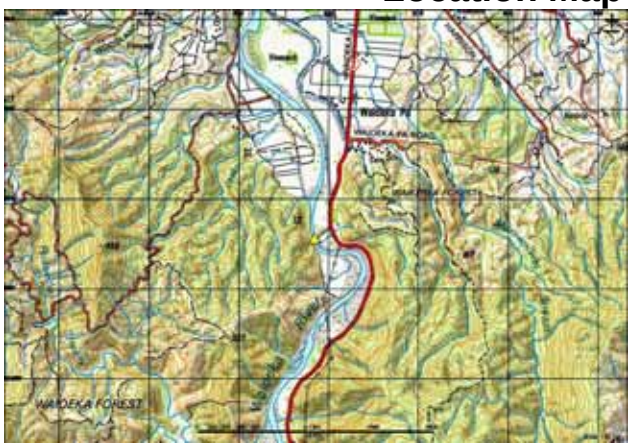
Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Disposal of Human or Animal Wastes: Septic tanks

Part B: Rural Land Use
Sheep, feral, horses

Part C: Water Use
Size of Bathing Area: Area 15500, Length 310, Width 50

Additional Influencing Factors:
Site not subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping topography forming to steep vegetation covered ranges.
Total annual rainfall (millimetres): 1304
Location of rainfall monitoring station: Mouth of Gorge (Waioeka)
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D
Hazen Percentile Result: 918
Data Set Extent:
Interim Data Set: <5 years or < 100 samples used

Location Map


Comments:

Whakatane Marine

Site Location
Kohioawa Beach - Murphy's Motor Camp

Site Code
BOP160035

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
5: Primary or secondary treatment facilities
7: Intensive agricultural use
14: River - focal points of drainage

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2838130, NZMS Northing (meters) 6362750
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Anna Griffin

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, sand dunes, flat
Urban Land Uses: Hotel, road/rail
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use
Dairy/beef, horses

Part C: Water Use
Size of Bathing Area: Area (square meters) 2000, length (meters) 1000, Width (meters) 20

Size of Beach Area: Average Area (square meters) 8000, Beach Length (meters) 100, High Tide Width (meters) 5, Low Tide Width (meters) 10

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5
Total annual rainfall (millimetres): 1850
Shoreline configuration/geomorphology/erosion gullies: Sandy beach.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: West.
Direction of prevailing water currents: South East.
Rainfall does not trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 28
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Site Location
Tarawera River Mouth

Site Code
BOP110125

Suitability for Recreation Grade (SFRG)
Very Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
8: Birds
Factors present but without significant impact:
None

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (metres), 2843459, NZMS Northing (metres), 6361112
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: P Scholes

Part A: Land Use
Land Cover and Geography: Pasture, River/Stream Irrigation, Sand Dunes,

Part B: Rural Land Use:
Dairy/Beef, Feral, Horses,

Part C: Water Uses:
Marine Area:
Size of Bathing Area: ,Area (square metres):,16000,Length (metres):,400,Width (metres):,40
Size of Beach Area: Beach Length (metres): 400, High Tide Width (metres): 40, Low Tide Width (metres): 74

Additional Influencing Factors:
Lagoons are used for bathing
Sandbars are present
Beach not subject to above average holiday loading
Average surf wave height (metres): 0.7
Total annual rainfall (millimetres): 1563
Shoreline configuration/geomorphology/erosion gullies: river mouth sand bars to beach
Seasonal rainfall pattern: winter
Rainfall triggers contamination.
Microbiological water quality data exceeded national guidelines at least once.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 570

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Four years of data used with 100% compliant days in the first four years. The 2007/2008 season only 77% compliant due to two red mode alerts and one orange of the 12 samples taken. Both red alert results may be flow related with flows being below average due to prolonged dry period.

Site Location
Ohiwa Harbour Reserve Boat Ramp

Site Code
BOP160009

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
8: Birds
9: Water craft mooring or use
13: River - agricultural activities/birds/feral animals
14: River - focal points of drainage

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2872570, NZMS Northing (meters) 6348650
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Jessica Wiseman and Tony Dwane

Part A: Land Use
Land Cover and Geography: Pasture, sand dunes, flat
Urban Land Uses: Harbour
Disposal of Human Wastes: Septic tanks – Public toilet block

Part B: Rural Land Use
*Information to be supplied

Part C: Water Use
Marine Area: Harbour
Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 9500, Beach Length (meters) 200, High Tide Width (meters) 20, Low Tide Width (meters) 75

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday load in
Total annual rainfall (millimetres): 961
Shoreline configuration/geomorphology/erosion gullies: Flat .sandy beach on a sandspit – low energy.
Seasonal rainfall pattern: No extremes – moderate seasonal rainfall.
Direction of prevailing onshore winds: South West.
Rainfall does trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 70
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Nukuhou River has high indicator bacteria levels could potentially impact on this site.

Site Location
Ohope Beach Surf Club

Site Code
BOP160011

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
8: Birds
Other Impacts:
None

Factors present but without significant impact:
3: Urban stormwater
14: River - focal points of drainage
15: River - feral animals (e.g., forest / bush)

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2864880, NZMS Northing (meters) 6351910
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: P Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, urban, sand dunes, hilly, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated – secondary treatment

Part B: Rural Land Use
*Information to be supplied

Part C: Water Use
Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 17500, Beach Length (meters) 200, High Tide Width (meters) 50, Low Tide Width (meters) 125

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5.
Total annual rainfall (millimetres): 1267
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – high energy coast.
Seasonal rainfall pattern: No extremes – moderate seasonal rainfall.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 273
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Monitoring of the creek either side of the Ohope surf club in 2001 found some contamination in the Mahy Stream. More recent sampling found little contamination in this stream.

Site Location
Ohope Beach – Port Ohope

Site Code
BOP160010

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.

Factors present but without significant impact:
3: Urban stormwater
5: Primary or secondary treatment facilities
14: River – focal points of drainage
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2871410, NZMS Northing (meters) 6349820
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Anna Griffin

Part A: Land Use
Land Cover and Geography: Urban, sand dunes, flat
Urban Land Uses: Residential, hotel
Disposal of Human Wastes: Reticulated – secondary treatment

Part B: Rural Land Use
Horses
Disposal of Animal Waste: No

Part C: Water Use
Size of Bathing Area: Area (square meters) 4000, length (meters) 200, Width (meters) 20

Size of Beach Area: Average Area (square meters) 3000, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 15

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5.
Total annual rainfall (millimetres): 1267
Shoreline configuration/geomorphology/erosion gullies: Steep dunes (cut off) low angle beach.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall does not trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 43

Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:
-Consent: -021061
-060568
- Discharge from wastewater plant.
- Shellfish show high contamination

Site Location
Otarawairere Bay

Site Code
BOP160012

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
14: River - focal points of drainage
15: River - feral animals (e.g., forest / bush)
16: Tidal/onshore winds carry untreated wastewater

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2862400, NZMS Northing (meters) 6353500
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Anna Griffin

Part A: Land Use

Land Cover and Geography: Forest/bush
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated (Urban Area at top of hill)

Part B: Rural Land Use

Information to be supplied

Part C: Water Use

Size of bathing area: Area (square metres) 180000,

Length (metres) 600, Width (metres) 27300,

Size of Beach Area: Average Area (square metres) 27300,

Beach Length (metres) 910, High Tide Width (metres) 15,

Low Tide Width (metres) 30

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5
Total annual rainfall (millimetres): 1267
Shoreline configuration/geomorphology/erosion gullies:
Bay beach surrounded by steep hills
Seasonal rainfall pattern: No extremes
Direction of prevailing onshore winds: North East
Direction of prevailing water currents: North East
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 481
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Elevated faecal levels experienced in this bay and at Ohope may be due to the influence of the Whakatane River, however current river data does not conclusively support this hypothesis.

Site Location
Piripai Beach Ocean Beach

Site Code
BOP160014

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
3: Urban stormwater
4: Private sewage disposal systems
5: Primary or secondary treatment facilities
13: River – agricultural activities/birds/feral animals
14: River – focal points of drainage
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Open Coastal Beach
NZMS Easting (meters) 2859760, NZMS Northing (meters) 6355430
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Pasture, urban, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated – secondary treatment

Part B: Rural Land Use
*Information to be supplied

Part C: Water Use
Size of Bathing Area: Area (square meters) 44100, length (meters) 441, Width (meters) 100

Size of Beach Area: Average Area (square meters) 3835, Beach Length (meters) 590, High Tide Width (meters) 40, Low Tide Width (meters) 90

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1
Total annual rainfall (millimetres): 1267
Shoreline configuration/geomorphology/erosion gullies: Flat sandy shoreline with undulating dune land and flat land adjacent to that.
Seasonal rainfall pattern: No extremes – moderate seasonal rainfall.
Direction of prevailing onshore winds: North East.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 60
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Outfall consent monitoring has shown elevated indicator bacteria levels on occasion.

Site Location
Whakatane Heads Oceanside of Boat Ramp

Site Code
BOP160013

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
13: River – agricultural activities/birds/feral animals
Other Impact:
9: Water craft mooring or use
14: River - focal points of drainage
Factors present but without significant impact:
3: Urban stormwater
7: Intensive agricultural use
8: Birds
10: River - untreated human effluent
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2862480, NZMS Northing (meters) 6354380
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, urban. River/stream irrigation
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated

Part B: Rural Land Use
Sheep, Dairy/Beef, Horses.

Part C: Water Use
Marine Area: Harbour, fish boat berths, permanent boat moorings, temporary boat moorings

Size of Bathing Area: Area (square meters) 200, length (meters) 20, Width (meters) 10

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.1
Total annual rainfall (millimetres): 1267
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: North East
Direction of prevailing water currents: North East
Rainfall does not trigger contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 343
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Whakatane Rivers

Site Location

Waimana River – Waimana Gorge picnic area

Site Code

BOP160105

Suitability for Recreation Grade (SFRG)

Very Good

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
7: Intensive agricultural use
8: Run-off from low intensity agriculture
12: Runoff from feral animals (e.g., forest/bush)
18: Stream - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: River
NZMS Easting (meters) 2864470, NZMS Northing (meters) 6336450
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, river/stream irrigation, hilly
Disposal of Human or Animal Wastes: Septic tank at toilet block

Part B: Rural Land Use

Feral

Part C: Water Use

Size of Bathing Area: Area 16800, Length 560, Width 30

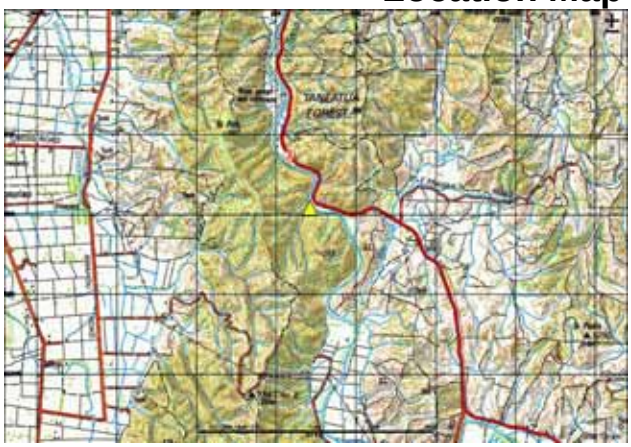
Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Steep adjacent topography with high riverbanks
Total annual rainfall (millimetres): 1632
Location of rainfall monitoring station: Waimana.
Seasonal rainfall pattern: High rainfall over winter period
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – B

Hazen Percentile Result: 258
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map



Comments:

Site Location
Whakatane River – Landing Road Bridge

Site Code
BOP160106

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
8: Run-off from low intensity agriculture
16: Stream - High intensity agriculture or feral animals/birds
17: Stream - Runoff from low intensity agriculture
Factors present but without significant impact:
3: Urban stormwater
4: Private sewage disposal systems
11: Water craft mooring or use

Site Identification
Type of Site: River
NZMS Easting (meters) 2859160, NZMS Northing (meters) 6352880
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Urban, flat
Urban Land Uses: Residential
Industry: Board Mills
Disposal of Human or Animal Wastes: Primary treatment and septic tanks

Part B: Rural Land Use
Sheep, Dairy, Beef, Horses.

Part C: Water Use
Size of Bathing Area: Area 97500, Length 650, Width 150

Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Flat Plain area.
Total annual rainfall (millimetres): 1317
Location of rainfall monitoring station: Thornton.
Seasonal rainfall pattern: Moderate seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 420
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:
Board Mill opposite, deposits discharge into river, also has septic tank.

Te Rahu canal has very poor water quality and is discharged periodically into the Whakatane River.

Site Location

Rangitaiki River – Thornton Domain

Site Code

BOP160109

Suitability for Recreation Grade (SFRG)

Poor

Sanitary Inspection Category (SIC)

SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
8: Run-off from low intensity agriculture
16: River - High intensity agriculture or feral animals/birds
Factors present but without significant impact:
4: Private sewage disposal systems
11: Water craft mooring or use
13: Stream - Discharge of untreated human effluent
17: Stream - Runoff from low intensity agriculture

Site Identification

Type of Site: River/estuary
NZMS Easting (meters) 2849910, NZMS Northing (meters) 6357250
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Pasture, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tanks (ground soakage).
No direct stormwater discharge due to drainage scheme.

Part B: Rural Land Use

Dairy
Disposal of Animal Wastes: yes.

Part C: Water Use

Size of Bathing Area: Area 77900, Length 410, Width 190

Additional Influencing Factors:

Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Dune land area encompasses undulating dunes.
Total annual rainfall (millimetres): 1267.
Location of rainfall monitoring station: Thornton
Seasonal rainfall pattern: Moderate seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – C

Hazen Percentile Result: 529

Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

- Consents: 50873
  20585
  20400
  61850
  23993
  62038
- Data from Reids Central Canal show high levels of E.coli.

Site Location
Rangitaiki River – Te Teko

Site Code
BOP160109

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
8: Run-off from low intensity agriculture

Site Identification
Type of Site: River
NZMS Easting (metres) 2843543, NZMS Northing (metres) 6344856.
Name of Local Authority: Whakatane District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, Pasture, Urban, Hilly, Flat.
Urban Land Uses: Residential,
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Horticulture

Part B: Rural Land Use
Sheep, Dairy, Beef, Horses.

Part C: Water Use
Size of Bathing Area: Area 2000, Length 50, Width 40

Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Steep sided river banks.
Total annual rainfall (millimetres): 1408
Location of rainfall monitoring station: Te Teko.
Seasonal rainfall pattern: medium annual rainfall with one off events.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 115
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Kawerau Rivers

Site Location
Ruruanga Stream – Cricket Pavilion

Site Code
BOP1601011

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
2: Stormwater outlets
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
6: Tertiary treatment facilities
9: Unrestricted stock access to waterways
12: Runoff from feral animals (e.g., forest/bush)
14: Stormwater outlets with sewage contamination
17: Runoff from low intensity agriculture
18: Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: River
NZMS Easting (meters) 2834920, NZMS Northing (meters) 6340300
Name of Local Authority: Kawerau District Council
Name of Person Completing Checklist: Jessica Wiseman

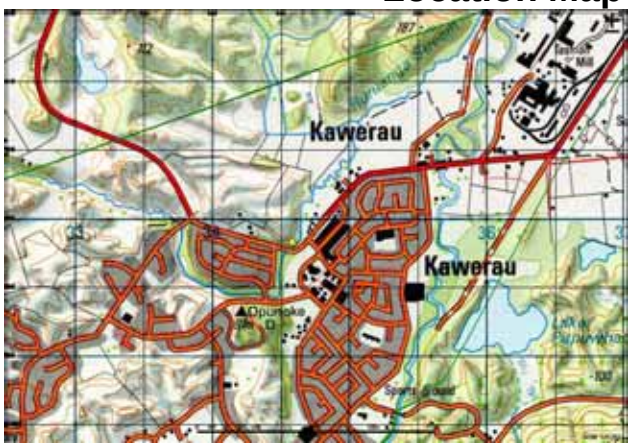
Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, flat
Urban Land Uses: Residential
Industry: Pulp & Paper Mill – Industry Park
Disposal of Human or Animal Wastes: Tertiary treatment – adjacent septic tanks

Part B: Rural Land Use
Sheep, beef, feral, horses

Part C: Water Use
Size of Bathing Area: Area 750, Length 50, Width 15

Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Undulating topography with some flat areas adjacent to site
Total annual rainfall (millimetres): 1852
Location of rainfall monitoring station: Te Teko
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 403
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Site Location
Tarawera River – Boyce Park

Site Code
BOP1601010

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
3: Urban stormwater
Other Impact:
None
Factors present but without significant impact:
12: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: River
NZMS Easting (meters) 2835700, NZMS Northing (meters) 6340160
Name of Local Authority: Kawerau District Council
Name of Person Completing Checklist: Jessica Wiseman

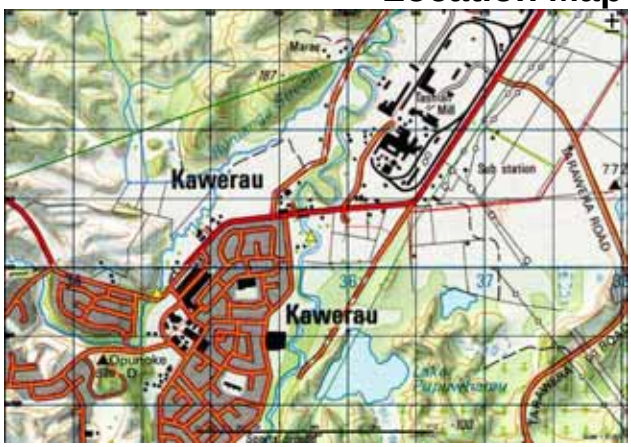
Part A: Land Use
Land Cover and Geography: Urban, flat
Urban Land Uses: Residential
Industry: Pulp & Paper Mills
Disposal of Human or Animal Wastes: Tertiary treatment

Part B: Rural Land Use
Feral, horses

Part C: Water Use
Size of Bathing Area: Area 3900, Length 130, Width 30

Additional Influencing Factors:
Site subject to seasonal/holiday loading
Shoreline configuration/geomorphology/erosion gullies: Undulating with some flat areas – reaching outer topography, which is steep intensive forestry
Total annual rainfall (millimetres): 1852
Location of rainfall monitoring station: Te Teko
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions
Rainfall triggers contamination
Microbiological water quality data has exceeded national guidelines at least once
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 136
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Kawerau is on a Tertiary Treatment which is directed into Tasman (SCA).
Stormwater in this area is reticulated.
There is another industrial area adjacent to site location but is unknown as to whether they discharge directly into river.
There could be effects to water quality due to geothermal action in the area.

WBOP Marine

Site Location
Pukehina Beach

Site Code
BOP160015

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
4: Private sewage disposal systems
7: Intensive agricultural use
16: Tidal/onshore winds carry untreated wastewater

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2820950, NZMS Northing (meters) 6373180
Name of Local Authority: Western Bay of Plenty District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Pasture, urban, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tank

Part B: Rural Land Use

Dairy/beef, horses

Part C: Water Use

Size of Bathing Area: Area (square meters) 100000, length (meters) 5000, Width (meters) 20

Size of Beach Area: Average Area (square meters) 50000, Beach Length (meters) 5000, High Tide Width (meters) 5, Low Tide Width (meters) 15

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5.
Total annual rainfall (millimetres): 1676
Shoreline configuration/geomorphology/erosion gullies:
Peninsular extending across estuary.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: South East.
Rainfall does not trigger contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 15
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Community is on septic tanks with some high indicator bacteria results found in groundwater, but this has not been traced to the ocean.

Site Location
Little Waihi - Domain Boat Ramp

Site Code
BOP160016

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
13: River - agricultural activities/birds/feral animals
Other Impact:
4: Private sewage disposal systems
14: River - focal points of drainage
Factors present but without significant impact:
2: Stormwater outlets
7: Intensive agricultural use
10: River - untreated human effluent

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2816800, NZMS Northing (meters) 6376280
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, urban, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use
Dairy/beef, horses
Disposal of Animal Wastes: No

Part C: Water Use
Size of Bathing Area: Area (square meters) 5000, length (meters) 50, Width (meters) 100

Size of Beach Area: Average Area (square meters) 6250, Beach Length (meters) 100, High Tide Width (meters) 50, Low Tide Width (meters) 75

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1508
Shoreline configuration/geomorphology/erosion gullies: Low energy enclosed estuary.
Seasonal rainfall pattern: Good annual rainfall – can be affected during extreme rain events.
Direction of prevailing onshore winds: East.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 276
Data Set Extent:
Interim Data Set: <5 years or <100 samples tested

Location Map


Comments:
Estuary is impacted by septic tank effluent a result of the very little unsaturated soil present for proper disposal field operation. Dilution occurs with tidal surges with the inlet adjacent to the community location most affected by contamination. Shellfish contamination of the cockle beds in the harbour has been detected and warning signs have been erected.

Site Location
Maketu Surf Club

Site Code
BOP160017

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
13: River - agricultural activities/birds/feral animals
Other Impact:
14: River - focal points of drainage
Factors present but without significant impact:
2: Stormwater outlets
3: Urban stormwater
4: Private sewage disposal systems
7: Intensive agricultural use
10: River - untreated human effluent

Site Identification
Type of Site: Open Coastal Beach/Estuarine
NZMS Easting (meters) 2814680, NZMS Northing (meters) 6377380
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Urban, river/stream irrigation, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks
Potentially Polluting Activities: Affco Plant discharges to Kaituna River.

Part B: Rural Land Use
Dairy/beef
Disposal of Animal Wastes: No

Part C: Water Use
Size of Bathing Area: Area (square meters) 2500, length (meters) 50, Width (meters) 150

Size of Beach Area: Average Area (square meters) 2500, Beach Length (meters) 50, High Tide Width (meters) 40, Low Tide Width (meters) 60

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1.
Total annual rainfall (millimetres): 1508.
Shoreline configuration/geomorphology/erosion gullies: Estuary flow, north littoral drift. Steep boulder beach/ eroding sand banks
Seasonal rainfall pattern: No extremes – good annual rainfall.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North West.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 218
Data Set Extent:
Interim Data Set: <100 samples tested

Location Map


Comments:
The estuary shows some impacts of septic tank effluent, a result of the very little unsaturated soil present for proper disposal field operation.

Site Location
Omokoroa Beach

Site Code
BOP160022

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None.
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
9: Water craft mooring or use

Site Identification

Type of Site: Estuarine
NZMS Easting (meters) 2779730, NZMS Northing (meters) 6392320
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Urban, swamp/mangrove
Urban Land Uses: Residential, harbour
Disposal of Human Wastes: Secondary treatment

Part C: Water Use

Marine Area: Harbour, permanent boat moorings, temporary boat moorings, ferry berth

Size of Bathing Area: Area (square meters) 3000, length (meters) 150, Width (meters) 200

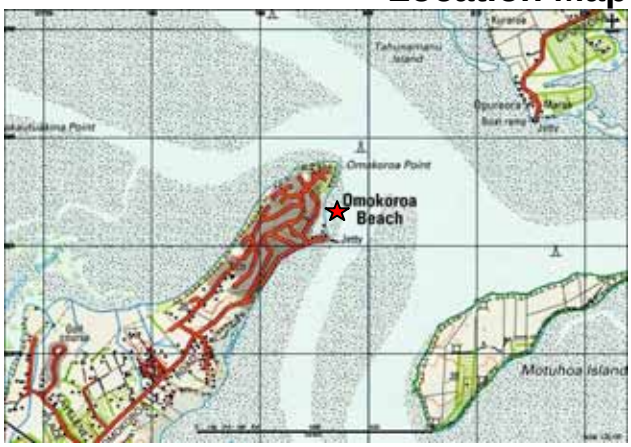
Size of Beach Area: Average Area (square meters) 800, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 75

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1508.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – grassed reserve.
Seasonal rainfall pattern: Good annual rainfall – no extremes.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 40
Data Set Extent:
Interim Data Set: <5 years or <100 samples tested

Location Map



Comments:
Community has been recently reticulated (2007).

Site Location
Pahoia End of Beach

Site Code
BOP160023

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Low

Primary Impact:
14: River - focal points of drainage
Other Impact:
4: Private sewage disposal systems
Factors present but without significant impact:
7: Intensive agricultural use
8: Birds
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2775370, NZMS Northing (meters) 6392630
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, swamp/mangrove, hilly
Urban Land Uses: Residential, harbour
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use
Sheep/dairy, beef

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 43200, Beach Length (meters) 600, High Tide Width (meters) 24, Low Tide Width (meters) 120

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1508.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: North East.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
Horses often found bathing in this location.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 235
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Horses have been seen swimming at this site on several occasions.

Site Location
Ongare Point Harbour View Road

Site Code
BOP160032

Suitability for Recreation Class (SFRC)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Low

Primary Impact:
14: River - focal points of drainage
Other Impacts:
2: Stormwater outlets
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
9: Water craft mooring or use
11: River - stormwater outlets
13: River - agricultural activities/birds/feral animals

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2772680, NZMS Northing (meters) 6407060
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, swamp/mangrove, river/stream irrigation, hilly, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks

Part B: Rural Land Use
Dairy/beef, horses
Disposal of Animal Wastes: No

Part C: Water Use
Marine Area: Harbour, permanent boat moorings, temporary boat moorings

Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 5500, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 50

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1508.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy/mudflat low energy shoreline.
Seasonal rainfall pattern: No extremes – medium annual rainfall
Direction of prevailing onshore winds: East.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 213
Data Set Extent:
Interim Data Set: <5 years or <100 samples tested

Location Map


Comments:
Seeps, drains and stream flow onto the beach show contamination by septic tank effluent.

Sea lettuce can built up at waters edge.

Site Location
Tanners Point Beach

Site Code
BOP160031

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None.
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
8: Birds
9: Water craft mooring or use
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2770900, NZMS Northing (meters) 6409050
Name of Local Authority: Western Bay of Plenty District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, urban
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tank

Part C: Water Use
Marine Area: Permanent boat moorings, temporary boat moorings

Size of Bathing Area: Area (square meters) 1000, length (meters) 50, Width (meters) 20

Size of Beach Area: Average Area (square meters) 1375, Beach Length (meters) 50, High Tide Width (meters) 5, Low Tide Width (meters) 50

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1892.
Shoreline configuration/geomorphology/erosion gullies: Tidal currents. Flat sandy beach – low energy shoreline
Seasonal rainfall pattern: No extremes – medium annual rainfall with one off events e.g. storms etc.
Direction of prevailing onshore winds: East.
Rainfall triggers contamination.
Microbiological water quality data exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 73
Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:
Seeps and drains onto the beach show contamination by septic tank effluent

Site Location
Athenree opposite Motor Camp

Site Code
BOP160030

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
4: Private sewage disposal system
5: Primary or secondary treatment facilities
8: Birds
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2772880, NZMS Northing (meters) 6412870
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Pasture, urban, flat
Urban Land Uses: Residential, hotel
Disposal of Human Wastes: Reticulated

Part B: Rural Land Use
Information to be supplied

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 4500, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 25

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1892.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy – low energy shoreline.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: North East.
Rainfall triggers contamination.
Microbiological water quality data exceeded national guidelines at least once.
There is no additional information implying risk
There is no river or stream discharging into the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 409
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Anzac Bay Bowentown Domain

Site Code
BOP160028

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal system

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2774210, NZMS Northing (meters) 6410630
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tank at public toilets
Part B: Rural Land Use
Feral
Disposal of Animal Waste: No

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 5000, length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 1750, Beach Length (meters) 100, High Tide Width (meters) 5, Low Tide Width (meters) 30

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1892
Shoreline configuration/geomorphology/erosion gullies.
Flat sandy beach – steep dunes behind leading to reserve area
Seasonal rainfall pattern: No extremes – medium annual rainfall.
Direction of prevailing onshore winds: South West.
Rainfall does not trigger contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 58
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Site Location
Waihi Beach Surf Club

Site Code
BOP160027

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Low

Primary Impact:
14: River – Focal points of drainage
Other Impact:
12: River - tertiary treatment facilities
Factors present but without significant impact:
3: Urban Stormwater
6: Tertiary treatment facilities

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2770470, NZMS Northing (meters) 6418610
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, swamp/mangroves, river/stream irrigation, sand dunes, hilly, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated – tertiary treatment

Part B: Rural Land Use

Dairy/beef, feral, horses

Part C: Water Use

Size of Bathing Area: Area (square meters) 4000, length (meters) 200, Width (meters) 200

Size of Beach Area: Average Area (square meters) 2000, Beach Length (meters) 200, High Tide Width (meters) 75, Low Tide Width (meters) 125

Additional Influencing Factors:

Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5.
Total annual rainfall (millimetres): 1892.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach.
Seasonal rainfall pattern: Consistent rainfall.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is additional information implying risk
There is a river or stream discharging into the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 48
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Waihi Streams entering Waihi Beach has recorded high *E.coli* concentrations in 2000/2001. This was before further residents were put on reticulated sewage. Streams at 2 mile and 3 mile creek continue to have elevated indicator bacteria results.

Site Location
Waitui Reserve – Te Puna

Site Code
BOP800087

Suitability for Recreation Grade (SFRG)
Follow-up

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very High

Primary Impact:
4: Private sewage disposal system
Other Impact:
2: Stormwater outlets
Factors present but without significant impact:
9: Water craft mooring or use
16: tidal/onshore winds carry untreated wastewater

Site Identification

Type of Site: Estuarine
NZMS Easting (meters) 2779410, NZMS Northing (meters) 6389120
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human Wastes: Septic tanks
Potentially Polluting Activities: Low intensity agriculture

Part C: Water Use

Marine Area: Permanent boat moorings, temporary boat moorings

Size of Bathing Area: Area (square meters) 8000, length (meters) 400, Width (meters) 20

Size of Beach Area: Average Area (square meters) 2000, Beach Length (meters) 400, High Tide Width (meters) 2, Low Tide Width (meters) 15

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1330
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach surrounded by low lying residential property and 5metre sandstone cliffs to the east.
Seasonal rainfall pattern: Good annual rainfall.
Direction of prevailing onshore winds: East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 153
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Seeps and drains onto the beach show contamination by septic tank effluent. Signs have been erected warning not to consume shellfish from this area.

- Evidence of shellfish contamination.

WBOP Rivers

Site Location

Wairoa River - McLaren Falls Dam

Site Code

BOP160124

Suitability for Recreation Grade (SFRG)

Poor

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
12: Runoff from feral animals (e.g., forest/bush)
17: Stream - Runoff from low intensity agriculture
18: Stream - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: River
NZMS Easting (meters) 2778320, Northing (meters) 6372940
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, river/stream irrigation
Disposal of Human or Animal Wastes: Septic tanks

Part B: Rural Land Use

Sheep, beef, feral, deer, poultry, horses
Disposal of Animal Wastes: Poultry waste is put back on farm…is not adjacent to site

Part C: Water Use

Size of Bathing Area: Area 1960, Length 70, Width 28

Additional Influencing Factors:
Site subject to seasonal/holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Undulating topography with the ranges
Total annual rainfall (millimetres): 2062
Location of rainfall monitoring station: McLaren Falls Road
Seasonal rainfall pattern: Upland region of Kaimai ranges cool. Rainfall triggers contamination
Microbiological water quality data has exceeded national guidelines at east once
There is no additional information implying risk
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)

MAC Grade – D

Hazen Percentile Result: 2790
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Catchment survey above the falls showed contamination was spread throughout the catchment, but concentrated on the Mangokarengorengo. Risk is increased with saturated catchment conditions and rainfall.

A permanent warning sign has been erected.

Site Location
Kaituna River – Te Matai Rail Bridge

Site Code
BOP160129

Suitability for Recreation Grade (SFRG)
Very Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
2: Stormwater outlets
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
17: Lake - Runoff from low intensity agriculture
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: River
NZMS Easting (meters) 2806070, Northing (meters) 6373660
Name of Local Authority: Western Bay of Plenty District Council and Environment Bay of Plenty
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Pasture, flat
Urban Land Uses: Residential, sanitary landfills/old dumps
Disposal of Human or Animal Wastes: Septic tank, old landfill is approximately 910m away from site
Potentially Polluting Activities: AFCO discharge. Horticulture

Part B: Rural Land Use
Dairy, beef
Disposal of Animal Wastes: AFFCO meat works

Part C: Water Use
Size of Bathing Area: Area 5000, Length 100, Width 50

Additional Influencing Factors:
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Flat agriculture.
Total annual rainfall (millimetres): 1850
Location of rainfall monitoring station: Rangiuru Rd
Seasonal rainfall pattern: Moderate seasonal rainfall
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 254
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:
This site includes two points of stormwater discharge. One of which comes directly from the nearby primary school at Te Matai.

Runoff from farms – all dairy effluent within this area is irrigated back onto the land.

Seepage from septic tanks within close vicinity is one probable impact to this site, but the largest loading is from AFFCO's treated discharge, which is consistently monitored, under resource consent

- Consents: 24932 and 22809.

Site Location

Uretara Stream - Katikati

Site Code

BOP160123

Suitability for Recreation Grade (SFRG)

Fair

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Moderate

Primary Impact:
3: Urban stormwater
Other Impact:
None
Factors present but without significant impact:
5: Primary or secondary treatment facilities
11: Water craft mooring or use

Site Identification

Type of Site: River/stream
NZMS Easting (meters) 2768070, Northing (meters) 6401540
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Pasture, urban, hilly
Disposal of Human or Animal Wastes: Reticulated secondary treatment
Potentially Polluting Activities: Intensive horticulture

Part B: Rural Land Use

Sheep, beef, horses

Part C: Water Use

Size of Bathing Area: Area 1500, Length 50, Width 30

Additional Influencing Factors:

Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Land development and residential area above gully. This gully consists of low lying flat area adjacent to site.
Total annual rainfall (millimetres): 1595
Location of rainfall monitoring station: Katikati
Seasonal rainfall pattern: Moderate rainfall with one off events.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – C

Hazen Percentile Result: 286
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map

Comments:

Site Location
Tuapiro Stream – McMillan Road

Site Code
BOP160126

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
13: Stream- Discharge of untreated human effluent
17: Stream - Runoff from low intensity agriculture
18: Stream - Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2767830, Northing (meters) 6406080
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

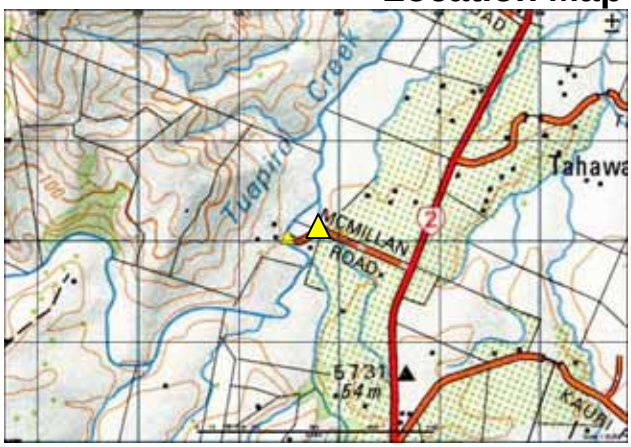
Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly, flat
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use
Sheep, beef, horses

Part C: Water Use
Size of Bathing Area: Area 434, Length 62, Width 7

Additional Influencing Factors:
Site not subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Undulating topography forming large flat areas used for horticulture.
Total annual rainfall (millimetres): 1595.
Location of rainfall monitoring station: Katikati.
Seasonal rainfall pattern: Moderate seasonal rainfall.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 457
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:

Site Location
Ngamuwahine River

Site Code
BOP160125

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
12: Run-off from feral animals (e.g. forest/bush)
Factors present but without significant impact:
4: Private sewage disposal systems
17: Run-off from low intensity agriculture
18: Run-off from feral animals (e.g. forest/bush)

Site Identification

Type of Site: River/stream
NZMS Easting (meters) 2774470, Northing (meters) 6372820
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, hilly
Urban Land Uses: Residential, sanitary landfills/old dumps
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use

Sheep, beef, feral

Part C: Water Use

Size of Bathing Area: Area 2400, Length 120, Width 20

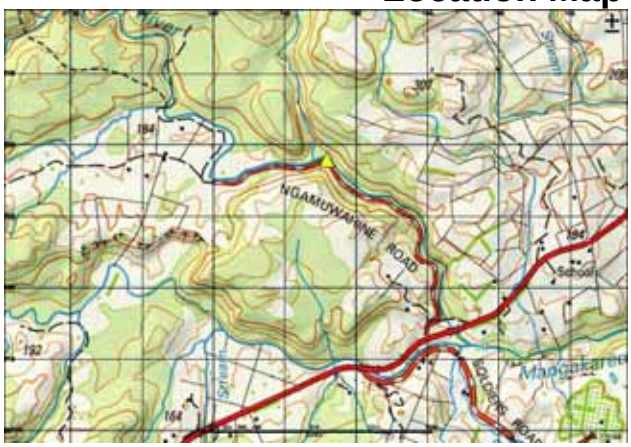
Additional Influencing Factors:

Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Undulating to steep ranges.
Total annual rainfall (millimetres): 2284
Location of rainfall monitoring station: Upper Kaimai.
Seasonal rainfall pattern: Can experience high rainfall
Rainfall triggers contamination
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 1273
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map



Comments:

Tauranga Marine

Site Location
Papamoa Surf Club

Site Code
BOP16002

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
6: Tertiary treatment facilities
14: River - focal points of drainage

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2802760, NZMS Northing (meters) 6383040
Name of Local Authority: Tauranga District Council
Name of Person Completing Checklist: Jessica Weisman

Part A: Land Use

Land Cover and Geography: Urban, sand dunes, flat
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated – tertiary treated

Part C: Water Use

Size of Bathing Area: Area (square meters) 10000, length (meters) 150, Width (meters) 25

Size of Beach Area: Average Area (square meters) 10000, Beach Length (meters) 150, High Tide Width (meters) 20, Low Tide Width (meters) 50

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are not present.
Beach subject to above average holiday loading
Average surf wave height (meters): 1
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Sandy Beach.
Seasonal rainfall pattern: No extremes – average annual rainfall.
Direction of prevailing onshore winds: East
Direction of prevailing water currents: North
Rainfall does not trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 25
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Occasional high microbiological results have been monitored in the drains near this site (e.g. Harrisons Cut).

Site Location
Omanu Beach

Site Code
BOP900096

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
3: Urban Stormwater
6: Tertiary treatment facilities
16: Tidal/onshore winds carry treated wastewater

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2793830, NZMS Northing (meters) 6388810
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Urban, sand dunes
Urban Land Uses: Residential
Disposal of Human Wastes: Reticulated - tertiary treated

Part C: Water Use

Size of Bathing Area: Area (square meters) 5000, length (meters) 100, Width (meters) 50

Size of Beach Area: Average Area (square meters) 6500, Beach Length (meters) 100, High Tide Width (meters) 30, Low Tide Width (meters) 100

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.5
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach with steep foredune.
Seasonal rainfall pattern: No extremes – annual average rainfall. One off storm events may impact.
Direction of prevailing onshore winds: East
Direction of prevailing water currents: North
Rainfall does not trigger contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 41
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Te Maunga treated wastewater discharge is piped off this beach.

Site Location
Mt Maunganui

Site Code
BOP160025

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
3: Urban Stormwater
6: Tertiary treatment facilities
16: Tidal/onshore winds carry treated wastewater

Site Identification

Type of Site: Open Coastal Beach
NZMS Easting (meters) 2790720, NZMS Northing (meters) 6391830
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential, hotel
Disposal of Human Wastes: Tertiary Treatment

Part B: Rural Land Use

Sheep
Disposal of animal waste: No

Part C: Water Use

Size of Bathing Area: Area (square meters) 50000, length (meters) 1000, Width (meters) 500

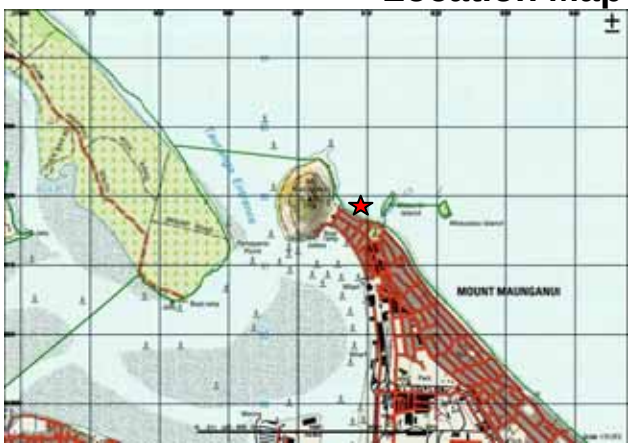
Size of Beach Area: Average Area (square meters) 16250, Beach Length (meters) 1000, High Tide Width (meters) 175, Low Tide Width (meters) 250

Additional Influencing Factors:
Lagoons are not used for bathing.
Beach subject to above average holiday loading
Average surf wave height (meters): 1.5
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Flat beach – steep intertidal zone.
Seasonal rainfall pattern: No extremes – good annual rainfall.
Direction of prevailing onshore winds: East
Direction of prevailing water currents: North
Rainfall does not trigger contamination.
Microbiological water quality data has not exceeded national guidelines.
There is additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 29
Data Set Extent:
Interim Data Set: <100 samples used

Location Map



Comments:

Site Location
Pilot Bay – Mid Beach

Site Code
BOP160024

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
9: Water craft mooring or use
Other Impact:
None
Factors present but without significant impact:
3: Urban Stormwater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2790500, NZMS Northing (meters) 6391490
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Urban, flat
Urban Land Uses: Residential, harbour, road/rail
Industry: Warf
Disposal of Human Wastes: Reticulated – tertiary treated

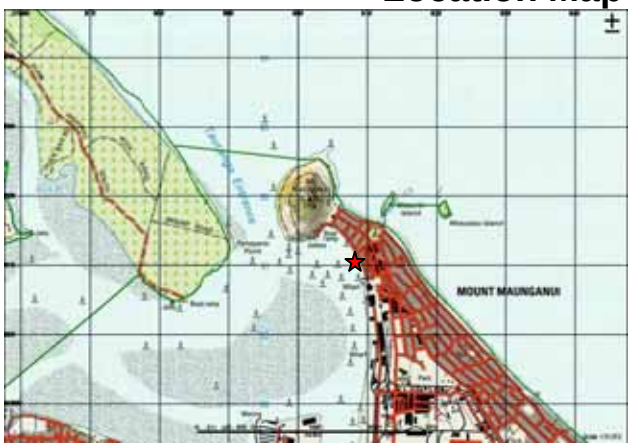
Part C: Water Use
Marine Area: Harbour, fish boat berths, permanent boat moorings, temporary boat moorings, ferry berth

Size of Bathing Area: Area (square meters) 4000, length (meters) 50, Width (meters) 800

Size of Beach Area: Average Area (square meters) 3200, Beach Length (meters) 800, High Tide Width (meters) 10, Low Tide Width (meters) 70

Additional Influencing Factors:
Lagoons are not used for bathing
Sandbars are not present
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – low energy
Seasonal rainfall pattern: No extremes – average rainfall
Direction of prevailing onshore winds: West
Rainfall does not trigger contamination
Microbiological water quality data has exceeded national guidelines at least once
There is no additional information implying risk
There is no river or stream discharging into the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 174
Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:
Warning signs have been erected at this beach previously after monitoring detected high bacterial counts. An investigation concluded that a boat had discharged effluent while leaving the harbour.

Site Location
Maungatapu – Rangataua Bay

Site Code
BOP160049

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
9: Water craft mooring or use

Site Identification

Type of Site: Estuarine
NZMS Easting (meters) 2791170, NZMS Northing (meters) 6383180
Name of Local Authority: Tauranga District Council
Name of Person Completing Checklist: Anna Griffin

Part A: Land Use

Land Cover and Geography: Pasture, urban, hilly
Urban Land Uses: Harbour
Disposal of Human Wastes: Reticulated

Part B: Rural Land Use

Sheep, dairy/beef

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 10000, length (meters) 200, Width (meters) 50

Size of Beach Area: Average Area (square meters) 2000, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 20

Additional Influencing Factors:
Lagoons are used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.1
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Beach – tidal flats to main channel
Seasonal rainfall pattern: No extremes
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: North.
Rainfall triggers contamination.
Microbiological water quality data has not exceeded national guidelines.
There is no additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 79
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Site Location
Waimapu Estuary

Site Code
BOP160019

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Low

Primary Impact:
14: River – focal points of drainage
Other Impact:
13: River - agricultural activities/birds/feral animals
Factors present but without significant impact:
2: Stormwater outlets
3: Urban stormwater
8: Birds
9: Water craft mooring or use

Site Identification

Type of Site: Estuarine
NZMS Easting (meters) 2789110, NZMS Northing (meters) 6382490
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Urban, swamp/mangrove, flat
Urban Land Uses: Residential, hotel, harbour, road/rail
Disposal of Human Wastes: Reticulated

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 1000, length (meters) 50, Width (meters) 20

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.1
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Sea-wall and boat ramp into main channel of estuary.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: North East.
Direction of prevailing water currents: North.
Rainfall does trigger contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk
There is a river or stream discharging into the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 125
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Otumoetai Beach

Site Code
BOP160021

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
13: River - agricultural activities/birds/feral animals
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
3: Urban Stormwater
6: Tertiary treatment facilities
8: Birds
9: Water craft mooring or use
16: Tidal/onshore winds carry untreated wastewater

Site Identification
Type of Site: Estuarine
NZMS Easting (meters) 2787670, NZMS Northing (meters) 6388410
Name of Local Authority: Tauranga District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Urban, flat
Urban Land Uses: Residential, harbour
Disposal of Human Wastes: Reticulated - tertiary

Part B: Rural Land Use
Sheep, dairy/beef, forestry.

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 4000, length (meters) 200, Width (meters) 20

Size of Beach Area: Average Area (square meters) 1100, Beach Length (meters) 200, High Tide Width (meters) 5, Low Tide Width (meters) 100

Additional Influencing Factors:
Lagoons are not used for bathing.
Beach subject to above average holiday loading
Average surf wave height (meters): 0.1
Total annual rainfall (millimetres): 1245
Shoreline configuration/geomorphology/erosion gullies: Small beach drops from edge of reserve.
Seasonal rainfall pattern: No extremes.
Direction of prevailing onshore winds: West.
Direction of prevailing water currents: North.
Rainfall does not trigger contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is no river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 269
Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:

Overflow structure for sewage reticulation located in this area.

Influence from the Wairoa River.

Site Location
Tilby Point Reserve - Tauranga

Site Code
BOP160020

Suitability for Recreation Grade (SFRG)
Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
3: Urban stormwater
Other Impact:
13: River - agricultural activities/birds/feral animals
14: River – focal points of drainage
16: Tidal/onshore winds carry untreated wastewater
Factors present but without significant impact:
6: Tertiary treatment facilities

9: Water craft mooring or use

10: River – untreated human effluent

Site Identification

Type of Site: Estuarine
NZMS Easting (meters) 2785900, NZMS Northing (meters) 6388930
Name of Local Authority: Tauranga City Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Urban, flat
Urban Land Uses: Residential, harbour
Disposal of Human Wastes: Reticulated – tertiary treatment
Potentially Polluting Activities: Toilet block on shore at boat-ramp is contaminating adjacent shoreline

Part C: Water Use
Marine Area: Harbour

Size of Bathing Area: Area (square meters) 9000, length (meters) 300, Width (meters) 30

Size of Beach Area: Average Area (square meters) 3300, Beach Length (meters) 300, High Tide Width (meters) 2, Low Tide Width (meters) 20

Additional Influencing Factors:
Lagoons are not used for bathing.
Sandbars are present.
Beach subject to above average holiday loading
Total annual rainfall (millimetres): 1330
Shoreline configuration/geomorphology/erosion gullies: Flat sandy – low energy coastline.
Seasonal rainfall pattern: No extremes – average annual rainfall.
Direction of prevailing onshore winds: West.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a river or stream discharging into the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 139
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Tauranga Rivers

Site Location
Waimapu River - Greerton

Site Code
BOP160150

Suitability for Recreation Grade (SFRG)
Very Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
8: Run-off from low intensity agriculture
16: Stream -High intensity agriculture or feral animals/birds
Factors present but without significant impact:
3: Urban stormwater

Site Identification

Type of Site: River
NZMS Easting (meters) 2787480, Northing (meters) 6380500
Name of Local Authority: Tauranga District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, urban, wetlands, hilly, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Tertiary treatment
Potentially Polluting Activities: Water discharge from Polytechnic diving pool

Part B: Rural Land Use

Feral

Part C: Water Use

Size of Bathing Area: Area 1200, Length 40, Width 30

Additional Influencing Factors:
Site not subject to seasonal/ holiday loading.
Shoreline configuration/geomorphology/erosion gullies: Flat floodplain/wetlands across stream.
Total annual rainfall (millimetres): 1245
Location of rainfall monitoring station: Sewage Plant
Seasonal rainfall pattern: No extremes – can be prone to flooding after rainfall event.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 1252
Data Set Extent:
Interim Data Set: <100 samples used

Location Map

Comments:

Part of Oropi catchment is on septic disposal.
Warning sign usually in place.

Site Location
Wairoa River - Bethlehem

Site Code
BOP160122

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
7: Intensive agricultural use
Other Impact:
8: Run-off from low intensity agriculture
Factors present but without significant impact:
4: Private sewage disposal systems

Site Identification
Type of Site: River/estuarine
NZMS Easting (meters) 2783070, Northing (meters) 6384570
Name of Local Authority: Western Bay of Plenty District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Over land flow stormwater

Part B: Rural Land Use
Sheep, beef, horses.

Part C: Water Use
Size of Bathing Area: Area 16000, Length 200, Width 80

Recreational facility upstream of monitoring station

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Undulating adjacent topography predominantly used for horticulture.
Total annual rainfall (millimetres): 1330
Location of rainfall monitoring station: Te Puna - Stannett
Seasonal rainfall pattern: No extremes – moderate seasonal rainfall.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D
Hazen Percentile Result: 1240
Data Set Extent:
Interim Data Set: <100 samples used

Location Map


Comments:
Lower catchment survey undertaken. Sampling occurred upstream as far as Waireia Stream tributary. No source was indicated, however cows were observed in a stream.
Urban subdivision occurring at a rapid pace so it is likely that urban stormwater will be discharged upstream of the monitoring site.

Rotorua Lakes

Site Location
Lake Rotoma – Matahi Lagoon Rd

Site Code
BOP160050

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:

0: No significant source indicated.

Other Impact:

None

Factors present but without significant impact:

4: Private sewage disposal systems
12: Runoff from feral animals (e.g., forest/bush)
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2826150, NZMS Northing (meters) 6342430
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, wetlands, river/stream irrigation, hilly
Disposal of Human or Animal Wastes: Public toilet has now been removed – this was on septic tank prior to removal

Part B: Rural Land Use

Feral

Part C: Water Use

Fresh Area: Boat Ramp

Size of Bathing Area: Area 33945, length 465, Width 73

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Flat sandy beach – behind parking area and lagoon topography is steep with high vegetation cover.
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B

Hazen Percentile Result: 162

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Lake Rotoma – Anaputa Point

Site Code
BOP160051

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated

Other Impact:
None

Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
11: Water craft mooring or use
12: Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2824410, NZMS Northing (meters) 6342350
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use
Beef, feral

Part C: Water Use
Size of Bathing Area: Area 51350, length 790, Width 65

Additional Influencing Factors:
Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Flat to sloping shoreline with steep topography across road above housing area
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma
Seasonal rainfall pattern: Heavy to moderate rainfall throughout the year.
Rainfall triggers contamination
Microbiological water quality data has never exceeded national guidelines
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 39

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Site Location
Lake Rotoma – Whangaroa

Site Code
BOP160052

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.

Other Impact:
None

Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
11: Water craft mooring or use
13: Lake - Discharge of untreated human effluent
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2823500, NZMS Northing (meters) 6343900
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use
Horses

Part C: Water Use
Fresh Area: Boat Ramp, jetty/wharf

Size of Bathing Area: Area 7600, length 190, Width 40

Additional Influencing Factors:
Site subject to seasonal/holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline with steep forming topography behind housing area.
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma
Seasonal rainfall pattern: Moderate to heavy seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 96

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Contamination of bore water implying impact from septic tank (*pers comm*. Mark Buckley, RDC).

- Consents: 61256 63001
61255 20800
62910 63052

Site Location
Lake Okataina - Beach

Site Code
BOP160059

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
12: Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2810910, NZMS Northing (meters) 6338900
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, hilly
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use

Feral

Part C: Water Use

Fresh Area: Boat ramp, jetty/wharf

Size of Bathing Area: Area 47000, length 470, Width 100

Additional Influencing Factors:

Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Steep shoreline and surrounding area. High vegetation cover
Total annual rainfall (millimetres): 1428
Location of rainfall monitoring station: Whakarewarewa
Seasonal rainfall pattern: High rainfall during winter months
Rainfall triggers contamination
Microbiological water quality data has never exceeded national guidelines
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Location Map

Comments:

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 9
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Site Location
Lake Rotoiti – Hinehopu (Jetty)

Site Code
BOP160053

Suitability for Recreation Grade (SFRG)
Follow-up

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very High

Primary Impact:
4: Private sewage disposal systems
Other Impact:
13: Streams – discharge from private sewage disposal systems
Factors present but without significant impact:
2: Stormwater outlets
12: runoff from feral animals (e.g. forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2816190, NZMS Northing (meters) 6345920
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, wetlands, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Geothermal area. Cyanobacteria blooms during summer periods

Part B: Rural Land Use

Feral

Part C: Water Use

Fresh Area: Jetty/wharf

Size of Bathing Area: Area 12000, length 240, Width 50

Additional Influencing Factors:
Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Flat to sloping shoreline with undulating topography behind.
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma
Seasonal rainfall pattern: Heavy to moderate rainfall throughout year. This site does experience occasional extreme conditions Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 35
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:
This site is a geothermal area.
Cyanobacteria blooms are present during the summer months.
Contamination from septic tank effluent has been detected in this area. Reticulation is planned for the future.

-Consents: 50349, 61461.

Site Location
Lake Rotoiti – Gisborne Pt

Site Code
BOP160054

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impacts:
none
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
10: The incidence and density of birdlife
11: Water craft mooring or use

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2813220, NZMS Northing (meters) 6344180
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Cyanobacteria blooms during summer periods

Part B: Rural Land Use
Horses

Part C: Water Use
Fresh Area: Boat ramp, Jetty/wharf

Size of Bathing Area: Area 1750, length 350, Width 50

Additional Influencing Factors:
Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Steep surrounding land with high vegetation cover
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extremes
Rainfall triggers contamination
Microbiological water quality data has exceeded national guidelines at least once
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 107
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Groundwater surveys to detect septic tank effluent have failed to find elevated levels in the Gisborne Point area. Shellfish surveys have identified the area as a potential risk.

Site Location

Lake Rotoiti – Ruato Bay

Site Code

BOP160055

Suitability for Recreation Grade (SFRG)

Very Good

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
13: Lake - Discharge of untreated human effluent
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2811200, NZMS Northing (meters) 6343800
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, hilly
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Surface water runoff from road

Part B: Rural Land Use

Sheep

Part C: Water Use

Size of Bathing Area: Area 20000, length 400, Width 50

Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Steep shoreline and adjacent land.
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma.
Seasonal rainfall pattern: Moderate to high seasonal rainfall.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – B

Hazen Percentile Result: 154
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Lake Rotoiti – Okawa Bay

Site Code
BOP160056

Suitability for Recreation Grade (SFRG)
Follow-up

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very High

Primary Impact:
4: Private sewage disposal systems
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
8: Run-off from low intensity agriculture
12: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2803010, NZMS Northing (meters) 6344830
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Cyanobacteria bloom during summer period

Part B: Rural Land Use
Sheep, beef, feral, horses

Part C: Water Use
Fresh Area: Boat Ramp, jetty/wharf, permanent boat moorings

Size of Bathing Area: Area 10800, length 270, Width 40

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline reaching very steep adjacent land.
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C
Hazen Percentile Result: 269
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Shellfish surveys indicate some potential risk. However, the community is now reticulated.

Storage tank at site is used for pumping sewage from boats.

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotoiti – Te Akau Point

Site Code
BOP160057

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
10: The incidence and density of bird life
11: Water craft mooring or use
12: Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2803720, NZMS Northing (meters) 6346770
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Failed Septic Tank Systems across from Point

Part B: Rural Land Use
Sheep, beef, feral, horses

Part C: Water Use
Fresh Area: Jetty/wharf

Size of Bathing Area: Area 12500, length 250, Width 50

Additional Influencing Factors:
Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: High sloping shoreline with steep adjacent land
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions
Rainfall triggers contamination
Microbiological water quality data has never exceeded national guidelines
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 226
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotoiti – Otaramarae

Site Code
BOP160058

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
12: Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2806040, NZMS Northing (meters) 6348760
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, hilly
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Cyanobacteria bloom during summer period

Part B: Rural Land Use

Sheep, beef, feral, horses

Part C: Water Use

Fresh Area: Jetty/wharf

Size of Bathing Area: Area 7442, length 122, Width 61

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline reaching undulating topography.
Total annual rainfall (millimetres): 1927.
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme condition.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 84
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotorua – Mourea

Site Code
BOP160065

Suitability for Recreation Grade (SFRG)
Very Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very High

Primary Impact:

0: No significant source indicated.

Other Impact:

None

Factors present but without significant impact:

2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
10: The incidence and density of birdlife
11: Water craft mooring or use

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2801790, NZMS Northing (meters) 6345260
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Pasture, urban, river/stream irrigation, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use

Beef, horses

Part C: Water Use

Size of Bathing Area: Area 10800, length 270, Width 50

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping steep shoreline reaching flat to undulating topography.
Total annual rainfall (millimetres): 1927.
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 83

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

This community has recently been reticulated.

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotorua – Hamurana

Site Code
BOP160070

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:

10: The incidence and density of birdlife

Other Impact:

None

Factors present but without significant impact:

2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
12: Runoff from feral animals (e.g., forest/bush)
14: Lake - Stormwater outlets with sewage contamination
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2795900, NZMS Northing (meters) 6356870
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, river/stream irrigation, hilly, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank
Potentially Polluting Activities: Geothermal activity and discharge

Part B: Rural Land Use:

Sheep, beef, feral, poultry, horses

Part C: Water Use

Size of Bathing Area: Area 28500, length 570, Width 50

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline.
Total annual rainfall (millimetres): 1927.
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 490

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Shellfish surveys indicate some potential risk.

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotorua – Ngongotaha

Site Code
BOP160069

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:

18: Lake - Runoff from feral animals (e.g., forest/bush)

Other Impacts:
2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
14: Lake - Stormwater outlets with sewage contamination

Factors present but without significant impact:
12: Runoff from feral animals (e.g., forest/bush)
18: Lake - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2792390, NZMS Northing (meters) 6342320
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Urban, flat
Urban Land Uses: Residential
Industry: Panel beaters
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment
Potentially Polluting Activities: Stockyards when in use cause soakage of contaminants. Cyanobacteria blooms over summer period.

Part C: Water Use

Fresh Area: Jetty/wharf

Size of Bathing Area: Area 9000, length 180, Width 50

Additional Influencing Factors:

Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline.
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 872

Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Close vicinity sale yards used to be in soakage.
Stormwater exits at this site.
Shellfish surveys indicate some potential risk.

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location
Lake Rotorua – Ohinemutu

Site Code
BOP160068

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:

3: Urban stormwater

Other Impact:

10: The incidence and density of bird life

Factors present but without significant impact:

None

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2795240, NZMS Northing (meters) 6336330
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Urban, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment
Potentially Polluting Activities: Geothermal discharge directly into site area, water fowl present

Part C: Water Use

Fresh Area: Jetty/wharf

Size of Bathing Area: Area 45500, length 350, Width 130

Additional Influencing Factors:

Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions
Rainfall triggers contamination
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 343

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

This site can experience high levels of Cyanobacteria within the summer period commonly resulting in health warnings put in place.

Site Location

Lake Rotorua – Holdens Bay

Site Code

BOP160066

Suitability for Recreation Grade (SFRG)

Fair

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Moderate

Primary Impact:

3: Urban stormwater

Other Impact:

17: Lake - Runoff from low intensity agriculture

Factors present but without significant impact:

6: Tertiary treatment facilities
8: Run-off from low intensity agriculture

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2799360, NZMS Northing (meters) 6337540
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Urban, river/steam irrigation, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment
Potentially Polluting Activities: Cyanobacteria (blue-green algae) blooms. Spray weed control.

Part C: Water Use

Size of Bathing Area: Area 13800, length 230, Width 60

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Flat
Total annual rainfall (millimetres): 1883.
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – C

Hazen Percentile Result: 270

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Lake Tikitapu - Beach

Site Code
BOP160063

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:

0: No significant source indicated

Other Impact:

None

Factors present but without significant impact:

2: Stormwater outlets
4: Private sewage disposal systems
12: Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2801870, NZMS Northing (meters) 6329630
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, hilly
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use:

Feral

Part C: Water Use

Size of Bathing Area: Area 41300, length 70, Width 70

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Steep Sloping shoreline with steep hill topography adjacent.
Total annual rainfall (millimetres): 1529.
Location of rainfall monitoring station: Lake Okareka.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
Risk from septic disposal at camp and public toilets
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 39

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location
Lake Okareka – east end of dwellings

Site Code
BOP160061

Suitability for Recreation Grade (SFRG)
Fair

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
10: The incidence and density of bird life
12: Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2803410, NZMS Northing (meters) 6331870
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use

Sheep, beef, feral

Part C: Water Use

Fresh Area: Jetty/wharf

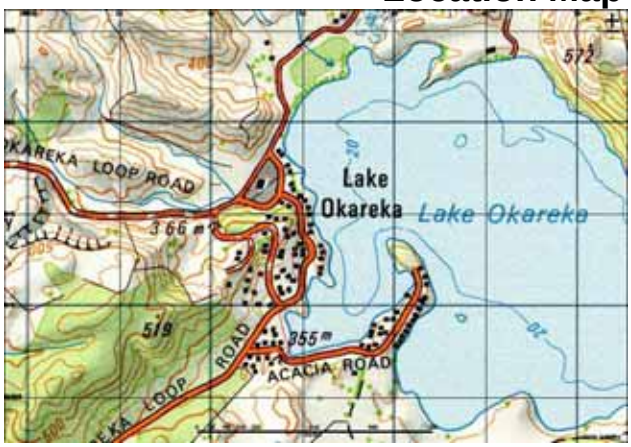
Size of Bathing Area: Area 6400, length 160, Width 40

Additional Influencing Factors:
Site subject to seasonal/holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion
Gullies: Sandy shoreline with steep adjacent land
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high annual rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – C

Hazen Percentile Result: 380
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map



Comments:

Monitoring for septic effluent in streams and drains has found some nutrient contamination. Further monitoring is planned.

Site Location
Lake Okareka – Jetty

Site Code
BOP160062

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
10: The incidence and density of bird life
11: Water craft mooring or use
12: Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: Lake
NZMS Easting (meters) 2803480, NZMS Northing (meters) 6330780
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Urban Land Use: Residential
Disposal of Human or Animal Wastes: Septic tank

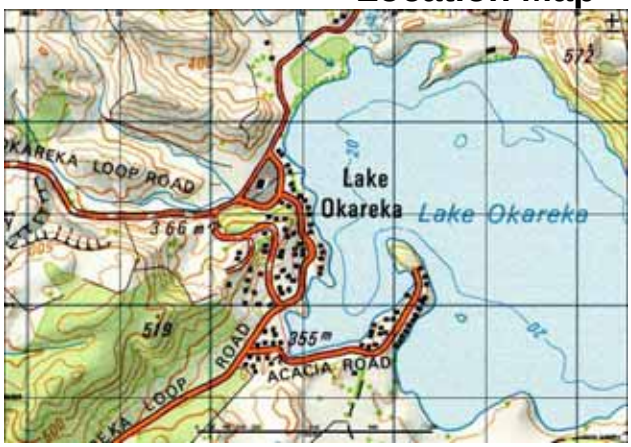
Part B: Rural Land Use
Sheep, beef, feral

Part C: Water Use
Fresh Area: Jetty/wharf

Size of Bathing Area: Area 21000, length 300, Width 70

Additional Influencing Factors:
Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sandy shoreline with steep topography adjacent to the site.
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high seasonal rainfall patterns with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no additional information implying risk

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 105
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Monitoring for septic effluent in streams and drains has found some contamination, although not microbiological. Further monitoring is planned.

Site Location
Lake Tarawera – Rangiuru Bay

Site Code
BOP160072

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:

0: No significant source indicated.

Other Impact:

None

Factors present but without significant impact:

2: Stormwater outlets
4: Private sewage disposal systems
8: Run-off from low intensity agriculture
10: The incidence and density of bird life
11: Water craft mooring or use
12: Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2807490, NZMS Northing (meters) 6328800
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use:

Sheep, beef, feral, horses

Part C: Water Use

Size of Bathing Area: Area 22750, length 350, Width 65

Additional Influencing Factors:

Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South West
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline to steep
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions
Rainfall triggers contamination
Microbiological water quality data has never exceeded national guidelines
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 84

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:
Groundwater monitoring for septic effluent has resulted in some contamination detected.

Site Location
Lake Tarawera – Tarapatiki Point

Site Code
BOP160064

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:

0: No significant source indicated

Other Impact:

None

Factors present but without significant impact:

2: Stormwater outlets
4: Private sewage disposal systems
10: The incidence and density of bird life
11: Water craft mooring or use

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2807270, NZMS Northing (meters) 6329550
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic Tank

Part B: Rural Land Use:

Sheep, beef

Part C: Water Use

Size of Bathing Area: Area 4680, length 130, Width 36

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline.
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 41

Data Set Extent:

Interim Data Set: <5 years or <100 samples used

Location Map

Comments:
Groundwater monitoring for septic effluent has resulted in some contamination detected. Further monitoring is planned.

Site Location

Lake Rerewhakaaitu – Pump Station Boat Ramp

Site Code

BOP160077

Suitability for Recreation Grade (SFRG)

Good

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Moderate

Primary Impact:
16: Lake - High intensity agriculture or feral animals/birds
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
7: Intensive agricultural use
13: Stream - Discharge of untreated human effluent
14: Stream - Stormwater outlets with potential for sewage contamination
18: Stream - Runoff from feral animals (e.g., forest/bush)

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2816030, NZMS Northing (meters) 6315510
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Forest/bush, pasture, wetlands, flat
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Past years illegal dumping has occurred

Part B: Rural Land Use

Sheep, dairy, beef, horses

Part C: Water Use

Fresh Area: Boat ramp

Size of Bathing Area: Area 37200, length 620, Width 60

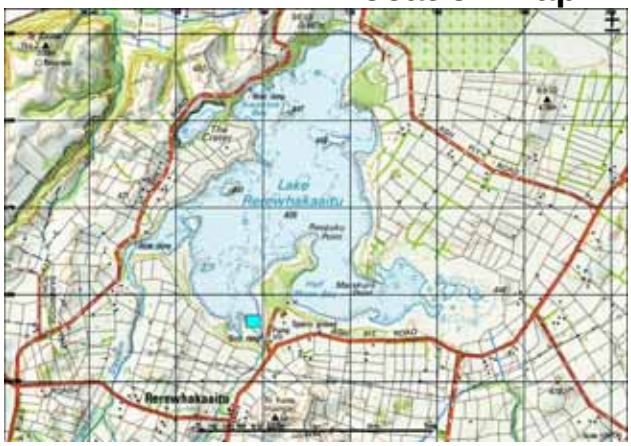
Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Sloping shoreline to flat adjacent land topography.
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high annual rainfall with occasional extreme events.
Rainfall triggers contamination.
Microbiological water quality data has never exceeded national guidelines.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – A

Hazen Percentile Result: 76
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map



Comments:

Not enough microbiological data yet to make a full assessment.

Site Location
Lake Okaro

Site Code
BOP160073

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – High

Primary Impact:
7: Intensive agricultural use
Other Impact:
16: Lake - High intensity agriculture or feral animals/birds
Factors present but without significant impact:
4: Private sewage disposal systems
Factors present but without significant impact:
None

Site Identification

Type of Site: Lake
NZMS Easting (meters) 2806760, NZMS Northing (meters) 6317360
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Pasture, hilly
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Cyanobacteria blooms are commonly found here during summer months.

Part B: Rural Land Use

Sheep, dairy, beef, horses

Part C: Water Use

Size of Bathing Area: Area 855, length 57, Width 15

Additional Influencing Factors:

Site subject to seasonal/holiday loading.
Direction of prevailing onshore winds: South West.
Shoreline configuration/geomorphology/erosion gullies: Undulating topography adjacent to site.
Total annual rainfall: 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme patterns.
Rainfall triggers contamination.
Microbiological water quality data exceeded national guidelines at least once.
There is no additional information implying risk.
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A

Hazen Percentile Result: 122
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Rotorua Rivers

Site Location
Waitangi Springs

Site Code
BOP160120

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal system
7: Intensive agricultural use
8: Run-off from low intensity agriculture
12: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2821470, Northing (meters) 6345490
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, wetlands, hilly, flat
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: High geothermal activity

Part B: Rural Land Use
Sheep, dairy, beef, feral, horses

Part C: Water Use
Size of Bathing Area: Area 832, Length 52, Width 16

Additional Influencing Factors:
Site subject to seasonal/ holiday loading
Direction of prevailing onshore winds: South
Shoreline configuration/geomorphology/erosion gullies: Undulating topography adjacent to site
Total annual rainfall (millimetres): 2131
Location of rainfall monitoring station: Lake Rotoma
Seasonal rainfall pattern: Moderate to high rainfall during winter periods. Occasional extreme conditions
Rainfall triggers contamination
Microbiological water quality data has never exceeded national guidelines
There is no additional information implying risk
There is a stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 168
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:
The wetland above springs provides treatment from rural run-off. Dairy herds are grazed on adjacent land during winter months. This site contains high geothermal activity.

Site Location
Ohau Channel SH33 Bridge

Site Code
BOP160119

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal system
8: Run-off from low intensity agriculture
11: Water craft mooring or use

Site Identification
Type of Site: River/Lake
NZMS Easting (meters) 2802560, Northing (meters) 6345590
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Pasture, urban, wetlands, flat
Urban Land Use: Residential
Disposal of Human or Animal Wastes: Septic tank (one more year before included on city treatment system)
Potentially Polluting Activities: Cyanobacteria blooms during summer period

Part B: Rural Land Use
Sheep, beef, horses

Part C: Water Use
Size of Bathing Area: Area 6150, Length 205, Width 30

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Steep banks either side of channel with flat topography adjacent to site
Total annual rainfall (millimetres): 1927.
Location of rainfall monitoring station: Okere Falls Rd.
Seasonal rainfall pattern: Moderate rainfall with dry periods throughout summer. Within ranges higher rainfall throughout the year is evident.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 84
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:

Site Location
Kaituna River – Trout Pool Road

Site Code
BOP160112

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal system
8: Run-off from low intensity agriculture
12: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2803060, Northing (meters) 6349670
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, hilly
Disposal of Human or Animal Wastes: Septic tank
Potentially Polluting Activities: Some Cyanobacteria bloom evident during summer periods

Part B: Rural Land Use
Sheep, beef, feral, horses

Part C: Water Use
Size of Bathing Area: Area 2109, Length 57, Width 37

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South
Shoreline configuration/geomorphology/erosion gullies: Undulating to steep topography. High
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high rainfall during winter months.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – A
Hazen Percentile Result: 55
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:

Site Location
Awahou Stream – Glouster Road

Site Code
BOP160118

Suitability for Recreation Grade (SFRG)
Very Good

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Very Low

Primary Impact:
0: No significant source indicated.
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal system
8: Run-off from low intensity agriculture
12: Run-off from feral animals (e.g. forest/bush)

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2792730, Northing (meters) 6345330
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

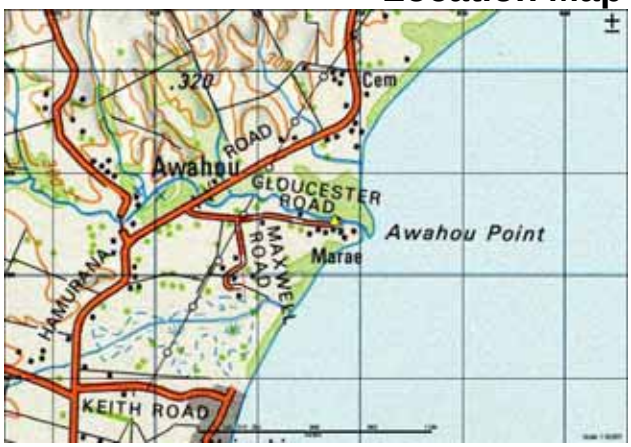
Part A: Land Use
Land Cover and Geography: Forest/bush, pasture, urban, hilly
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Septic tank

Part B: Rural Land Use
Sheep, beef, horses

Part C: Water Use
Size of Bathing Area: Area 500, Length 50, Width 10

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Gentle sloping banks.
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – B
Hazen Percentile Result: 158
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
Information was gained through Public Health relating to this site. In November 2003, an outbreak of cryptosporidiosis occurred in five pre-school children who had actively/passively bathed in the Awahou Stream following heavy rain in the catchment. Although the variation in incubation periods would tend to suggest that four were secondary cases following close contact with the first, it was implicated that the river was the infection origin.

Site Location
Waiteti Stream - Ngongotaha

Site Code
BOP160115

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
None
Factors present but without significant impact:
3: Urban stormwater
7: Intensive agricultural use

Site Identification

Type of Site: River/stream
NZMS Easting (meters) 2791600, Northing (meters) 6342800
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Paul Scholes

Part A: Land Use

Land Cover and Geography: Pasture, urban, hilly, flat
Urban Land Uses: Residential
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment

Part B: Rural Land Use

Sheep, beef, horses

Part C: Water Use

Size of Bathing Area: Area 1680, Length 120, Width 14

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Flat to undulating adjacent topography.
Total annual rainfall (millimetres): 1927.
Location of rainfall monitoring station: Okere Falls Road.
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D

Hazen Percentile Result: 1160
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Site Location

Ngongotaha Stream Railway Bridge

Site Code

BOP160114

Suitability for Recreation Grade (SFRG)

Poor

Sanitary Inspection Category (SIC)

SIC Assessment Grade – Moderate

Primary Impact:
8: Run-off from low intensity agriculture
Other Impact:
None
Factors present but without significant impact:
2: Stormwater outlets
3: urban stormwater
4: Private sewage disposal system

Site Identification

Type of Site: River/stream
NZMS Easting (meters) 2792050, Northing (meters) 6341810
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: P Scholes

Part A: Land Use

Land Cover and Geography: Pasture, urban, flat
Urban LAND Use: Residential
Disposal of Human or Animal Wastes: Reticulated

Part B: Rural Land Use

Sheep, beef, horses

Part C: Water Use

Size of Bathing Area: Area 780, Length 78, Width 10

Additional Influencing Factors:

Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Undulating topography adjacent to site.
Total annual rainfall (millimetres): 1927
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high seasonal rainfall with occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data does not exceed national guidelines.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)

MAC Grade – D

Hazen Percentile Result: 2490
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map

Comments:

Recent catchment survey shows contamination present near the headwaters, and increases after a wild life park.

Site Location
Utuhina Stream – Lake Road

Site Code
BOP160117

Suitability for Recreation Grade (SFRG)
SFRC Assessment Grade – Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
3: Urban stormwater
Other Impact:
None
Factors present but without significant impact:
8: Run-off from low intensity agriculture

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2794210, Northing (meters) 6336380
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Urban, hilly
Urban Land Use: Residential
Industry: Industrial Parks
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment
Potentially Polluting Activities: Rotorua City Industrial Area

Part B: Rural Land Use
Sheep, beef, horses

Part C: Water Use
Size of Bathing Area: Area 1300, Length 130, Width 10

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Undulating geothermal topography.
Total annual rainfall (millimetres): 1883
Location of rainfall monitoring station: Okere Falls Rd
Seasonal rainfall pattern: Moderate to high seasonal rainfall with some occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is no additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D
Hazen Percentile Result: 1413
Data Set Extent:
Interim Data Set: <5 years or <100 samples used

Location Map


Comments:
This site contains geothermal discharge from Kuirau Park and shallow soakage from geothermal wastewater.
The site is situated on the edge of the Reinjection field.
Drains direct road stormwater into site area.
Industrial Stormwater is also discharged to this area.

Site Location
Puarenga Stream

Site Code
BOP160113

Suitability for Recreation Grade (SFRG)
Poor

Sanitary Inspection Category (SIC)
SIC Assessment Grade – Moderate

Primary Impact:
3: Urban stormwater
Other Impact:
None
Factors present but without significant impact:
4: Private sewage disposal systems
6: Tertiary treatment facilities
7: Intensive agricultural use
8: Run-off from low intensity agriculture
12: Runoff from feral animals (e.g., forest/bush)

Site Identification
Type of Site: River/stream
NZMS Easting (meters) 2795410, Northing (meters) 6332770
Name of Local Authority: Rotorua District Council
Name of Person Completing Checklist: Jessica Wiseman

Part A: Land Use
Land Cover and Geography: Forest/bush, urban, hilly
Urban Land Use: Residential
Disposal of Human or Animal Wastes: Reticulated – tertiary treatment and Red stag have their own treatment plant on site
Potentially Polluting Activities: Geothermal activity

Part B: Rural Land Use
Sheep, dairy, beef

Part C: Water Use
Size of Bathing Area: Area 900, Length 90, Width 10

Additional Influencing Factors:
Site subject to seasonal/ holiday loading.
Direction of prevailing onshore winds: South.
Shoreline configuration/geomorphology/erosion gullies: Partly open canopy cover.
Total annual rainfall (millimetres): 1529
Location of rainfall monitoring station: Lake Okareka
Seasonal rainfall pattern: Moderate to high seasonal rainfall with some occasional extreme conditions.
Rainfall triggers contamination.
Microbiological water quality data has exceeded national guidelines at least once.
There is additional information implying risk.
There is no stream (including a piped stream) or drain or wetland discharging into or upstream to the recreational area.

Microbiological Assessment Category (MAC)
MAC Grade – D
Hazen Percentile Result: 1680
Data Set Extent:
Interim Data Set: <5 years of <100 samples used

Location Map


Comments:
Geothermal inputs and private industry treatment plant lie upstream of monitoring site.
Adjacent forest is used for irrigation of tertiary treated effluent.