

# 2016/2017 Regulatory Compliance Report





# **2016/2017 Regulatory Compliance Report**

November 2017

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NEW ZEALAND

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## EXECUTIVE SUMMARY

The Bay of Plenty Regional Council (BOPRC) uses a variety of regulatory and non-regulatory tools to manage the environmental impacts of activities throughout the region, including rules and resource consents implemented under the Resource Management Act 1991. Compliance with the requirements of these rules and resource consents provides an important measure of how we, as a regulatory authority, engage with the community to manage environmental impacts.

The report provides an overview of findings from compliance monitoring, complaints and enforcement activities completed by the Regulatory Compliance team from 1 July 2016 to 30 June 2017. Compliance results are presented both per individual activity and geographically by Water Management Area (WMA) across all teams. Details of each team's sub-activities and a comparison with the results presented in the 2015/2016 compliance report are also presented where appropriate.

The report also discusses work undertaken by the Regulatory Compliance team to proactively improve environmental management and the projects we will be undertaking in the future to address emerging issues and challenges. Implications for tangata whenua are discussed within the introduction of the report, which reflects that Council is actively seeking to collaborate and improve the way we do business in this space. The report concludes with a discussion surrounding the current challenges, implications and opportunities facing the compliance team.

## COMPLIANCE RESULTS

Throughout the 2016/2017 period, the Regulatory Compliance team undertook 1,868 compliance inspections on 1,303 individual resource consents. This is 19.4% less than the number of inspections recorded in the 2015/2016 report. The decrease in compliance inspections numbers was largely contributed to by the significant increase (15.2%) in complaints received over the year.

Seventy six percent of all inspections were assessed as complying with their resource consent, 14.4% were considered to be low risk, 7.3% moderate risk, and the remaining 1.9% as significantly non-compliant. The results show that there has been a substantial decrease in the amount of significant non-compliance between the 2015/2016 and 2016/2017 periods.

Similar to the previous reporting period, the largest numbers of compliance inspections were carried out in the Tauranga Harbour WMA. The greatest increase in inspection numbers was found within the Rotorua Lakes WMA, with 123 more inspections being completed than the previous reporting period.

In addition to compliance inspections, BOPRC received, logged and reviewed a total of 1,842 performance monitoring returns on 815 individual consents. The results of these reviews were also generally positive, with 89.3% of returns being assessed as complying with consent conditions.

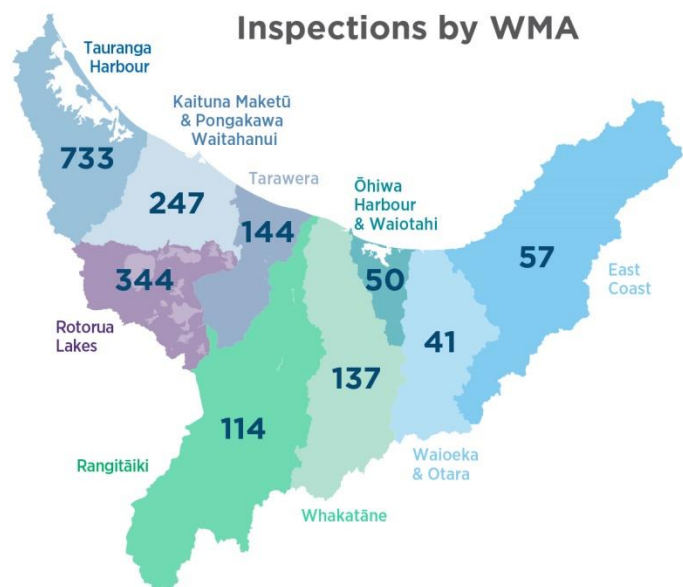
The compliance sections within this report also discuss emerging trends, key insights, and interesting case studies.



2016/2017 MONITORING PERIOD

# COMPLIANCE ACROSS THE REGION

**1868**  
inspections



## Compliance Activities



**Earthworks**  
(28%)



**Dairy Discharges**  
(22%)



**Structures**  
(18%)



**Industrial Discharges**  
(8%)



**Water Take/Use**  
(5%)



**Other Activities**  
(19%)

## COMPLAINTS, INVESTIGATIONS, ENFORCEMENT AND REPORTING

Throughout the 2016/2017 reporting period, we received 2,719 complaints, which is the most complaints we have ever received for any twelve month period, and marks a 15.2% increase on the record set in the 2015/2016 reporting period. The average number of complaints received daily equated to seven, which was up from an average of six in the 2015/2016 period. The majority of complaints remain linked to air quality (60%), particularly dust (11.7%), smoke (23.1%) and odour (21.4%).

Complaints occur throughout the year, with only seven days during the 12 month period where no complaints were received. The busiest month for 2016/2017 was March with 308 complaints being logged through the Pollution Hotline. This is the highest number of complaints ever received by BOPRC in a single month. The busiest single day over this reporting period was 18 January 2017, with 27 complaints being received.

Complaints were spread throughout the region, with the Tauranga City district receiving the vast majority of complaints (44.3%).

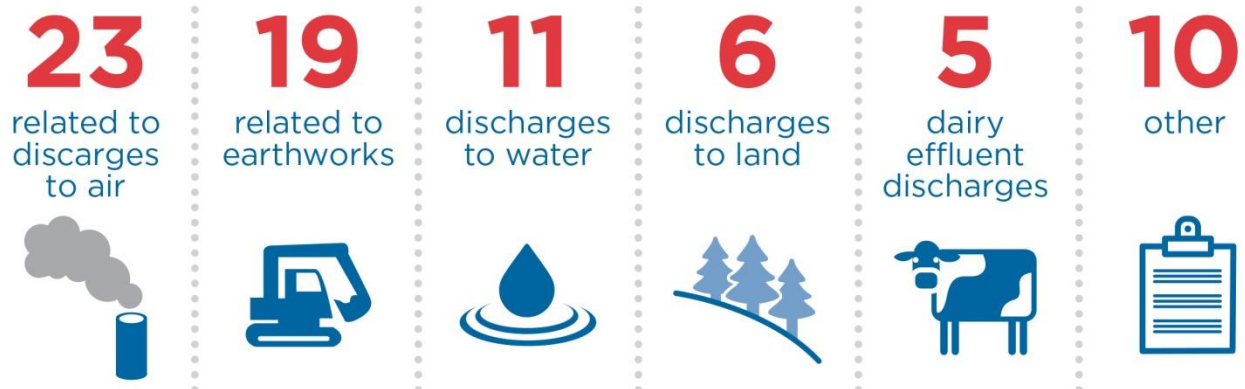
A total of nine urgent complaints were received and all of these were responded to within 12 hours from the time of the initial complaint. Of the 2,710 non-urgent complaints received, 2,701 (99.7%) were responded to within three working days of receiving the initial complaint.

Throughout the 2016/2017 year, 74 abatement notices were issued. Similar to complaints, the majority of abatements related to discharges to air (31%), with the remainder relating to discharges to land (8%) and water (15%), earthworks (26%) and dairy effluent discharges (7%). Thirty one abatement notices were in relation to breaches of resource consent. The busiest month for serving abatement notices was November 2016 (11), with the quietest month being August 2016 (2).

Twenty-two infringement notices were issued throughout this year. Seven of these infringement notices were linked to the breach of an abatement notice, while eight were consent related. The majority of infringements (45%) related to discharges to land, with the remainder relating to air (27%) and water discharges (9%), earthworks (5%) and other land use (14%). Similar to complaints, the busiest month for serving infringement notices was March 2017 (5).

Seven serious breaches of the RMA during the 2016/2017 period were dealt with by warnings, abatement notices, infringement notices or a combination of all three outcomes. There are nine current and ongoing investigations from the 2016/2017 period.

Six significant prosecutions were sentenced relating to incidents from the 2015/2016 reporting year which resulted in fines totalling \$176,925. Five of these cases related to discharges into freshwater, while the other related to an unauthorised freshwater abstraction. Eight prosecutions and one enforcement order are currently before the Court.





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## INTRODUCTION

Bay of Plenty Regional Council (BOPRC) works to support the sustainable development of the region through managing the effects of people's use of natural and physical resources. We also have a broader responsibility for the economic, social and cultural well-being of the Bay of Plenty community.

BOPRC uses a variety of regulatory and non-regulatory tools to manage the environmental impacts of activities throughout the region, including rules and resource consents made under the Resource Management Act 1991 (RMA). Compliance with the requirements of these rules and resource consents provides an important measure of how we, as a regulatory authority, engage with the community to manage environmental impacts.

This is the third year that BOPRC has presented a comprehensive regulatory compliance report which provides an overview of findings from compliance monitoring and complaints and enforcement activities undertaken from 1 July 2016 to 30 June 2017, and discusses projects undertaken by the Regulatory Compliance Team to improve environmental management across the region.

This report has been structured in line with the three regulatory compliance teams:

- 1 **Primary Industry, Rural and Water:** dairy effluent discharges; domestic and municipal wastewater discharges; earthworks and quarries; forestry; geothermal abstractions; coastal, river and lake structures; and water take and use.
- 2 **Industry, Urban, Contaminated Land and Waste:** contaminated sites; industrial discharges to air, land and water; Port of Tauranga; stormwater; and waste management.
- 3 **Complaints, Investigations, Enforcement and Reporting:** complaints response; investigations; and enforcement.

A snapshot of compliance, complaints, investigations and enforcement activities across these teams is also provided, as well as more detailed discussion of some of the more prominent and significant activities, challenges and case studies throughout the region.

This report also introduces the importance of understanding why and how we monitor compliance, who monitors compliance, and the principles which underpin investigations and enforcement. A tangata whenua implications statement is discussed within the introduction of the report, which provides a platform for further growth in this space moving forward.

## WHY MONITOR COMPLIANCE?

Achieving compliance is often about meeting a minimum acceptable standard of resource use. Our goal is to promote behavioural change and achieve voluntary, 365 day compliance, and ultimately take ownership of resource management issues and incorporate best practice which goes beyond the minimum requirements.

Monitoring consents, compliance and complaints:

- Raises awareness with consent holders and land users about the level of environmental management that is required.
- Allows early detection of activities that might be adversely affecting the environment, and allows action to be taken to remedy and mitigate those effects.
- Ensures any non-compliance with consent conditions is identified and appropriate action taken.

- Gives assurance to communities that the resource management framework they were consulted on is being upheld.
- Contributes to assessing long-term trends over time.
- Helps councils make informed decisions.
- Provides useful information about where policies and plans are not meeting the desired and anticipated environmental outcomes. Feedback may lead to changes to policies and plans.

## HOW WE MONITOR COMPLIANCE

Compliance monitoring involves carrying out inspections to assess some or all active conditions within resource consents.

The frequency of site inspections for each activity is set out in the Resource Management Act (RMA) Section 36 Charges Policy, which outlines the costs associated with maintaining resource consent. This frequency takes into account the type of activity and its environmental risk profile. Other factors are also taken into account for particular consents, such as the consent holder's compliance history.

In addition to inspections, the team also undertakes desktop performance monitoring, which is the audit of incoming returns from consent holders, such as reports, records and monitoring data.

| Compliance Grade           | Explanation   |
|----------------------------|---|
| Complying                  | Complying with all assessed consent conditions.   |
| Low Risk Non-Compliance    | Compliance with most consent conditions. Any non-compliance is of a low risk to the environment.  |
| Moderate Non-Compliance    | Non-compliant with some consent conditions, where the environmental consequence of non-compliance is deemed to be minor to moderate risk, and/or has the potential to result in more serious environmental effects. |
| Significant Non-Compliance | Failure to comply with a number of consent conditions and/or the environmental consequences of non-compliance was deemed to be significant.   |

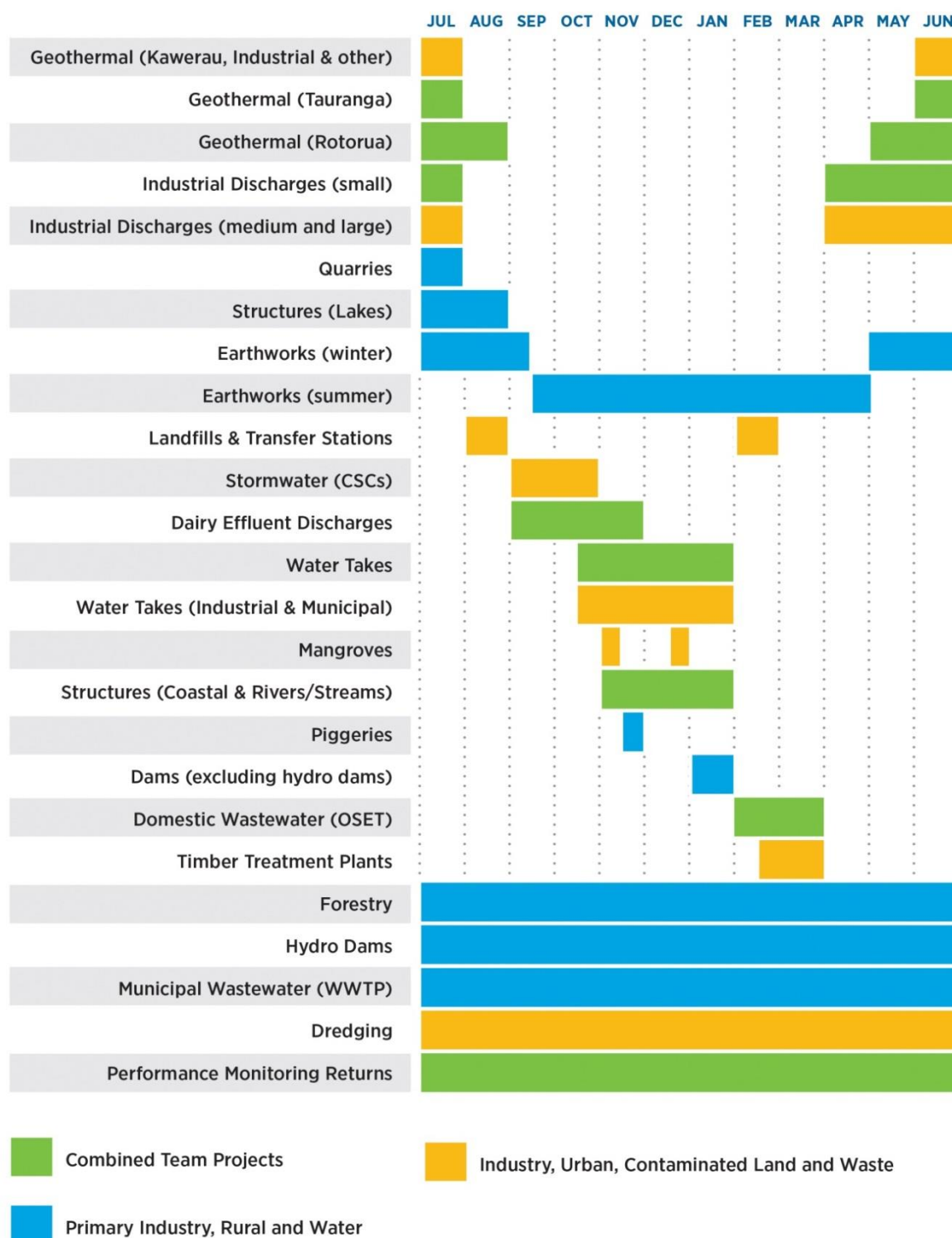
**Table 1: Explanation of Compliance Grades.**

Both physical compliance inspections and performance monitoring results are assigned an overall compliance grade, which takes into account the risks associated with any non-compliances. These compliance grades are defined in Table 1 above.

## COMPLIANCE PROGRAMME MANAGEMENT

To better prioritise our compliance workstreams, create focus, and enable our compliance projects to work well, the compliance team developed an annual work schedule. At present, this way of working is still being trialled and the timeframes illustrated in the chart below are flexible.

### Regulatory Compliance Team Work Schedule



## STRATEGIC COMPLIANCE FRAMEWORK

In March 2016, the Regional Sector Compliance and Enforcement Special Interest Group (CESIG) finalised and endorsed the Regional Sector Strategic Compliance Framework (SCF). BOPRC was involved in the development of the SCF, and our compliance programme is designed to be consistent with the national framework.

The SCF is intended to assist Regional and Unitary Authorities to develop a consistent approach to:

- Monitoring compliance (i.e. what is the state of compliance).
- Encourage compliance (i.e. achieving the highest levels of compliance).
- Deal with non-compliance (i.e. use of enforcement tools to bring about behaviour change).
- Reviewing each of these components (i.e. to gauge the effectiveness of the SCF).

The SCF encourages Regional and Unitary Authorities to implement a risk based approach to designing and implementing a compliance framework, and promotes the use of the 4E's Model to encourage compliance.

The "4 E's" are:

**Engage** – *consult with regulated parties, stakeholders and community on matters that may affect them. This will require maintaining relationships and communication until final outcomes have been reached. This will facilitate greater understanding of challenges and constraints, engender support and identify opportunities to work with others.*

**Educate** – *alert regulated parties to what is required to be compliant and where the onus lies to be compliant (i.e. with them). Education should also be utilised to inform community and stakeholders about what regulations are in place around them, so that they will better understand what is compliant and what is not.*

**Enable** – *provide opportunities for regulated parties to be exposed to industry best practice and regulatory requirements. Link regulated parties with appropriate industry advisors. Promote examples of best practice.*

**Enforce** – *when breaches of regulation, or non-compliance, are identified then an array of enforcement tools are available to bring about positive behaviour change. Enforcement outcomes should be proportional to individual circumstances of the breach and culpability of the party.*

The SCF also encourages Regional and Unitary Authorities to undertake robust data collection and reporting on its compliance and monitoring activities, to understand compliance and non-compliance within the region, and to continue to improve and tailor the compliance programme accordingly.

## WHO MONITORS COMPLIANCE?

Compliance monitoring is largely driven through the BOPRC Regulatory Compliance Team, which is made up of Regulatory Compliance Officers (RCOs) and Regulatory Project Officers (RPOs) based out of Whakatāne, Rotorua and Tauranga.

RCOs generally carry out the day to day compliance tasks, including scheduled inspections, complaint response, investigations and enforcement. RPOs focus on and lead a wide range of projects which are linked to wider compliance issues and challenges.



## ENFORCEMENT

When considering which enforcement option to pursue, it is important that a fair, robust and consistent decision-making process is followed. Decisions can only be made using the facts, not assumptions or guesses. The following criteria are considered in each case:

- 1 Actual adverse effects (effects that have occurred).
- 2 Likely adverse effects (potential effects).
- 3 Value or sensitivity of area affected.
- 4 Toxicity of discharge.
- 5 Deliberate or accidental action.
- 6 Degree of due care taken/foreseeability of incident.
- 7 Effort to remedy/mitigate effects.
- 8 Effectiveness of remedy/mitigation.
- 9 Profit or benefit gained by alleged offender.
- 10 Repeat non-compliance or previous enforcement action for the same or similar situation.
- 11 Failure to act on prior instructions.
- 12 Degree of deterrence required in relation to the party (specific deterrence and not a wider effect).
- 13 Degree of general deterrence required.

Depending on the severity of non-compliance, staff will often work with consent holders and other offending parties to bring them back into compliance without using enforcement. However, when this approach is unsuccessful or inappropriate, BOPRC can use a variety of enforcement tools.

Directive options:

- Compliance audit sheets and letters of direction, which detail actions that may be required to achieve compliance.
- Serving an abatement notice which formally requires works or actions to be undertaken or ceased.
- Enforcement orders can be applied for through the Courts. These are more common during prosecution sentencing, as enforcement orders alone can be very time consuming and costly.

Punitive options:

- Formal warning letters can be used to formally advise offenders of their non-compliance.
- Issuing infringement notices. These are set fines ranging from \$300 up to \$1,000. They can be issued to individuals or organisations that have breached the RMA.
- Taking a prosecution. The maximum penalty can be up to two years imprisonment and a fine of up to \$300,000 for individuals, or a fine of up to \$600,000 for any other entity.

It may also be appropriate to use a mixture of directive and punitive options, as these options are not exclusive of each other and can be very effective. The Solicitor General's guidelines must be considered within the decision making process for prosecutions.

## IMPLICATIONS FOR TANGATA WHENUA

The Māori population in the Bay of Plenty equates to about 28% of the total population. BOPRC has clear statutory obligations to Māori under the Local Government Act 2002 (LGA), and the Resource Management Act 1991 (RMA). In particular, Part 2, Sections 6 and 7 of the RMA recognises and provides for participation in decision-making, having regard to kaitiakitanga, consultation and fostering development.

The purpose of this implications statement is to illustrate that Council is actively seeking to collaborate and improve the way we do business in this space. It also serves as a focal point of discussion to facilitate ongoing strengthening of relationships between the Regulatory Compliance Team and tangata whenua.

The core aim of compliance is to ensure consent conditions, plans, policies, rules and the Act are adhered to. The role of tangata whenua and kaitiaki is to protect the natural and physical environment, waahi tapu and other sites of cultural significance to ensure community and cultural sustainability is achieved. Therefore, the role of compliance directly aligns with tangata whenua and kaitiaki values. It is therefore in Council's interest to partner with tangata whenua to ensure the best environmental outcome is achieved.

Key highlights within the 2016/2017 reporting period:

- Early notification aims to ensure all effects (i.e. cultural, environmental, socio-economic, spiritual) from incidents, particularly discharges to water, are dealt with early and provides tangata whenua and kaitiaki an opportunity to inform their own decision-making. Their observations and involvement can then further inform relevant cultural assessments which feed into consent applications.
- Appointment of a Pou Ngaio<sup>1</sup> to help further strengthen knowledge, understanding and collaboration. This Māori Policy initiative gives further opportunity to improve and foster relationships.

The compliance team aims to improve and build on our communication and engagement with tangata whenua to further strengthen the above highlights.

The Bay of Plenty is a growing part of New Zealand, with massive development occurring throughout the region. Managing environmental outcomes can become more difficult under high growth situations and thus kaitiaki play a significant role in this space. Together we can better achieve those outcomes.

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<sup>1</sup> Pou Ngaio: A technical/cultural specialist.

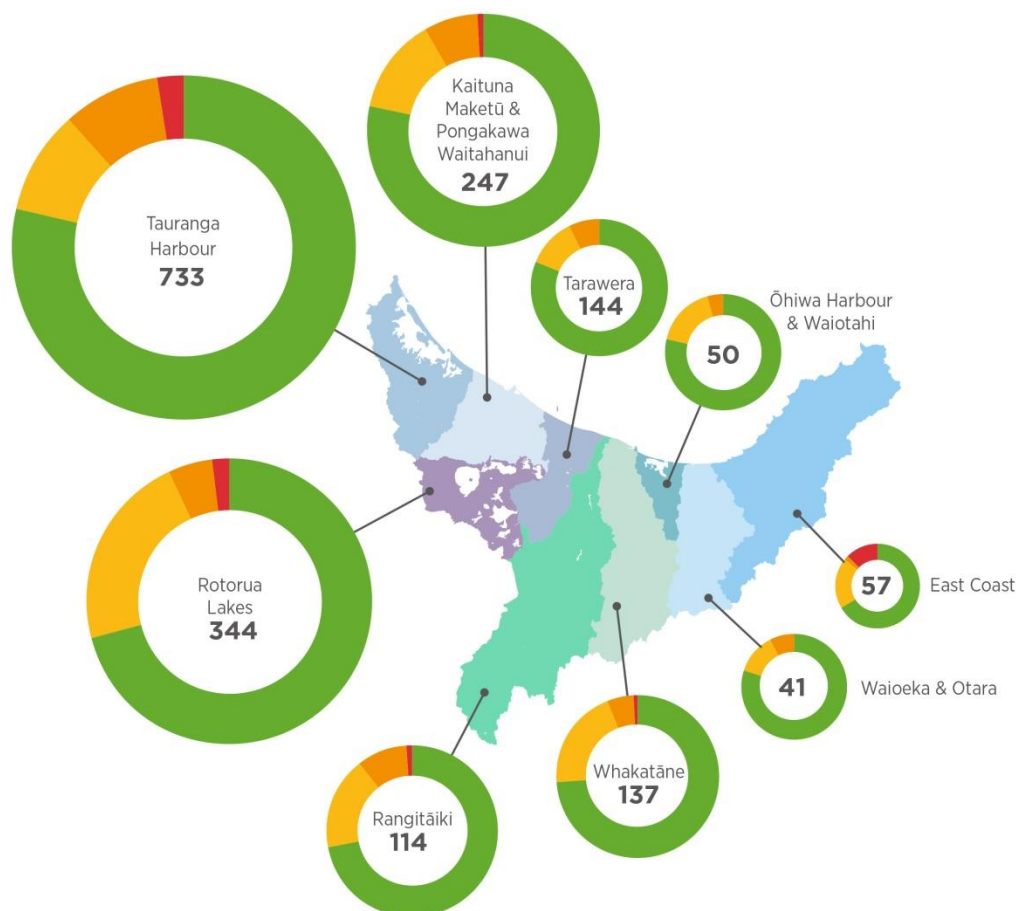
## REGULATORY COMPLIANCE TEAM INSPECTION RESULTS

Throughout the 2016/2017 period, the Regulatory Compliance Team undertook 1,868 compliance inspections on 1,303 individual resource consents. This is 19.4% less than the number of assessments recorded in the 2015/2016 report, where 1,421 individual consents were monitored. The lower number of compliance inspections was largely due to the significant increase (15.2%) in complaints received over the year.

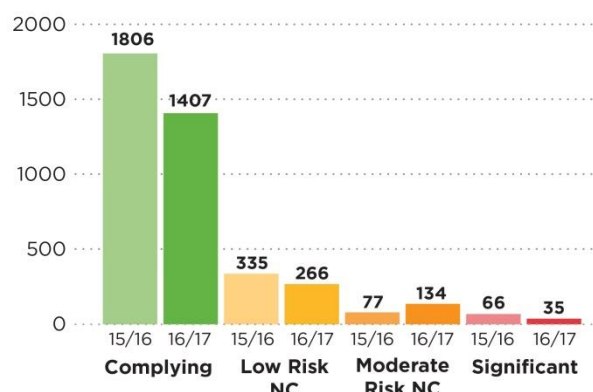
The results of the compliance inspections were generally positive, with 76.4% of all inspections being assessed as complying with their resource consent. The overall results are largely similar to last year, although significant non-compliance decreased from 3% to 1.9%.



### Inspections and Compliance Grades by WMA



The single largest change seen in compliance in any of the WMAs between the last two monitoring periods was the Whakatāne WMA with a decrease of 14.5% in the number of complying inspections. This was followed closely by the Rangitāiki WMA with a drop of 12.9%. The level of compliance within the Tauranga Harbour, Kaituna and Maketū, Tarawera, Ōhiwa Harbour and East Coast WMAs remained very similar. However, the East Coast WMA had 12.3% of all inspections result in significant non-compliance. This was solely linked to dairy and forestry activities within the catchment.



Similar to the previous reporting period, the largest number of compliance inspections were carried out in the Tauranga Harbour WMA. The greatest increase in inspection numbers was found within the Rotorua Lakes WMA with 124 more inspections being completed than the previous reporting period.

The most significant drop in inspections also occurred in the Tauranga Harbour WMA, where there was a drop of 278 inspections from the 2015/2016 reporting period (refer to Table 2 below). The drop in number of inspections was due to the significant increase in the frequency of complaints during this time.

| WMA               | % of inspections Complying |           |       | Total number of inspections carried out |           |         |
|-------------------|----------------------------|-----------|-------|---|-----------|---------|
|                   | 2015/2016                  | 2016/2017 | Δ%    | 2015/2016                               | 2016/2017 | Δ total |
| Tauranga Harbour  | 82.3                       | 78.7      | -4.6  | 1011                                    | 733       | -278    |
| Kaituna Maketu    | 76.2                       | 78.5      | 2.9   | 366                                     | 247       | -119    |
| Rotorua Lakes     | 60.9                       | 71.1      | 14.3  | 220                                     | 344       | 124     |
| Tarawera          | 84.2                       | 81.3      | -3.6  | 146                                     | 144       | -2      |
| Rangitāiki        | 81.5                       | 72.2      | -12.9 | 195                                     | 114       | -81     |
| Whakatāne         | 84.6                       | 73.9      | -14.5 | 175                                     | 137       | -38     |
| Ōhiwa Harbour     | 77.8                       | 78.7      | 1.1   | 54                                      | 50        | -4      |
| Waioeka & Otara   | 86.4                       | 80        | -8.0  | 59                                      | 41        | -18     |
| East Coast        | 63.6                       | 66.7      | 4.6   | 55                                      | 57        | 2       |
| <b>REGIONWIDE</b> | 79.1                       | 76.4      | -3.5  | 2284                                    | 1868      | -416    |

**Table 2: Changes in compliance figures across WMA's between 2015/2016 and 2016/2017.**

In addition to compliance inspections, BOPRC received, logged and reviewed a total of 1,842 performance monitoring returns on 815 individual consents. The results of these reviews were also generally positive, with 89.3% of returns being assessed as complying with consent conditions, 9.8% were considered to be low risk non-compliant, 0.7% moderate non-compliance and 0.2% significant non-compliant.

## PRIMARY INDUSTRY, RURAL AND WATER

Since the restructure, which went live on 1 March 2017, the team's main focus has been on reassigning resource consents and clarifying work areas. The transition has meant that most staff within the team have had their core work area responsibilities changed, which has taken some time to bed in. The new team consists of three Regulatory Project Officers (RPOs) and five Regulatory Compliance Officers (RCOs).

Since March 2017 the primary industry team have been largely focussed on working with earthworks site operators through the very wet April and May period, and ensuring sites were closed down by the start of the winter exclusion period. We used a project team approach to get through this work throughout May. The team are developing processes to ensure the highest risk sites are being monitored more frequently, taking into account site performance and the risk of any potential offsite effects caused by non-compliance.

The water team have been working on ensuring consent holders were preparing for their second round of meter verifications as required by the national regulations and that water supply records have been submitted as required. In addition, a lot of effort has been focussed on working with the dairy and horticultural industries in anticipation of Plan Change 9 implementation.

Responsibility for municipal wastewater has been transitioned into the team, with handovers occurring over the last few months. Work within the domestic onsite wastewater portfolio continues to be very time demanding and has required staff to focus on the higher priority components of that work stream. Over the next 12 months, a considerable amount of staff time will be invested into the OSET Plan review.

Throughout the 2016/2017 period 1,543 primary industry, rural and water sector compliance inspections were completed, with 72.7% percent of inspections being assessed as complying, 14.7% low risk non-compliance, 5.6% moderate risk non-compliance, and 7% significant non-compliance.

The best performing WMA for this sector was Tarawera with 89.5% of inspections assessed as complying with no significant non-compliance detected. This was followed by Rotorua Lakes in second (83.8%) and Tauranga Harbour in third (79.5%). The poorest performing WMA was the East Coast with only 64.2% of inspections complying and 13.2% of inspections resulting in significant non-compliance.

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### INSPECTIONS BY ACTIVITY GROUPING

The top five performing primary industry related activities which received compliance inspections during this period was very similar to last year, and reflects the risks associated with activities, such as earthworks and dairy discharges, or the sheer number of consents for activities, such as structures.



| <b>Primary Industry, Rural and Water Results: 2016/2017 Monitoring Period</b> | <b>Total Inspections</b> | <b>Complying</b> | <b>Low Risk NC</b> | <b>Moderate Risk NC</b> | <b>Significant NC</b> |
|---|--------------------------|------------------|--------------------|-------------------------|-----------------------|
| Bore Installations  | 50                       | 48               | 1                  | 1                       | 0                     |
| Dairy Effluent Discharges   | 346                      | 272              | 51                 | 18                      | 5                     |
| Earthworks  | 436                      | 319              | 53                 | 52                      | 12                    |
| Forestry  | 39                       | 27               | 7                  | 1                       | 4                     |
| Geothermal - Rotorua  | 75                       | 25               | 45                 | 2                       | 3                     |
| Geothermal - Warm Water   | 41                       | 35               | 4                  | 2                       | 0                     |
| Geothermal - Other  | 3                        | 0                | 3                  | 0                       | 0                     |
| Minor Dams  | 4                        | 0                | 4                  | 0                       | 0                     |
| Municipal Water Abstraction and Community Drinking Water                      | 19                       | 15               | 4                  | 0                       | 0                     |
| OSET  | 58                       | 47               | 4                  | 7                       | 0                     |
| Quarry  | 38                       | 29               | 7                  | 2                       | 0                     |
| Reclamation   | 6                        | 0                | 0                  | 0                       | 6                     |
| Sea Water Abstraction   | 2                        | 0                | 0                  | 0                       | 2                     |
| Coastal, River and Lake Structures  | 325                      | 290              | 30                 | 5                       | 0                     |
| Water Use/Take – Ag/Hort  | 75                       | 62               | 12                 | 1                       | 0                     |
| Water Use/Take – Industrial   | 7                        | 6                | 0                  | 1                       | 0                     |
| Water Use/Take – Other  | 11                       | 9                | 1                  | 1                       | 0                     |
| Wastewater Treatment Plants   | 8                        | 3                | 3                  | 2                       | 0                     |
| <b>TOTAL</b>  | <b>1543</b>              | <b>1187</b>      | <b>229</b>         | <b>95</b>               | <b>32</b>             |

**Table 3: Primary Industry, Rural and Water compliance inspections numbers and ratings.**

The following consent activities are discussed in more detail below: dairy effluent discharges; domestic and municipal wastewater discharges; earthworks and quarries; forestry; geothermal abstractions; coastal, river and lake structures; and water use and take.

## DAIRY EFFLUENT DISCHARGES: WHAKARUKE TE HAMUTI O TE KAU

Dairy farming remains one of the most significant contributors to the New Zealand economy, and a key part of the life and landscape of the Bay of Plenty region. There are about 660 consented dairy sheds across the region. Dairy Statistics New Zealand estimated the total number of cows in the Bay of Plenty to be 198,706 during the 2016/2017 period, with an average herd size of 336 across the Bay of Plenty.

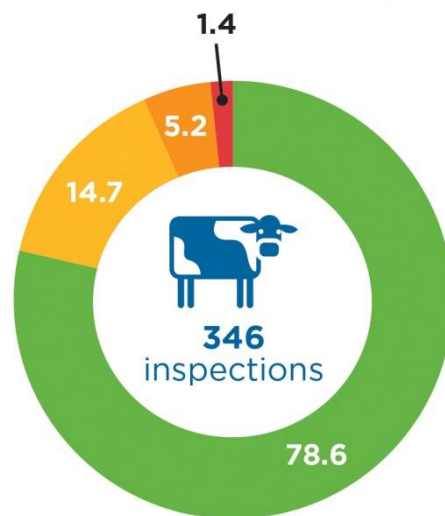
The effluent collected from dairy milking sheds, which is largely cow faeces and urine, but may also contain traces of milk and detergents, can have significant impacts on land and waterways if not properly managed. The effluent is rich in nutrients and bacteria, which can result in high loading rates on land and contamination of waterways.

Many farms use a combination of methods to manage their effluent. The most common effluent treatment is via a pond system which is then irrigated to pasture. It is a prohibited activity to discharge dairy effluent into waterways within the Bay of Plenty region, which means irrigation must be carefully managed through the wet spring and winter months to eliminate the risk of effluent runoff to waterways.

Dairy sheds are inspected at different frequencies according to the risk associated with the particular activity. Risk ratings take into account the type of treatment, water management areas, point of discharge and the compliance history of the consent holder. Those farms determined to be high risk are inspected annually, while medium and low risk farms are inspected every two or three years respectively.

Dairy farms are spread around the entire region and inspections are undertaken annually throughout spring. This is run as a coordinated project which utilises resources from across the entire Regulatory Compliance Team. To minimise the impact on farmers, the compliance work is undertaken after the calving season, and contact is made with the farmers upon entry to the farm.

Dairy Effluent Discharges



## RESULTS

There were 346 inspections undertaken in the 2016/2017 monitoring period, with compliance officers each undertaking 5-10 inspections per day. Seventy nine percent of all inspections were determined to be complying, which is equal to last year's results. Compared to last year's results the percentage of low risk and significant non-compliance dropped by 4.5% and 65% respectively, while the percentage of moderate non-compliance increased by 69%. Compliance varied considerably across the region ranging from 91.4% compliance in the Tauranga Harbour WMA to 53.8% in the East Coast WMA. Five of the nine WMAs had greater than 75% compliance.

A total of five abatement notices were issued for dairy discharge related offences during this monitoring period and one offence resulted in prosecution. No infringement notices were issued relating to dairy discharges.

The main reasons for non-compliance in the 2016/2017 period were:

- Irrigator issues, including lack of maintenance, proximity to waterways, travelling irrigators remaining static and non-calibration,

- Full and overflowing ponds,
- No record keeping or supply of records, and
- Excessive ponding in paddocks, often due to high discharge rates from irrigators.

| <b>Dairy Effluent Inspection<br/>Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 35                           | 32               | 2                      | 1                           | 0                         |
| Kaituna   | 80                           | 63               | 13                     | 4                           | 0                         |
| Rotorua Lakes   | 24                           | 20               | 2                      | 2                           | 0                         |
| Tarawera  | 43                           | 39               | 3                      | 1                           | 0                         |
| Rangitaiki  | 66                           | 49               | 11                     | 5                           | 1                         |
| Whakatāne   | 53                           | 38               | 11                     | 3                           | 1                         |
| Ōhiwa Harbour   | 17                           | 14               | 3                      | 0                           | 0                         |
| Waioeka   | 15                           | 10               | 3                      | 2                           | 0                         |
| East Coast  | 13                           | 7                | 3                      | 0                           | 3                         |
| <b>TOTAL</b>  | <b>346</b>                   | <b>272</b>       | <b>51</b>              | <b>18</b>                   | <b>5</b>                  |

**Table 4: Dairy effluent inspection results in the 2016/2017 monitoring period.**

#### CASE STUDY: DISCHARGE OF DAIRY EFFLUENT TO A WATERWAY

Two substantial investigations into non-compliance with dairy discharge consents were carried out during the 2016/2017 period. Earlier in 2017, one dairy consent holder was sentenced for the discharge of dairy effluent from an irrigator to land which flowed into a watercourse. The discharge occurred approximately 400 – 500 metres from the sea and was the result of an investigation into a complaint received through the BOPRC Pollution Hotline in mid-August 2016 (details under prosecution notes further below).

The second dairy consent holder has been charged and is awaiting Court appearance later in 2017. While undertaking dairy compliance audits during September 2016, a compliance officer observed dairy effluent being discharged from an irrigator onto land and flowing into a waterway.

These cases highlight the importance of careful effluent management, and constant monitoring and planning to ensure the discharge of dairy effluent to waterways is prevented. This is particularly important on steep or sloping land in close proximity to waterways, and during periods of wet weather.

Both properties had been identified in the past with almost similar issues which led them to be classed as high risk. This was largely due to irrigator location, pond storage capacity and the topography of the sites. These cases also highlight the importance of the dairy risk ratings and increased frequency of inspections on high risk sites.

### DOMESTIC WASTEWATER (OSET): PARA WE TARA A WHARE

In some parts of our region there is no reticulated sewerage service, which means private wastewater must be collected and treated prior to being discharged to land on-site. The NES estimates that up to 20% of each region's communities are connected to private On-Site Effluent Treatment Systems (OSETs). Therefore, the use of OSETs, such as septic tanks and aerated wastewater treatment systems, is a common requirement.

In the majority of circumstances, an OSET system can be installed without resource consent. However, resource consent may be required if:

- The system is designed to treat more than 2,000 L per day,
- The system is a new septic tank based system in the Rotorua Lakes Catchment, and/or
- The wastewater is not entirely from domestic sources (e.g. rural businesses, commercial wastewater or campgrounds).

Consented OSET systems can be classified as high or low risk, depending on the consented volume of wastewater and the location in relation to the Rotorua Lakes. OSET related consents make up 5% of all consents in the region and account for 6.5% of all annually scheduled compliance inspections.

A failed OSET system can have significant health and environmental effects. OSET systems which have been inappropriately designed and/or poorly used and maintained can lead to the contamination of soils and ground and surface water. Common signs of a poorly performing system may include ponding of partially treated wastewater on the ground surface, slow running drains or toilets, and sewage-like odours near the tank or land treatment area.

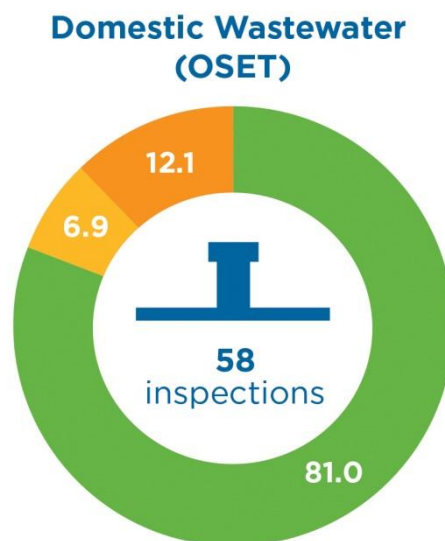
The team have also been extremely busy dealing with the Te Puna West, Ongare Point, Rotoiti, Rotomā, Rotoehu and Tarawera communities in the 2016/2017 period, as they are moving to reticulation.

### RESULTS

OSET compliance inspections made up 3.8% of the total inspections carried out by the Regulatory Compliance Team this period. Fifty-eight inspections were carried out on OSET systems around the region. Compliance has improved over the previous two years, with 81% of all inspections found to be compliant compared with 80% in 2015/2016 and 71% in the 2014/2015 period. Furthermore, of the 11 non-compliances identified, none were deemed to be significantly non-compliant.

Compliance across the region ranged from 50% complying in Waioeka and Whakatāne WMAs to 100% complying in the East Coast and Rotorua Lakes WMAs.

The main reasons for non-compliance include system overloading (e.g. central Te Puna business units) and lack of maintenance.



| <b>OSET Inspection Results:<br/>2016/2017 Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 14                           | 10               | 2                      | 2                           | 0                         |
| Kaituna   | 7                            | 5                | 0                      | 2                           | 0                         |
| Rotorua Lakes   | 18                           | 18               | 0                      | 0                           | 0                         |
| Whakatāne   | 6                            | 3                | 1                      | 2                           | 0                         |
| Waioeka   | 4                            | 2                | 1                      | 1                           | 0                         |
| East Coast  | 9                            | 9                | 0                      | 0                           | 0                         |
| <b>TOTAL</b>  | <b>58</b>                    | <b>47</b>        | <b>4</b>               | <b>7</b>                    | <b>0</b>                  |

**Table 5: OSET inspection results in the 2016/2017 monitoring period.**

## EMERGING CHALLENGE

Reticulation is often the preferred option when deciding between OSET systems and connecting to reticulation, especially when reticulation is available. OSET systems should only be considered when reticulation is not available and there are no foreseeable concerns with growth and aggregation of wastewater disposal areas. Old, undersized and poorly maintained OSET systems can lead to multiple failures. This is exacerbated by growing populations, increased and congested development, and the associated increase in load on the OSET systems. For the reasons stated above, reticulation is becoming a big ticket item which is beyond the ability of many TLA's to fund.



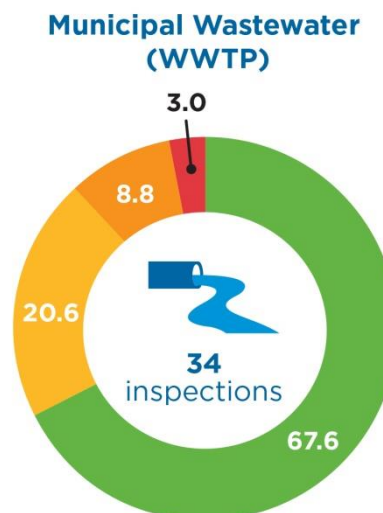
## MUNICIPAL WASTEWATER

There are currently 31 resource consents associated with the 16 municipal Wastewater Treatment Plants (WWTPs) in the Bay of Plenty region. They are all run by a district council, with the exception of the Kāingaroa Forest Village, which is operated by the local village trust.

A number of the region's WWTPs are based on oxidation pond designs, and have been modified over the years to allow for growing populations and changing attitudes towards environmental impacts. Advanced technology is used within the newer plants to produce better quality treated effluent within a smaller footprint.

Treated wastewater contains elevated levels of nutrients and bacteria, which have the potential to cause impacts to the environment and human health. Cultural impacts are also critical when considering the disposal of treated wastewater from a municipal plant.

WWTPs are scheduled to be inspected on a six-monthly basis, while smaller, low risk plants have an annual inspection frequency. Compliance is also monitored through the review of performance monitoring returns submitted by consent holders, and informally through ongoing work with consent holders.



## RESULTS

Compliance throughout the 2016/2017 reporting period was poor, with 67.6% of sites inspected receiving a complying rating, 20.6% low-risk non-complying and 8% moderate non-complying. There was also a single significant non-compliance, which was in relation to an overflow of partially treated wastewater at Katikati Wastewater Treatment Plant.

## EARTHWORKS AND QUARRIES: MAIORO ME TE PA KOHATU

### EARTHWORKS

Earthworks consents authorise a range of soil disturbing activities, and the most visible of these continues to be the development of urban subdivisions. However, they also include a number of rural activities such as re-contouring farmland to change land use, or smaller scale earthworks in areas of higher risk (e.g. steep gradient or proximity to waterways and the coastal marine area).

Many of the soils in the Bay of Plenty region are very susceptible to fluvial erosion (erosion caused by flowing water), particularly from poorly controlled runoff. Earthworks activities have the potential for significant impacts, such as erosion, disturbance of flora and fauna, discharge of sediment and dust, or disturbance or damage to historic heritage sites and sites of cultural significance.



Sediment discharges can occur without appropriate site management and associated erosion and sediment controls. Mobilised sediment can destroy spawning grounds, smother wildlife, prevent animals from feeding as they cannot see their prey, and silt up waterways which can increase the susceptibility of flooding. To minimise the risks, consented earthworks sites are generally only allowed to be active from spring to autumn (15 September to 1 May), as this is when ground and weather conditions are most favourable. An exception to this is sites located in sand dune country, where damp conditions are preferable to control dust.

In addition to restricting the time of works, consent conditions generally require certain controls to be in place, such as sediment retention ponds, bunds and silt fences, stabilisation works, clean and dirty water diversions, chemical treatment and dust control measures.

Earthworks consents are monitored at various stages while the works are active. This generally involves a pre-construction meeting, fortnightly monitoring of large active sites, monthly monitoring of small scale active sites, and monitoring of permitted activity and non-active sites on an as required basis. In most cases, a further site meeting is held upon completion of works.

## RESULTS

Earthworks remain one of the most common consented activities in the Bay of Plenty following closely behind dairy discharges, structures, and water take and use consents. This is reflected in the number of inspections for earthworks consents (436), which is more than any other activity during this reporting period and equates to almost one quarter of all completed inspections this period.

Levels of compliance have unfortunately veered towards a downward trend over the past two reporting periods, with 86% of sites complying in the 2014/2015 period, 79% in 2015/2016 and 73.2% in this most recent period. The numbers of significant non-compliances identified also doubled over the past two years. Of those which were non-compliant, the majority were found to be of low or moderate risk, with 12 significant non-compliances identified throughout the year.

During the 2016/2017 season, 120 consented earthworks sites were active. As indicated by the inspections, more than three quarters of all active sites were located in the Tauranga Harbour and Kaituna WMAs. Earthworks also equated for 43% of all inspections completed within the Tauranga Harbour Catchment. The poorest performing WMA was Rotorua Lakes, with 54% of inspections complying, 4% low risk non-compliant, 37.5% moderate risk non-compliant and 4.2% significant non-compliant.

| <b>Earthworks Inspection<br/>Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 308                          | 223              | 37                     | 38                          | 10                        |
| Kaituna   | 58                           | 44               | 9                      | 4                           | 1                         |
| Rotorua Lakes   | 24                           | 13               | 1                      | 9                           | 1                         |
| Tarawera  | 7                            | 7                | 0                      | 0                           | 0                         |
| Rangitāiki  | 8                            | 5                | 2                      | 1                           | 0                         |
| Whakatāne   | 15                           | 13               | 2                      | 0                           | 0                         |
| Ōhiwa Harbour   | 7                            | 6                | 1                      | 0                           | 0                         |
| Waioeka   | 3                            | 3                | 0                      | 0                           | 0                         |
| East Coast  | 6                            | 5                | 1                      | 0                           | 0                         |
| <b>TOTAL</b>  | <b>436</b>                   | <b>319</b>       | <b>53</b>              | <b>52</b>                   | <b>12</b>                 |

**Table 6: Earthworks inspection results in the 2016/2017 monitoring period.**

The top five issues identified with earthworks sites were:

- 1 Erosion and sediment controls not installed correctly, as per consent conditions and erosion and sediment control guidelines.
- 2 Site not stabilised within the timeframe specified in the consent.
- 3 Bulk earthworks being undertaken within the winter exclusion period.
- 4 Dust leaving the boundary of the site.
- 5 Sediment-laden stormwater leaving the site.

As a result of the inspections, 19 abatement notices and one infringement notice were issued, with no prosecutions undertaken. There is one ongoing investigation regarding an earthworks site in the Western Bay of Plenty.

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## QUARRIES

Quarries are utilised to provide a consistent supply of aggregates and minerals that are essential for the increasing development occurring within the Bay of Plenty region. High-grade andesite is mainly sourced from quarries near Katikati and Te Puke, whereas low-grade aggregate material, such as rhyolite, can be found in abundance throughout most of the region. Although, demand for supply is placed heavily on the higher grade sites, quarrying activities are utilised across the region with all of our WMAs being affected in some way or another by this activity.

Similar to earthworks and forestry, quarrying operations have the potential for a number of significant environmental impacts, particularly through erosion, dust, and the discharge of sediment into waterways. However, unlike earthworks, quarries often operate permanently and throughout the year. As a result, erosion and sediment controls must be installed and maintained to a high standard.

Chemical treatment is often used to treat sediment-laden stormwater run-off given the nature of soils encountered during quarrying activities.



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## RESULTS

Thirty-eight inspections were carried out on quarries throughout the 2016/2017 reporting period. Compliance ratings have improved since the previous year, with 76% of inspections being assessed as compliant. The 2015/2016 monitoring period saw 71% of sites complying with all consent conditions. There have been no significant non-compliances noted since the 2014/2015 period where 3% of inspections resulted in significant non-compliance. Four of the seven WMAs, where compliance inspections were completed during this monitoring round, had greater than 85% compliance. The average compliance rating across the region was brought down by the Kaituna WMA, where only 54% of inspections were compliant.

| Quarry Inspection Results:<br>2016/2017 Monitoring Period | Total<br>Inspections | Complying | Low Risk<br>NC | Moderate<br>Risk NC | Significant<br>NC |
|---|----------------------|-----------|----------------|---------------------|-------------------|
| Tauranga Harbour  | 7                    | 6         | 1              | 0                   | 0                 |
| Kaituna   | 11                   | 6         | 3              | 2                   | 0                 |
| Rotorua Lakes   | 1                    | 0         | 1              | 0                   | 0                 |
| Tarawera  | 1                    | 1         | 0              | 0                   | 0                 |
| Rangitāiki  | 4                    | 3         | 1              | 0                   | 0                 |
| Whakatāne   | 10                   | 9         | 1              | 0                   | 0                 |
| Ōhiwa Harbour   | 4                    | 4         | 0              | 0                   | 0                 |
| <b>TOTAL</b>  | <b>38</b>            | <b>29</b> | <b>7</b>       | <b>2</b>            | <b>0</b>          |

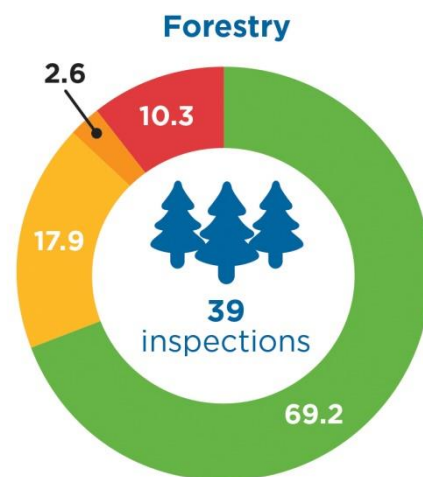
**Table 7: Quarrying inspection results in the 2016/2017 monitoring period.**

## FORESTRY: ONO RAKAU

Forty percent of New Zealand's commercial forestry harvest is produced within the Bay of Plenty region, which consequently plays a significant role in the Bay of Plenty environment, with approximately 2,461 square kilometres (20.1%) of land being production forest. This is particularly visible in the Rangitāiki, Rotorua Lakes and Tarawera WMA's, where large tracts of the Kaingaroa forestry plantations account for a significant portion of the land use cover.

The majority of forestry activities can be undertaken as a permitted activity. However, resource consent is required when harvesting is on slopes greater than 35 degrees and/or when trees are within five meters of a waterway. As such, recorded inspections of forestry operations are largely associated with higher risk operations. Resource consents may also be required for associated works, such as earthworks and culverts associated with roading.

It is essential that harvesting operations are well managed to minimise erosion and downstream effects. Poor tracking and slash management have the potential to permit large amounts of sediment-laden water and other debris to enter waterways.



## RESULTS

Numbers of complying forestry sites remained fairly static during the 2016/2017 period and there were only four instances of significant non-compliance compared with 15 during the previous year. Similar to the 2015/2016 period, one instance of significant non-compliance resulted in prosecution (see case study, below).

Forestry compliance was undertaken in all WMAs across the region with the most inspections being carried out in the East Coast WMA (14), followed by Ōhiwa Harbour (6) and Rangitāiki (6). Compliance ratings varied significantly across the region with one in two inspections resulting in non-compliance within the East Coast and Kaituna WMAs and every site visit within the Rotorua Lakes, Tarawera, Tauranga Harbour, Waioeka, and Whakatāne WMAs resulting in compliance. Two-thirds of inspections within the Ōhiwa Harbour and Rangitāiki WMAs were compliant.

The main reasons for non-compliance in the 2016/2017 monitoring period were:

- Logging debris and slash on skid sites,
- Hauling of logs up or down the bed of a stream or dry wash ephemeral watercourses,
- Logging debris and slash in the gully floors and ephemeral flow paths,
- Deposition of logging slash in and over the beds of streams, and
- Discharge of sediment into waterways.

Note: Bay of Plenty Regional Council does not monitor or regulate the health and safety aspects of forestry operations as this is managed by Worksafe NZ in cooperation with relevant industry bodies.

| <b>Forestry Inspection Results:<br/>2016/2017 Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 1                            | 0                | 0                      | 0                           | 0                         |
| Kaituna   | 2                            | 1                | 1                      | 0                           | 0                         |
| Rotorua Lakes   | 2                            | 2                | 0                      | 0                           | 0                         |
| Tarawera  | 2                            | 2                | 0                      | 0                           | 0                         |
| Rangitāiki  | 6                            | 4                | 1                      | 1                           | 0                         |
| Whakatāne   | 2                            | 2                | 0                      | 0                           | 0                         |
| Ōhiwa Harbour   | 6                            | 4                | 2                      | 0                           | 0                         |
| Waioeka   | 4                            | 4                | 0                      | 0                           | 0                         |
| East Coast  | 14                           | 7                | 3                      | 0                           | 4                         |
| <b>TOTAL</b>  | <b>39</b>                    | <b>27</b>        | <b>7</b>               | <b>1</b>                    | <b>4</b>                  |

**Table 8: Forestry inspection results in the 2016/2017 monitoring period.**

## CASE STUDY: DISCHARGE OF FORESTRY SLASH AND SEDIMENT

In mid to late 2016, routine compliance visits were conducted and two East Coast forests were found to be in significant breach of their resource consents. An investigation was conducted which revealed poor environmental practices, in both earthworks and harvesting operations, which left the sites prone to erosion and associated sediment discharges.

Both sites hold resource consent which includes conditions requiring the consent holder not to haul through ephemerals and streams and to stabilise fill material to avoid sediment discharges into streams.

As a result of the investigations, a decision has been made to take enforcement action against one company with the possibility of the other company also facing similar action (see prosecution details further below).



### ROTORUA GEOHERMAL FIELD

The Rotorua Geothermal Field covers about 12 km<sup>2</sup> beneath Rotorua City and the southern margin of Lake Rotorua.

The Rotorua geothermal system is a hot pressurised geothermal system and has many surface features, such as geysers, hot springs and mud pools in areas such as Whakarewarewa Valley, Ōhinemutu, Kuirau, Arikikapakapa and Ngāpuna. The resource has significant social, cultural and economic value, which is recognised both nationally and internationally.

There are approximately 150 consented geothermal takes in Rotorua City and the majority of these consents are for production wells (abstraction and use of the fluid), with some others for down hole heat exchangers where only the heat is abstracted from the resource.

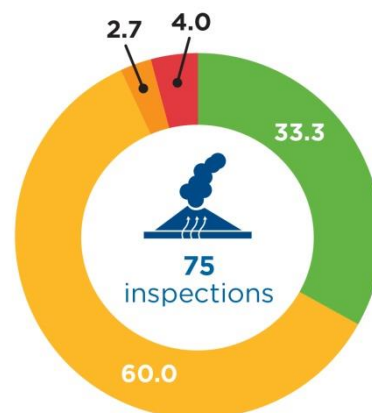
Two thirds of the consented takes re-inject fluid back into the geothermal system through reinjection wells. Fluid used for bathing is not re-injected and is discharged to sewer.

Monitoring indicates that the geothermal reservoir is relatively stable at present, and water levels increase quickly following bore closure. This has meant that hydrothermal eruptions are less frequent and that many surface features have recovered, especially from 1992-1999. However, recovery is not equal across the system. Some are similar to what they were 100 years ago, while others are not fully recovered, and we do not know if they ever will.

Consent inspections generally focus on the flow and temperature readings, and require that wells are maintained to a standard that they can be:

- Tested and monitored (i.e. flow testing to show how much of the resource is being used, temperatures of the fluid being used), and
- Be controlled at all times to prevent uncontrolled discharges.

Rotorua Geothermal Field



### RESULTS

In cooperation with the Rotorua Lakes Council (RLC), 75 compliance audits were completed during the 2016/2017 period, compared with 39 from the previous year. The increase in numbers of inspections also saw the increase in levels of low risk non-compliance. Levels of low risk non-compliance increased from 38.5% in the 2015/2016 period to 60% this year. A real positive for compliance within the Rotorua geothermal system was the drop in significant non-compliance between the last two monitoring periods. Significant non-compliance dropped from 18% in 2015/2016 to 4% this year. The main reasons for non-compliance in the 2016/2017 monitoring period were maintenance issues, such as labelling (minor) and unsafe wellheads (major). Consent holders with outstanding maintenance issues have been given timeframes to complete works. Failure to comply will be addressed jointly with RLC staff.

| Rotorua Geothermal<br>Inspection Results: 2016/2017<br>Monitoring Period | Total<br>Inspections | Complying | Low Risk<br>NC | Moderate<br>Risk NC | Significant<br>NC |
|--|----------------------|-----------|----------------|---------------------|-------------------|
| Rotorua Lakes  | 75                   | 25        | 45             | 2                   | 3                 |

**Table 9: Rotorua geothermal inspection results in the 2016/2017 monitoring period.**

## FLOW TESTING TRIALS

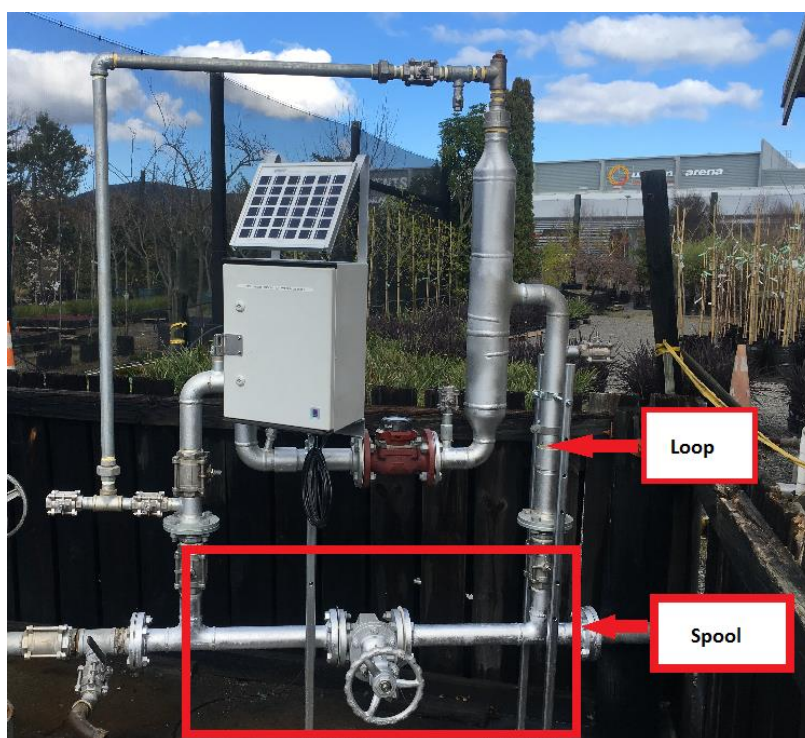
BOPRC has developed a pilot flow testing programme to determine the current actual (rather than consented) use of geothermal fluid and energy from the Rotorua Geothermal Field. We use this data in modelling to improve our understanding about how the resource is responding to use and how much can be allocated without damaging surface features.

The flow testing program has evolved through a range of field trials, seeking to overcome issues that many Rotorua wells exhibit, such as slug two phase flows, scaling, condition of wellhead and urban setting, difficult access, enclosed areas, and the ability to dispose of excess test fluid safely.

Developing a method that is relatively accurate, affordable, and robust and that is easily transferable across multiple wells with different characteristics has been critical.

The trials undertaken have led to the development and refinement of a method that includes fitting a separator loop with inline meter near the reinjection bore

(see Figure 1). Trials have also assessed the effectiveness of various meters, data retrieval methods and the duration of flow testing to optimise data retrieval. If the trials are successful, this method will be rolled out across all consented takes in Rotorua.



**Figure 1: The Flow Loop system developed for flow testing on geothermal bores.**

Risks from poorly maintained wells or wells not built to standard include:

- Inability to control wells if they 'fail' or blow out,
- Discharge of poisonous gases (H<sub>2</sub>S, CO<sub>2</sub>),
- Inability to flow test wells (due to valve design, inability for downhole testing), and
- Inability to test casing (i.e. some casing is too small for standard downhole testing tools).

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## OUTSTANDING ISSUES

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### CASING INTEGRITY

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To date the project has focussed on wellheads, the highest risk part of a well. However, well casings should also be fit for purpose, as risks of geothermal casing failure in Rotorua include uncontrolled discharge of fluid affecting surface features and undermining infrastructure. Guidelines recommend that the casing of high pressure wells (about 30 in Rotorua) should be regularly checked, but a considered compliance process around casing testing has not yet been finalised. Issues include high costs of testing and casing replacements and the inability to test some casings due to original well design. Staff have been working with industry to trial a cost effective method of casing testing and are seeking external advice on risks around casing failure in Rotorua, alternative methods of testing casing and a review of the existing best practice.

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### ABANDONED WELLS

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There are over 900 abandoned wells in Rotorua, many of which have not been properly abandoned. Abandoned wells have been known to 'reactivate' on occasion. While this is primarily a RLC responsibility, BOPRC staff are working with RLC to ensure these are mapped where possible. We are also reviewing our consent SOPs to ensure that wells are properly abandoned prior to the surrender of consent – a lifecycle approach.

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### UNCONSENTED TAKES

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We expect that there may still be some unconsented takes within the Rotorua Geothermal Field (e.g. in Ohinemutu). Without records of these wells, it is difficult to address well maintenance issues, other than through education. We are currently working to identify options, as well as looking at how cultural takes are addressed regionally. There are some sensitive issues around this work and we will continue to report through the Geothermal Management Group.

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## DISCUSSION

BOPRC and RLC are currently working collaboratively on a number of initiatives to manage the use of the Rotorua Geothermal Field:

- Staff from BOPRC and RLC are exploring a three yearly compliance process that will involve a Warrant of Fitness type approach.
- To address the issue of poorly configured wellheads, BOPRC and RLC staff worked together to design and implement the certification of a standard wellhead. This template is now used in all new consents.
- An agreement has been made regarding roles and responsibilities, which includes an SOP for well maintenance, between RLC and BOPRC. The SOP clearly outline the work flows in the event of non-compliance being identified. WorkSafe NZ has also agreed to improve its processes to ensure that new wells are designed according to their guidelines.
- BOPRC and RLC held a joint workshop for well owners and industry on well maintenance. Further education material is also being progressed.

Considerable progress has been made mitigating potential risk from poorly maintained wells. Our technical experts also advise us that the most serious instances of poor maintenance have been rectified.

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## INDUSTRIAL AND OTHER GEOTHERMAL

Geothermal electricity generation utilises the Kawerau Geothermal Field, which is a high temperature geothermal system concentrated under the town of Kawerau, on the banks of the Tarawera River.

The development of the field is carefully managed to ensure its long-term sustainability. Consent conditions generally relate to collecting daily information on the abstraction and reinjection volume and rates, and discharge quality.

The major users of this resource are all located in the township of Kawerau:

- Mighty River Power Ltd.
- Ngāti Tūwharetoa Geothermal Assets.
- Geothermal Developments Ltd.
- Te Ahi o Māui Partnership Ltd (TAOM).

In addition to the monitoring required through resource consents, there a number of dedicated geothermal and groundwater monitoring wells spread throughout the field which are used to monitor pressure, temperature and any changes in fluid chemistry within the field. Additional monitoring is conducted to identify any changes in geothermal vegetation, surface features, subsidence, and micro seismicity. Given the unique and highly specialised nature of the field, an independent peer review panel of experts qualified and experienced in geothermal resource monitoring, reservoir management and related environmental effects is required to review monitoring reports and advise BOPRC of any issues which may require further information.

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## CASE STUDIES

Mercury Energy has applied on behalf of all users to change the official model used for all consented activities in the Kawerau Geothermal Field. The Peer Review Panel has reviewed the new model and is preparing a report for BOPRC on whether this model should be utilised.

TAOM's geothermal power station is scheduled for completion in late 2017 with commissioning early 2018.

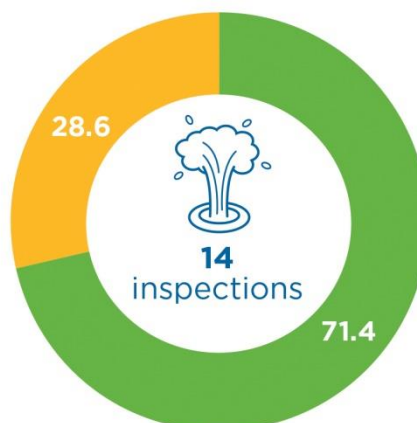
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## TAURANGA GEOTHERMAL

The Tauranga Geothermal System is a low-temperature geothermal system which runs from Bowentown to Maketū.

Warm water drawn from the system is used for a range of domestic and commercial purposes, including, but not limited to, space and water heating, thermal pools, and horticultural irrigation and frost protection.

### Industrial and Other Geothermal



### Tauranga Geothermal Field



The impacts of abstraction on the geothermal system are still being investigated. Scientists require a longer monitoring period to help them accurately model and forecast to predict how long the Tauranga Geothermal System will last and/or confirm whether or not it is cooling.

Compliance inspections generally include an assessment of the maintenance of the bore head, head works and water meter. This involves running the bore for at least 30 minutes and checking for signs of leakage, checking the bore head is sealed to prevent direct contamination of the groundwater aquifer, water meter condition and presence of a tamper proof seal. Officers also check that the resource is being used for the purpose it was originally intended for.

## RESULTS

Six additional resource consents have been issued since the previous monitoring period, while the percentage of actual use has remained unchanged. There are now currently 135 consented geothermal abstractions taking from the system, which amounts to a total daily consented abstraction of approximately 36,400 m<sup>3</sup> per day. The actual volume drawn is generally much less than that, and records and inspection findings indicate that, on average, 66% of this total allocation is being abstracted on a daily basis.

- Domestic – use 52% of consented allocation (2,909 m<sup>3</sup>/day max of 5,535 m<sup>3</sup>/day allocated).
- Commercial – use 67% of consented allocation (21,245 m<sup>3</sup>/day max of 30,843 m<sup>3</sup>/day allocated).

Forty-one consented Tauranga geothermal abstractions were visited in the 2016/2017 period where 85% of inspections were deemed to be compliant. Four low-risk non-compliances (9.8%) were identified, which were the result of deficient and/or overdue water use and temperature records. Two moderate non-compliances were identified which were the result of taking in excess of the consented daily volume. There were no significant non-compliances identified.

| <b>Tauranga Geothermal<br/>Inspection Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|--|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour and Kaituna   | 41                           | 35               | 4                      | 2                           | 0                         |

**Table 10: Tauranga geothermal inspection results in the 2016/2017 monitoring period.**



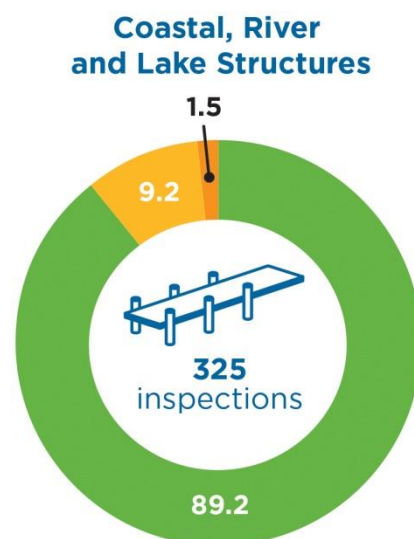
## COASTAL, LAKE AND RIVER STRUCTURES: NGĀ WHAKATURANGA TAKUTAI, AWA, ME NGĀ ROTO

Structures include any permanent buildings or structures over or within coastal areas, rivers and lakes, which can include boat sheds, jetties, boat ramps, slipways, retaining and seawalls, and bridges.

The construction and maintenance of structures requires resource consent to minimise the impact of the structure on its surrounding environment, ensure that the structure is appropriately maintained and safe, uphold visual amenity, and protect important cultural aspects of our lakes, rivers and coastal margins.

Structures are inspected at the time of installation, and on a 10-yearly basis thereafter. There are about 300 coastal, 770 river and stream and 610 lake structure consents. Given the large number of lake structures, a contractor has been engaged to undertake assessments of structural and aesthetic conditions of lake structures from a boat.

The remaining structures are inspected using a team-based project approach, where approximately 105 inspections are due to be inspected each year.



### RESULTS:

Compliance for consented structures across the region was well above average, with 89% of inspections assessed to be compliant. This was up from 85% in the previous year. There were 30 low risk non-compliances and five moderate non-compliances identified out of the 325 total inspections completed. No significant non-compliances were identified across all three structure types. There was a significant improvement in the level of compliance relating to lake structures this period, with 91% of inspections being compliant. This was up from 42% in the previous reporting period. Compliance with structure related consents was excellent across the region with the exception of East Coast (50%). Four WMAs achieved at least 90% compliance.

| Coastal, River and Lake Structure Inspection Results: 2016/2017 Monitoring Period | Total Inspections | Complying  | Low Risk NC | Moderate Risk NC | Significant NC |
|---|-------------------|------------|-------------|------------------|----------------|
| Tauranga Harbour  | 75                | 71         | 4           | 0                | 0              |
| Kaituna   | 20                | 19         | 0           | 1                | 0              |
| Rotorua Lakes   | 180               | 165        | 13          | 2                | 0              |
| Tarawera  | 6                 | 4          | 2           | 0                | 0              |
| Rangitāiki  | 3                 | 3          | 0           | 0                | 0              |
| Whakatāne   | 18                | 13         | 5           | 0                | 0              |
| Ōhiwa Harbour   | 8                 | 6          | 1           | 1                | 0              |
| Waioeka   | 5                 | 4          | 1           | 0                | 0              |
| East Coast  | 10                | 5          | 4           | 1                | 0              |
| <b>TOTAL</b>  | <b>325</b>        | <b>290</b> | <b>30</b>   | <b>5</b>         | <b>0</b>       |

**Table 11: Coastal, river and lake structure inspection results in the 2016/2017 monitoring period.**



## WATER TAKE AND USE: TANGOHIA WAI MAORI

There are many different uses for water throughout the region, including water take and use for agricultural and horticultural related purposes, domestic and community water abstractions, industrial and municipal abstractions, and other uses, such as for dust suppression on earthworks sites. For the purpose of this report only agricultural, horticultural and municipal water takes and use will be discussed in depth.

### AGRICULTURAL AND HORTICULTURAL WATER TAKE AND USE

There are currently over 1,090 consents for water abstraction in the agricultural and horticultural sectors in the Bay of Plenty. The majority of water takes, approximately 85%, are utilised for the horticultural sector; the most prominent crops are kiwifruit and avocados. The bulk of the remaining 15% of consents provide irrigation for pastoral farming, with a small number also supporting dairy farms.

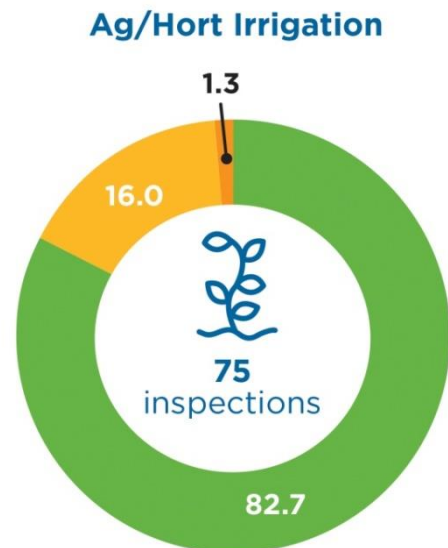
Consents are required for the abstraction and use of water that does not meet permitted activity requirements, including all takes above 15 m<sup>3</sup>/day for surface water takes, or 35 m<sup>3</sup>/day for groundwater takes.

Work also continues with the kiwifruit industry on efficient water use and research into how much water is actually required. This work involves seven orchards throughout the region being monitored for soil moisture and irrigation use and relating that to environmental conditions.

There are currently about 130 potentially unauthorised abstractions across the region and an estimated 650 abstractions which may become a controlled activity under the proposed rules of Plan Change 9. Over the 2018/2019 and 2019/2020 reporting periods BOPRC is expecting to receive 780 new consents for water abstraction, with an estimated 490 of these being water takes with abstraction rates in excess of 5 L/s.

As of November 2016, 586 out of 593 (99%) water take consents, which have an abstraction rate of greater than 5 L/s, complied with the Resource Management (Measuring and Reporting of Water Takes) Regulations 2010. Water metering is a key method which BOPRC uses to obtain data on actual use.

Where appropriate, compliance inspections generally involve taking measurements of pipe diameter and length of straight pipe upstream and downstream from water meters, conducting flow tests to assess abstraction rates and to estimate maximum daily volume, assessing maintenance of bore headworks and ensuring the bore head is securely sealed to prevent groundwater contamination, checking tamper proof seals are present on water meters and the meters are operational and readable, and looking for any sign of inefficient use, such as leaks. Temperature measurements are taken in some instances to distinguish between groundwater and geothermal abstractions. Geothermal is classed as water which is 35°C and above.



## RESULTS

Seventy-five consented agricultural and horticultural related water takes were physically inspected throughout the region in the 2016/2017 reporting period. This equates to 6.9% of the total number of agricultural and horticultural related water takes in the region and 32% of the agricultural and horticultural related compliance visits which were scheduled to be completed during this period. Compliance was high, with 82.7% of all consents assessed to be compliant. The main reasons for non-compliance during on-site inspections included minor leaks and maintenance issues.

Given the reporting limitations with performance monitoring (desk audits), these have not been reported on. The main reason for non-compliance encountered from desk audits and the review of performance monitoring returns was the result of insufficient and/or overdue returns.

Four of the nine WMAs, which received inspections during this period, had a perfect compliance record. All eight inspections within the Rotorua Lakes catchment were found to be low risk non-compliance.

One abatement notice and no infringements were issued during this reporting period in relation to water takes. One prosecution matter involving a breach of a water take consent was sentenced during this period (see prosecution section, below).

| <b>Hort/Ag Abstraction<br/>Inspection Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|--|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour   | 35                           | 35               | 0                      | 0                           | 0                         |
| Kaituna  | 9                            | 9                | 0                      | 0                           | 0                         |
| Rotorua Lakes  | 8                            | 0                | 8                      | 0                           | 0                         |
| Tarawera   | 9                            | 8                | 1                      | 0                           | 0                         |
| Rangitaiki   | 9                            | 6                | 2                      | 1                           | 0                         |
| Whakatāne  | 2                            | 1                | 1                      | 0                           | 0                         |
| Waioeka  | 2                            | 2                | 0                      | 0                           | 0                         |
| East Coast   | 1                            | 1                | 0                      | 0                           | 0                         |
| <b>TOTAL</b>   | <b>75</b>                    | <b>62</b>        | <b>12</b>              | <b>1</b>                    | <b>0</b>                  |

**Table 12: Water take and use hort/ag inspection results in the 2016/2017 monitoring period.**

## CASE STUDY 1: PLAN CHANGE 9

Work has started with planning for the implementation of Plan Change 9 (region wide water quantity plan change), with discussion with industry groups to prepare their members for the possible requirements that will come with the plan change. This has included working with the dairy industry to encourage dairy farmers to know what water they are using on farm to improve efficiency, encourage best practice and know where they may fit with potential new rules in the plan change. It should be noted that dairy farmers who are already operating outside of the permitted activity limits are already required to obtain resource consent under current rules. However, PC9 provides a pathway for existing unauthorised takes to achieve compliance. PC9 also proposes additional metering requirements for both permitted and consent related water takes.

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## CASE STUDY 2: WATER USE DATA MANAGEMENT UPDATE

As of November 2016, under the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010, all water takes of 5 L/s or more have been required to provide daily use data to BOPRC. As stated in the introduction above, these regulations have enabled us to obtain water use data from 99% of users covered by these regulations.

We have been able to use this increase in water use data to better respond to public requests for information and to inform Council decisions, such as plan changes. However, the collection and management of this data remains challenging. An issue is that although the uptake of digital logging and/or telemetry has increased, the majority of water use records are still submitted manually in hardcopy, which has a higher collective data-quality error than desired. These manual submissions also have to be manually entered into an electronic format, which poses its own problems.

BOPRC continues to work closely with industry groups to both communicate the legal requirements for water use data collection and to offer technical guidance. A review and upgrade of our electronic water use data system is planned to commence in September 2017, with the goal to increase the quantity and quality of the data received. The final upgrade and product may not be completed for another couple of years.

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## HAVELOCK NORTH DRINKING WATER INQUIRY

BOPRC is currently collaborating with all Bay of Plenty Territorial Local Authorities (TLAs) and Toi Te Ora on a risk assessment of drinking-water safety in the region. This includes a review of our policies and procedures in general, and a detailed risk analysis of each municipal point of take and its catchment.

The treatment of municipal drinking-water at the supply end is controlled by the TLA and administered by the Department of Health. BOPRC is responsible for: ensuring the effects of activities on drinking water sources are considered in decisions on resource consents and regional plans; monitoring the state of the environment; and monitoring compliance with resource consents.

Compliance inspections involve checking resource consent conditions and/or the WTR. There is a minimum five yearly inspection frequency of all types of water take consents, with some being at a three yearly frequency. The five yearly frequencies generally apply to drinking water schemes as they often fall under the WTR for meter verification and volume records, which are deemed to be good indicators of compliance.

If a drinking water source has been identified as at risk due to: poor compliance with its resource consent conditions; the potential impact of another consented or permitted activity which is not in compliance; or an environmental incident or complaint about an activity that may have a potential impact, we would carry out a follow up investigation and/or notify the resource consent holder depending on the nature of the risk.

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## EMERGING TRENDS

Consent holders are realising that water is a valuable resource, not just as part of the property 'chattels', but also as part of a key component of their business. This is growing an attitude of not simply compliance, but also looking to improve efficiency to better utilise their valuable asset as a core part of their business.

## MUNICIPAL WATER TAKE AND USE

There are currently 70 consented municipal or community water schemes in the Bay of Plenty. The majority of these schemes are run by District Councils.

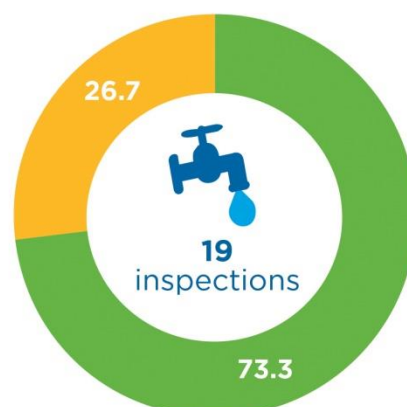
Like the horticultural and agricultural water take and use consents, consents are also required for the municipal abstraction and use of water that does not meet permitted activity requirements, including all takes above 15 m<sup>3</sup>/day for surface water takes, or 35 m<sup>3</sup>/day for groundwater takes.

These consents allow BOPRC to monitor the amount of demand being placed on the resource, and ensure water resources are not over allocated. Prior to granting consent, BOPRC ensures that minimum water levels will be maintained following the granting of consent to prevent adverse social, cultural and environmental effects.

BOPRC does not control or monitor the quality of water abstracted for municipal supply, as this is administered by the Department of Health. However, in most cases compliance inspections do involve checking bore heads are sealed to prevent groundwater contamination from the surface.

Municipal abstractions are inspected once every five years. Ongoing compliance is largely monitored by auditing the water abstraction records submitted by the consent holders.

### Municipal and Community Water Abstractions



## RESULTS

During the 2016/2017 reporting period, there were four inspections on private drinking water schemes, with all four deemed to be operating in compliance. This is on par with the previous reporting period, and continues to be a significant improvement from the 2014/2015 period two years ago where drinking water compliance was one of the poorest performing activities.

| Municipal and Community Water Inspection Results: 2016/2017 Monitoring Period | Total Inspections | Complying | Low Risk NC | Moderate Risk NC | Significant NC |
|---|-------------------|-----------|-------------|------------------|----------------|
| Tauranga Harbour  | 1                 | 1         | 0           | 0                | 0              |
| Kaituna   | 2                 | 2         | 0           | 0                | 0              |
| Rotorua Lakes   | 2                 | 0         | 2           | 0                | 0              |
| Tarawera  | 6                 | 6         | 0           | 0                | 0              |
| Rangitāiki  | 2                 | 1         | 1           | 0                | 0              |
| Whakatāne   | 5                 | 5         | 0           | 0                | 0              |
| <b>TOTAL</b>  | <b>19</b>         | <b>15</b> | <b>4</b>    | <b>0</b>         | <b>0</b>       |

**Table 13: Water take and use municipal and community inspection results in the 2016/2017 monitoring period.**

Fifteen municipal water take and use inspections were also completed. The Whakatāne, Kaituna and Tarawera WMAs had a perfect compliance record, compared with Rotorua Lakes WMA where both inspections were non-compliant.

## INDUSTRY, URBAN, CONTAMINATED LAND AND WASTE

The new structure has created a team with the ability to focus on emerging issues quickly while still retaining the ability to manage the business as usual. Similar to the primary industry, rural and water team, this team has been subdivided into industry, urban, contaminated land and waste and incorporates a mix of RCOs and RPOs.

The industry and urban function concentrates its efforts looking after the big manufacturing facilities throughout our region that, although may only be based on a single site, often hold multiple resource consents. The contaminated land and waste function look after land use, landfills, provide technical input into regional waste strategies and look after the regional waste fund.

The biggest win from the restructure has been the ability to enable the team to target consent compliance via an increase in compliance visits and the hands on management of performance returns (self-monitoring test results from samples taken of discharges to the environment from the operation), which are received in high numbers.

The team's primary focus within the Western Bay of Plenty area has been air quality within the Mount Maunganui industrial area that surrounds and includes the Port of Tauranga. This large multiuse area incorporates a multitude of industrial sites of varying size and consent complexity. Thus, the management of these consents requires a great deal of technical knowledge and ability.

In and around the Eastern Bay of Plenty our officers are kept busy with the large industrial sites in Edgecumbe and Kawerau and this focus will continue into the 2017/2018 year. The team continues to manage the compliance function for sites very much in the public spotlight with keen interest from social and traditional media outlets.

Throughout the 2016/2017 period 298 industry, urban, contaminated land and waste sector compliance inspections were completed. Seventy one percent of inspections were assessed as complying, 12.1% low risk non-compliance, 13.1% moderate risk non-compliance, and 3.7% significantly non-compliant.

The industry, urban, contaminated land and waste related activities were slightly below average in terms of compliance over the 2016/2017 reporting period. Of the Water Management Areas (WMAs) where more than 30 inspections were completed, the Kaituna and Tarawera WMAs had less than 70% of inspections complying, with Tauranga Harbour WMA performing the best with 73% of inspections being compliant.

| <b>Industry, Urban,<br/>Contaminated Land and<br/>Waste Results: 2016/2017<br/>Monitoring Period</b> | <b>Percentage<br/>of total<br/>completed<br/>inspections</b> | <b>Complying<br/>(%)</b> | <b>Low Risk<br/>NC (%)</b> | <b>Moderate<br/>Risk NC (%)</b> | <b>Significant<br/>NC (%)</b> |
|--|--|--------------------------|----------------------------|---------------------------------|-------------------------------|
| Tauranga Harbour   | 56.6   | 73.3                     | 9.3                        | 12.8                            | 4.7                           |
| Kaituna  | 12.5   | 68.4                     | 15.8                       | 13.2                            | 2.6                           |
| Tarawera   | 15.8   | 68.8                     | 14.6                       | 16.7                            | 0.0                           |
| <b>Average</b>   |  | <b>71.4</b>              | <b>12.2</b>                | <b>12.8</b>                     | <b>3.6</b>                    |

**Table 14: Industry, Urban, Contaminated Land and Waste percentage of completed inspections and compliance ratings for 2016/2017 period.**

Over half of all compliance inspections relating to industry, urban, contaminated land and waste related activities were located within the Tauranga Harbour Catchment. This is compared with 12.5% of all inspections in Kaituna and 15.8% in the Tarawera WMA.

## INSPECTIONS BY ACTIVITY GROUPING

The top five industry related activities receiving inspections throughout the 2016/2017 year were similar to last year, and reflects the team's focus and priorities and also the risks associated with activities, such as all industrial discharges. As shown in Table 15 below, the levels of compliance were varied across the industry sector related activities.

| Industry, Urban, Contaminated Land and Waste Results: 2016/2017 Monitoring Period | Total Inspection | Complying  | Low Risk NC | Moderate Risk NC | Significant NC |
|---|------------------|------------|-------------|------------------|----------------|
| Dredging  | 6                | 3          | 3           | 0                | 0              |
| Industrial Discharge - Air  | 51               | 37         | 6           | 7                | 1              |
| Industrial Discharge - Land   | 56               | 44         | 5           | 7                | 0              |
| Industrial Discharge - Water  | 47               | 34         | 3           | 9                | 1              |
| Landfill  | 26               | 18         | 4           | 2                | 2              |
| Mangrove  | 13               | 12         | 1           | 0                | 0              |
| Other - Spray   | 2                | 2          | 0           | 0                | 0              |
| Stormwater  | 77               | 54         | 12          | 5                | 6              |
| Timber Treatment Plant  | 12               | 4          | 1           | 6                | 1              |
| Transfer Station  | 8                | 4          | 1           | 3                | 0              |
| <b>TOTAL</b>  | <b>298</b>       | <b>212</b> | <b>36</b>   | <b>39</b>        | <b>11</b>      |

**Table 15: Industry, Urban, Contaminated Land and Waste compliance inspections numbers and ratings.**

The following activities are discussed in more detail below: contaminated land; industrial discharges to air, land and water; stormwater; and waste management.

### CONTAMINATED LAND: WHENUA TAAHAWAHAWA

Resource consents may be required under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (known as the NES Soil). These consents, also known as NES Soil consents, are additional to other types of consent required for particular activities (e.g. earthworks) under the Resource Management Act 1991. The compliance statistics for this activity have been covered within the earthworks section of this report given the primary activity is earthworks.

The main reasons for non-compliance related to this activity are:

- Disposing of contaminated material at unauthorised and/or inappropriate facilities, and
- Not undertaking the works in accordance with the Remediation Action Plan and/or the Contaminated Site Management Plan.

No HAIL projects took place during the 2016/2017 reporting period. However, extensive lists of learnings were taken from the HAIL project in 2016 which focussed on avocado and citrus orchards. These will be taking into consideration for any future HAIL related projects.



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## CASE STUDY #1: KOPEOPEO CANAL REMEDIATION PROJECT

The construction phase of the Kopeopeo Canal Remediation Project has started. To date, the following has been completed: construction of the perimeter bund base and internal haul road for truck access; erosion and sediment controls; topsoil removal; site access construction; and culvert installation at Containment Site 1. A number of management plans have been submitted for review and sign off with one more needing to be submitted prior to any works occurring in the canal itself. Works have been delayed due to the very wet weather.

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## CASE STUDY #2: POLYFLUOROALKYL SUBSTANCES (PFAS)

These are man-made compounds and have many uses because they are resistant to heat, water and oil. Some examples include carpets (to make them stain proof) and non-stick cookware. These chemicals also have industrial uses, such as firefighting foams. There is global concern about the chemicals as they do not degrade in the natural environment. The primary exposure pathway for humans is from drinking water. Other exposure routes can include eating food produced from impacted land and water systems like fish, poultry, meat and vegetables. There is a lot of international concern and research into the causal link with risk to human health and the environment is yet to be proven. It is a potential issue on the horizon in New Zealand. Therefore, BOPRC need to be aware of and implement procedures around PFAS if and when it becomes apparent there is a risk.

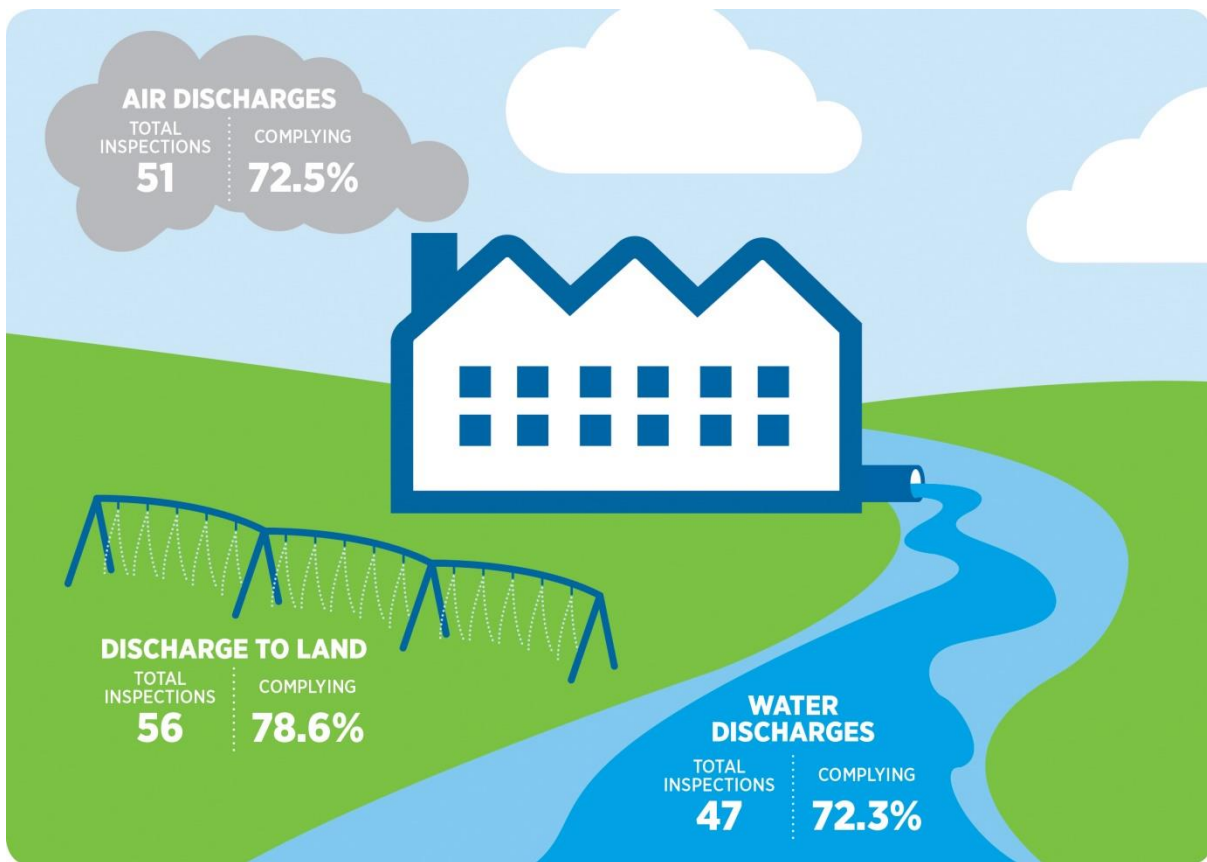
## INDUSTRIAL DISCHARGES

The discharges associated with industrial activities have the potential to cause significant impacts to both the environment and human health. Given the majority of industrial activities are undertaken within urban industrial precincts, the cumulative impacts of industrial discharges can be particularly significant.

In addition to compliance inspections from BOPRC, industrial discharge consents also tend to include a significant requirement for self-monitoring and reporting. As such, the management and review of performance monitoring relating to industrial sites are critical.

Given the significant risks associated with major industrial sites, there is a higher expectation of internal auditing and self-reporting, and BOPRC compliance officers work closely with the consent holders to monitor compliance throughout the year.

A total of 154 industrial discharge related inspections were completed over this reporting period and the next three sections break down industrial discharges into air, land and water and discuss their respective results and associated case studies.



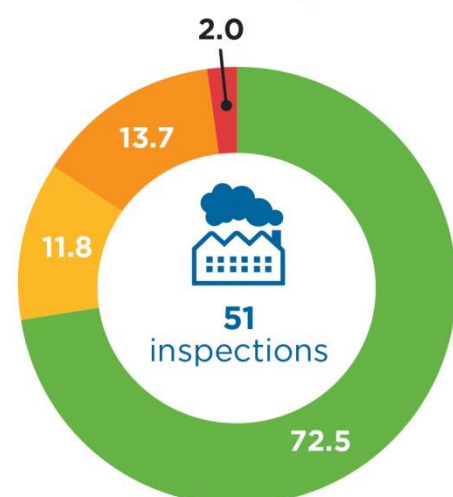
## INDUSTRIAL DISCHARGES – AIR: PARA AHUMAHĪ KI TE ANGI

Industrial air discharges are split into three categories based on the scale of the activity and the associated risk to the environment and human health. Major and medium sized industrial air discharges are inspected at least annually, whereas smaller industrial air discharges are inspected at least every three years.

The following sites are examples of sites classified as major industrial air discharges that were inspected over the 2016/2017 monitoring period:

- Ballance Agri-Nutrients Limited.
- Carter Holt Harvey Pulp and Paper Limited.
- Lawter (NZ) Limited.
- Norske Skog Tasman Limited.
- Whakatāne Mill Limited.

### Industrial Discharges to Air



Major risk sites have a wide range of chemical processes occurring on-site with a higher risk of producing off-site effects. As well as regular site visits, they require very frequent review of performance monitoring returns and technical reports throughout the year. Medium industrial air discharge sites include the likes of rendering plants, asphalt and bitumen manufacturing plants, and large boiler plants. These activities generally include a range of chemical processes on-site and have a moderate risk of producing off-site effects if not managed properly. Minor industrial air discharges generally consist of sandblasters, spray painters and small incinerator plants. These activities are considered to have minor environmental impacts and are often also audited by other external agencies, such as WorkSafe NZ and Territorial Authorities.

## RESULTS

Industrial discharges to the air made up 33% of the total inspections on industrial discharge related activities in 2016/2017 and 11% of the team's total inspections within the entire industrial, contaminated land and waste sectors. A total of 51 inspections on industrial discharges relating to air were completed during this monitoring period resulting in 72.5% of sites being compliant, 11.8% low risk non-compliant, 13.7% moderate non-compliant and 2% significant non-compliant.

The highest performing industrial air discharge category was the medium scale sites with 95% of inspections being compliant. The lowest performing category was major industrial air discharges with 53% of site inspections being deemed compliant, 17.6% of inspections low risk non-compliance, 23.5% moderate non-compliance and 6% significant non-compliance. The main reasons for non-compliance with major industrial air discharge sites were lack of maintenance and human error and/or negligence which resulted in mechanical or plant failures.

The reasons behind non-compliance on minor scale sites related to non-submission of records and minor maintenance concerns.

Over half of all completed compliance inspections relating to industrial discharges to the air were located within the Tauranga Harbour Catchment. This was followed by 20% of inspections in the Tarawera Catchment and 10% in Kaituna WMA.

| <b>Industrial Discharges (Air)<br/>Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 26                           | 20               | 2                      | 3                           | 1                         |
| Kaituna   | 5                            | 1                | 2                      | 2                           | 0                         |
| Rotorua Lakes   | 2                            | 2                | 0                      | 0                           | 0                         |
| Tarawera  | 10                           | 8                | 2                      | 0                           | 0                         |
| Rangitāiki  | 3                            | 2                | 0                      | 1                           | 0                         |
| Whakatāne   | 4                            | 3                | 0                      | 1                           | 0                         |
| Waioeka   | 1                            | 1                | 0                      | 0                           | 0                         |
| <b>TOTAL</b>  | <b>51</b>                    | <b>37</b>        | <b>6</b>               | <b>7</b>                    | <b>1</b>                  |

**Table 16: Industrial discharges to air inspection results in the 2016/2017 monitoring period.**

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## CASE STUDY #1: METHYL BROMIDE

Methyl bromide is an odourless, broad spectrum, fumigant used internationally and in New Zealand for quarantine use. Genera is currently the only operator fumigating on the Port of Tauranga; the Environment Court recently declined a second operator resource consent to discharge methyl bromide at the Port. Genera are continuing to develop new technology required to recapture methyl bromide from log stacks to meet the more stringent consent recapture schedule, which precedes the Environmental Protection Authority 100% recapture target by September 2020. Staff are currently working to establish a way to verify the efficiency of recapture technology developed by Genera. Methyl bromide continues to be a topic of public interest which has resulted in the formation of the Methyl Bromide Community Group (MBCG). Staff continue to respond to enquiries from the MBCG, providing information as required under the Official Information Act. Staff are carrying out monthly boundary monitoring and the frequency of compliance inspections has been increased. Work is underway to determine the optimum locations for the new fixed air quality monitoring sites, which will measure methyl bromide as part of the Council's wider air quality monitoring programme around the Port. This is expected to commence in 2018.

There are also proposed Regional Air Plan rules to better regulate methyl bromide. These draft rules are more stringent than the current approach, with the use of methyl bromide being considered as a discretionary activity, but only if recaptured, otherwise it's prohibited.

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## CASE STUDY #2: MOUNT MAUNGANUI SULPHUR DIOXIDE

Sulphur dioxide is produced mainly from the combustion of fossil fuels that contain sulphur. Sulphur dioxide is also produced from large consented industrial processes within the Mount Maunganui industrial area. Consent holders include Ballance Agri-Nutrients, Waste Management NZ Ltd and Lawter (NZ) Ltd. Recent incidents and complaints have raised the profile of this contaminant. Air quality monitoring at Whareroa Marae has detected exceedances of the National Environmental Standard for sulphur dioxide (SO<sub>2</sub>) and the National Guideline for hydrogen sulphide (H<sub>2</sub>S). Analysis of wind direction at the time of the exceedances led to discussions with Ballance Agri-Nutrients Limited, Lawter (NZ) Limited, and Waste Management Limited New Zealand which are emitters of these contaminants. Following the NES breaches Ballance undertook capital works to improve discharge standards from their site. Since June 2016 there have not been any further breaches of the NES at the monitoring station located at the Whareroa Marae.

In response to the elevated contaminant levels BOPRC is establishing a comprehensive and expanded monitoring network in the area. This involves additional monitoring equipment at two existing sites and the commissioning of four new sites within the industrial areas at Sulphur Point and Mount Maunganui. The equipment will monitor TSP (dust), PM<sub>10</sub> (coarse particulates), PM<sub>2.5</sub> (fine particulates), SO<sub>2</sub> (sulphur dioxide), H<sub>2</sub>S (hydrogen sulphide), HF (hydrogen fluoride), CH<sub>3</sub>Br (methyl bromide) and a full suite of meteorological parameters.

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## CASE STUDY #3: AMBIENT AIR QUALITY STANDARDS REGULATION 21

Currently the Mount Maunganui industrial area comes within a regional air shed category as there is no gazetted air shed in place. The monitoring station at the Whareroa Marae recorded two exceedances in 2016 of the upper threshold limit for sulphur dioxide in the Ambient Air Quality Standards (NES) and eight permitted exceedances of the lower threshold limit in the standards. Regulation 21 of the NES directs that a resource consent application for the discharge of SO<sub>2</sub> be declined if it is likely to cause the ambient standard for SO<sub>2</sub> to be breached. Current information available to the Council indicates Regulation 21 applies in the industrial area surrounding the Whareroa Marae, which has implications for all SO<sub>2</sub> emitting industries in the area when their existing air discharge consents come up for renewal. BOPRC is considering undertaking dispersion modelling in the Mount Maunganui industrial area to provide further information around current consented SO<sub>2</sub> emission rate limits.

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#### CASE STUDY #4: BALLANCE AGRI-NUTRIENTS

Following some challenges with air quality in the Mount Maunganui industrial area, Ballance chose to reduce its contribution to the overall emissions in the area. By design, their sulphuric acid plant emits SO<sub>2</sub> which has not been converted into sulphuric acid. Their historic operating range was approximately 650 ppm, which is below the consented level of 800 ppm. Ballance have invested significant amounts of capital and radically changed the way they operate to ensure the NES is now achieved at all times.

A new technology catalyst was installed during a major maintenance outage in July 2016, resulting in greater conversion efficiency. Ballance also chose to operate the plant at reduced production rates during this time, further dropping the emissions. Following this work, their discharge was reduced to 30% of their normal operating emissions. As part of their long-term project, they are also replacing their converter due to the current plant being life expended. The \$8.3M vessel has now been completely installed and since the plant restarted in mid-August, the emissions have again reduced to approximately 23% of their historic levels. Their production rates have improved drastically, which has meant a win-win for all parties involved.

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#### CASE STUDY #5: PORT OF TAURANGA DUST AUDIT

In February 2015, the Regional Direction and Delivery Committee approved development of a Dust Reduction Operational Plan for the Port. As part of this work stream, staff commissioned an independent air emissions audit of the Port. In October 2016, Emission Impossible Limited (EIL) undertook a week-long audit of the Port, which focussed on dust-source activities.

Following concerns about how dust emission volumes had been estimated within the report, an independent review of the audit findings and recommendations was completed by Tonkin and Taylor.

BOPRC and the Port are working together to find common ground and realistic actions which can be implemented by the Port and independent contractors who undertake activities on Port land, to reduce contaminant emissions to air.

Additional air quality monitoring will be undertaken in the 2017/2018 financial year. The results of the monitoring will direct staff as to whether or not Port operations can continue operating as permitted activities.

If the additional air quality monitoring demonstrates a breach of the National Environmental Standard for PM<sub>10</sub><sup>2</sup>, Council will be required to designate a polluted air shed. This will create additional obligations for BOPRC, including the development of action plans to allow the NES to be met. Designation of an air shed also creates additional consenting requirements, which will apply to the Port and surrounding areas.

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<sup>2</sup> PM<sub>10</sub>: Particulate matter 10 micrometres or less in diameter (Ministry for the Environment, 2017).

## INDUSTRIAL DISCHARGES – LAND: PARA AHUMAHİ KI TE WHENUA

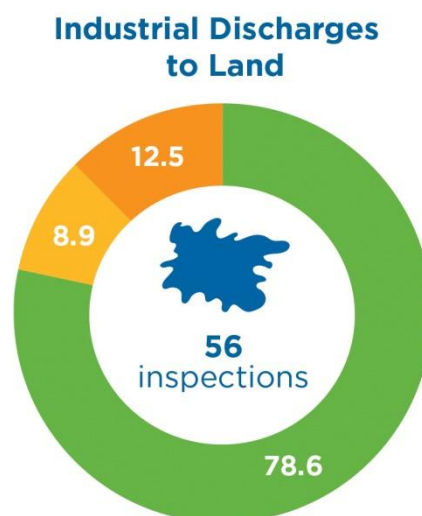
Industrial discharges to land are split into three categories based on the scale of the activity and the associated risk to the environment and human health. Major and medium sized industrial sites with discharges to land are inspected at least annually, whereas smaller minor scale sites are inspected at least every three years.

The following sites are examples of sites classified as having major industrial discharges to land that were inspected over the 2016/2017 monitoring period:

- Affco New Zealand Limited.
- Carter Holt Harvey Limited.
- IXOM Operations Pty Limited.
- McAlpines (Rotorua) Limited.
- Norske Skog Tasman Limited.
- NZ Dairy Processing Limited.
- Whakatāne Mill Limited.

Major risk sites have a significant risk of producing individual and cumulative impacts and often require compliance officers with specific technical knowledge to carry out the monitoring. These sites have a substantial impact on resources, often involve a substantial range of contaminants, and have the potential to alter habitats and impact on ecosystems. As well as regular site visits, they require very frequent review of performance monitoring returns and technical reports throughout the year.

Medium risk sites generally have a regular discharge, which include a range of contaminants at moderate to high concentrations. There is often a noticeable effect on the resources used and other surrounding activities. Minor risk sites are considered to have minor environmental impacts given the discharge volumes are small and often intermittent, there is a small range of contaminants which are discharged at low concentrations.



## RESULTS

Industrial discharges to land made up 36% of the total industrial inspections in 2016/2017 and 12% of the team's overall inspections within the industrial, contaminated land and waste management sectors. A total of 56 inspections of industrial discharges relating to land were completed during this monitoring period resulting in 78.6% of sites being compliant, 8.9% low risk non-compliant, 12.5% moderate non-compliant and no significant non-compliance. The greatest performing industrial discharge to land category was the minor scale sites with 32 of the 40 compliance inspections resulting in compliance.

More than 60% of all compliance visits for this activity were completed within the Tauranga Harbour WMA. This was followed by 16% of visits being undertaken in Tarawera WMA and 12.5% in the Kaituna and Maketū Catchment. Four WMAs had a perfect compliance record this period, with the lowest performing WMA being Tarawera, where only 33% of inspections were found to be compliant. The main reasons for non-compliance were failing to maintain access to sampling points, lack of maintenance and infrastructure being constructed differently than the designs submitted with the plans.



| Industrial Discharges (Land)<br>Results: 2016/2017<br>Monitoring Period | Total<br>Inspections | Complying | Low Risk<br>NC | Moderate<br>Risk NC | Significant<br>NC |
|---|----------------------|-----------|----------------|---------------------|-------------------|
| Tauranga Harbour  | 34                   | 28        | 1              | 5                   | 0                 |
| Kaituna   | 7                    | 7         | 0              | 0                   | 0                 |
| Rotorua Lakes   | 2                    | 2         | 0              | 0                   | 0                 |
| Tarawera  | 9                    | 3         | 4              | 2                   | 0                 |
| Rangitāiki  | 3                    | 3         | 0              | 0                   | 0                 |
| Whakatāne   | 1                    | 1         | 0              | 0                   | 0                 |
| <b>TOTAL</b>  | <b>56</b>            | <b>44</b> | <b>5</b>       | <b>7</b>            | <b>0</b>          |

**Table 17: Industrial discharges to land inspection results in the 2016/2017 monitoring period.**

## INDUSTRIAL DISCHARGES – WATER: PARA AHUMAHĪ KI TE WAI

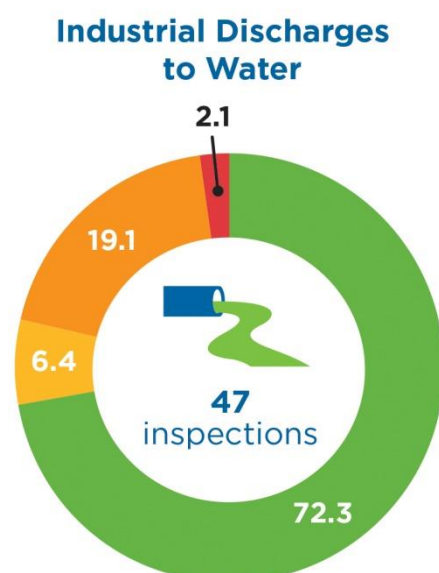
Industrial discharges to water are also split into three categories based on the scale of the activity and the associated risk to the environment and human health. Major industrial sites with discharges to water are inspected quarterly, whereas medium industrial sites are inspected at least annually. Smaller minor scale sites are inspected at least every three years.

The following sites are examples of sites classified as having major industrial discharge to water that were inspected over the 2016/2017 monitoring period:

- Affco New Zealand Limited.
- Asaleo Care New Zealand Limited.
- Ballance Agri-Nutrients Limited.
- BP Oil New Zealand Limited.
- Fonterra Cooperative Group Limited.
- Whakatāne Mill Limited.

Similar to industrial sites with discharges to land and air, major industrial sites with discharges to water also involve a substantial range of contaminants and have the potential to alter habitats and impact on ecosystems. There is often a high impact on receiving waters, which require ongoing monitoring. As well as regular site visits, they require very frequent review of performance monitoring returns and technical reports throughout the year.

Medium risk sites generally have a regular discharge, which include a range of contaminants at moderate to high concentrations. There is often a noticeable effect on the receiving waters. Minor risk sites are often considered to have negligible to minor individual environmental impacts given the discharge volumes are small and often intermittent. Discharges may contain a small range of contaminants which are discharged at low concentrations. Receiving waters are generally monitored to assess cumulative impacts.



## RESULTS

Industrial discharges to water made up 31% of the total industrial inspections in 2016/2017 and 10% of the team's overall inspections within the industrial, contaminated land and waste management sectors. A total of 47 inspections of industrial sites with discharges to water were completed during this monitoring period, resulting in 72.3% of sites being compliant, 6.4% low risk non-compliant, 19.1% moderate non-compliant and 2.1% deemed to be significant non-compliant.

The main reasons for non-compliance with industrial discharges to water were unauthorised and accidental discharges of contaminants to land which then entered water.

Similar to the industrial discharges to land, 60% of all inspections related to industrial inspections to water were located within the Tauranga Harbour WMA. This was followed by the Tarawera WMA, which involved 17% of the total inspections. Four WMAs also had a perfect compliance record throughout the year.

One major industrial site neighbouring the Port received an abatement notice for the discharge of sediment contaminated stormwater to the network and then the Tauranga Harbour.

Three further sites within the Te Maunga industrial area received abatement notices for the discharge of contaminated stormwater to the Tauranga Harbour. Limits and trigger levels on these consents are very tight due to the proximity of the Tauranga Harbour and the sites going forward will require significant investment to meet consent conditions.

| <b>Industrial Discharges (Water)<br/>Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 29                           | 19               | 1                      | 8                           | 1                         |
| Kaituna   | 3                            | 2                | 0                      | 1                           | 0                         |
| Rotorua Lakes   | 1                            | 1                | 0                      | 0                           | 0                         |
| Tarawera  | 8                            | 8                | 0                      | 0                           | 0                         |
| Rangitāiki  | 3                            | 3                | 0                      | 0                           | 0                         |
| Whakatāne   | 1                            | 0                | 1                      | 0                           | 0                         |
| Ōhiwa Harbour   | 1                            | 0                | 1                      | 0                           | 0                         |
| <b>TOTAL</b>  | <b>47</b>                    | <b>34</b>        | <b>3</b>               | <b>9</b>                    | <b>1</b>                  |

**Table 18: Industrial discharges to water inspection results in the 2016/2017 monitoring period.**

### CASE STUDY #1: INDUSTRIAL POLLUTION PREVENTION PROGRAMME (IP3) AUDITS, MOUNT MAUNGANUI

For the ninth consecutive year, BOPRC and TCC carried out a joint Industrial Pollution Prevention Programme (IP3), with a focus on the wider Mount Maunganui industrial area, excluding the Port. The IP3 programme was run as a summer student intern project, which operated from December 2016 to February 2017. A total of 377 individual businesses were visited for an initial on-site inspection to determine the level of risk for the potential to discharge contaminants to the wider stormwater network. All discharges to TCC's stormwater network from the Mount Maunganui industrial area end up in the Tauranga Harbour.

From the initial 377 sites, 148 were selected for a formal audit, which typically involved between 30-60 minutes on-site looking at the entire business process, storage of oils, chemicals and waste products, as well as outdoor storage of any materials, vehicle use and re-fuelling and washing on site. Eighty-four sites were identified as being at risk of causing discharges of contaminants to the stormwater network. Nine large scale sites were asked to develop a Pollution Prevention Plan under TCC's stormwater by-law. Six businesses were discharging to trade-waste and were referred to TCC's trade waste consent process. Sixty nine businesses were required to undertake minor works to mitigate the potential for stormwater discharge contamination.

The most typical issues encountered were lack of a spill kit, lack of bunds or drip trays around oil storage areas, storing oils and chemical drums outdoors without adequate security in place, vehicle washing on hard stand areas using detergent with run-off directly to a stormwater drain, and a lack of drain guards, or in some cases un-roofed wash bays, meaning rainwater was discharging into the waste water network. Businesses were given until 1 June 2017 to implement the required changes and provide evidence back to TCC or BOPRC.

As of August 2017, there are only a handful of businesses that are yet to report on their required actions outlined in the audit report.

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## CASE STUDY #2: PORT OF TAURANGA DEVELOPMENT AND STORMWATER AUDITS

Activities on and associated with the Port significantly contribute to the Bay of Plenty economy. The Port undertakes a range of activities which can result in discharges to the surrounding environment. The Port holds a small number of resource consents; the majority of which relate to structures within the coastal marine area, and the ongoing discharge of stormwater from the Port area.

There is currently a lot of re-development work occurring at Sulphur Point, both on Port, TCC and privately owned land. As mentioned above, TCC's marine precinct is in full development at present which will lead to a full upgrade of stormwater discharges from this area.

The Port recently completed the development of Shed 16 at Cross Road, Sulphur Point. Shed 16 has a covered roof area of about two hectares, and has resulted in a previously unsealed container yard becoming completely sealed. It also resulted in the installation of a new stormwater system.

One outcome of the Port stormwater audits has been a re-think of the consented stormwater retention ponds and discharge parameters for stormwater from the container area at Sulphur Point.

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## EMERGING TREND

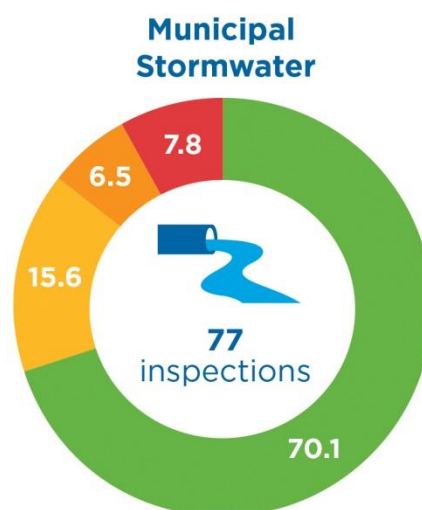
Some industrial discharge consent holders have stated that unprecedented growth in production over the last few years has resulted in their sites often no longer being fit for purpose in terms of managing stormwater. This will either result in the retrofitting of treatment devices or major upgrades of infrastructure. There are approximately three large industrial sites which are proposing to undertake major stormwater upgrades over the next year.

## STORMWATER: WAI MANGA

Stormwater runoff from developed land can contain a number of contaminants; particularly in urban or industrial areas with a large amount of impervious surfaces.

To better manage the stormwater discharge network in urban areas, district councils require resource consent. In some instances, this can be a comprehensive stormwater consent which includes an entire catchment, and may also include managing all third party discharges into the network. However, an urban area may include a number of resource consents for individual discharge points, and significant third party discharges (such as industrial sites) all require a specific consent.

Due to the complexity and risks associated with these discharges, stormwater compliance is one of the main focuses under the new regulatory compliance structure, especially stormwater coming off industrial sites.



## RESULTS

There has been a significant improvement in compliance within the Tauranga Harbour WMA over the past two reporting periods. Only 50% of inspections were found to be compliant during the 2015/2016 reporting period, compared with 66.7% this year. Performance was much better in the other WMA's, with no other significant non-compliances identified. Significant non-compliance was skewed during this period as some resource consents had expired and consent holders had failed to renew their consent to authorise the ongoing discharge. These consequently resulted in significant non-compliance ratings.

| <b>Municipal Stormwater<br/>Inspection Results: 2016/2017<br/>Monitoring Period</b> | <b>Total<br/>Inspections</b> | <b>Complying</b> | <b>Low Risk<br/>NC</b> | <b>Moderate<br/>Risk NC</b> | <b>Significant<br/>NC</b> |
|---|------------------------------|------------------|------------------------|-----------------------------|---------------------------|
| Tauranga Harbour  | 51                           | 34               | 7                      | 4                           | 6                         |
| Kaituna   | 19                           | 15               | 4                      | 0                           | 0                         |
| Rotorua Lakes   | 3                            | 1                | 1                      | 1                           | 0                         |
| Tarawera  | 1                            | 1                | 0                      | 0                           | 0                         |
| Whakatāne   | 1                            | 1                | 0                      | 0                           | 0                         |
| Ōhiwa Harbour   | 1                            | 1                | 0                      | 0                           | 0                         |
| Waioeka   | 1                            | 1                | 0                      | 0                           | 0                         |
| <b>TOTAL</b>  | <b>77</b>                    | <b>54</b>        | <b>12</b>              | <b>5</b>                    | <b>6</b>                  |

**Table 19: Stormwater inspection results in the 2016/2017 monitoring period.**

The main reasons for non-compliance with stormwater related activities included:

- High levels of zinc. Zinc is the primary metal which is breaching consent conditions within the Tauranga area. The source is believed to be galvanised roofing and wear and tear from traffic movement.

- High levels of total suspended solids discharging from sites which are not fully sealed.
- Lack of treatment devices on sites prior to discharges into the stormwater network.
- Non-submission of stormwater returns and water quality data.

## CASE STUDY: COMPREHENSIVE STORMWATER CONSENTS

Western Bay of Plenty District Council have lodged three applications for comprehensive stormwater consents in three zones within the Western Bay of Plenty. These include the western (Waihi Beach/Katikati), central (Te Puna-Minden), and eastern (Te Puke, Maketū, Paengaroa) catchment areas. Currently the Waihi Beach/Katikati application is awaiting a hearing to hear submissions while the other two are on hold while further information is sought.

## EMERGING TRENDS

Several Tauranga City Council (TCC) officers have been provided with warrants by BOPRC. This will allow more officers to be on the ground to attend to discharges to the stormwater network.

## WASTE MANAGEMENT: WHAKAHAERE PARA

Regional councils do not have specific obligations under the Waste Minimisation Act, but have chosen to develop regional strategies in collaboration with territorial authorities, industry and communities to achieve shared waste minimisation objectives. However, under the Resource Management Act regional councils are required to regulate environmental effects that waste disposal facilities and landfills have on their immediate and surrounding environment. This is done by granting and monitoring compliance with resource consents. The following section introduces and displays the compliance monitoring results for the region's transfer stations and landfills.

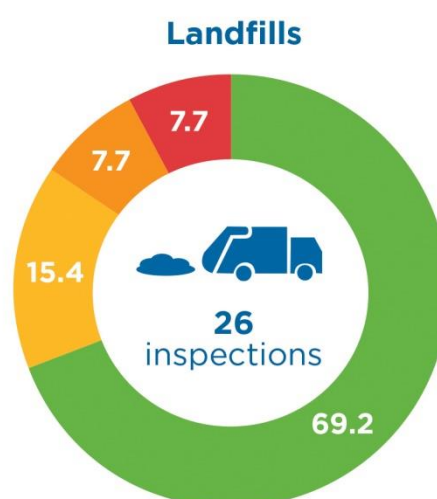
## LANDFILLS

There are currently eight open consented landfills and 12 closed landfills spread throughout the region, which includes one municipal landfill owned and operated by Rotorua Lakes Council. Given the Rotorua landfill does not accept municipal waste outside of the Rotorua District, the remaining districts in the region have to transport their waste to the Tirohia and Hampton Downs landfills in the Waikato region.

Other land disposal sites (landfills) go by many different names, such as farm dumps, cleanfills, monofills (accept a small number of industrial by-products), construction and demolition fills, B-class landfills and non-municipal landfills.

The following list provides examples of open landfills monitored during this monitoring period. Note: some of these sites have since changed ownership and are now operating under different trading names:

- Jack Shaws cleanfill site, Tauriko.
- Ross Green's landfill, Ohauti.
- Carter Holt Harvey Pulp and Paper Mill landfill, Kawerau.



The remainder of the inspections were completed on closed landfills where monitoring is based on any ongoing effects of the presence of the landfill on its immediate and surrounding environment (e.g. odorous gases and presence of leachate).

## RESULTS

Compliance with landfills was below average this year (69%). One concerning result was the two significant non-compliance results, which came from the only municipal landfill in the region. Minor non-compliance was mainly related to local authorities not submitting their own monitoring reports of their closed landfills on time.

| Landfill Inspection Results:<br>2016/2017 Monitoring Period | Total<br>Inspections | Complying | Low Risk<br>NC | Moderate<br>Risk NC | Significant<br>NC |
|---|----------------------|-----------|----------------|---------------------|-------------------|
| Tauranga Harbour  | 11                   | 8         | 3              | 0                   | 0                 |
| Rotorua Lakes   | 3                    | 1         | 0              | 0                   | 2                 |
| Tarawera  | 8                    | 6         | 0              | 2                   | 0                 |
| Whakatāne   | 1                    | 0         | 1              | 0                   | 0                 |
| Waioeka   | 2                    | 2         | 0              | 0                   | 0                 |
| East Coast  | 1                    | 1         | 0              | 0                   | 0                 |
| <b>TOTAL</b>  | <b>26</b>            | <b>18</b> | <b>4</b>       | <b>2</b>            | <b>2</b>          |

**Table 20: Landfill inspection results in the 2016/2017 monitoring period.**

## TRANSFER STATIONS

There are currently eight consented and active transfer stations spread around the region which are managed by district councils. The following list provides examples of transfer stations monitored during this monitoring period:

- Whakatāne District Council transfer station.
- Kawerau District Council transfer station.
- Envirowaste Services Limited, Te Maunga, Tauranga.
- Envirowaste Services Limited, Greerton, Tauranga.

Compliance monitoring inspections generally involve assessing for dust and odour nuisances beyond the site boundary, ensuring the site is clean, tidy and managed, maintained and operated in accordance with consent conditions.



## RESULTS

Compliance with transfer stations was very poor this year with one out of every two inspections identifying non-compliance. Given the demand placed on compliance officers to respond to the additional complaints throughout this period, not all of the transfer stations were monitored as per their annual inspection frequency. The main reason for non-compliance during this period were lack of maintenance, rubbish in and around waterways, elevated sampling results and offensive and/or objectionable odours being discharged beyond the property boundary.



| Transfer Station Inspection<br>Results: 2016/2017<br>Monitoring Period | Total<br>Inspections | Complying | Low Risk<br>NC | Moderate<br>Risk NC | Significant<br>NC |
|--|----------------------|-----------|----------------|---------------------|-------------------|
| Tauranga Harbour   | 5                    | 3         | 0              | 2                   | 0                 |
| Whakatāne  | 3                    | 1         | 1              | 1                   | 0                 |
| <b>TOTAL</b>   | <b>8</b>             | <b>4</b>  | <b>1</b>       | <b>3</b>            | <b>0</b>          |

Table 21: Transfer station inspection results in the 2016/2017 monitoring period.

## COMPLAINTS, INVESTIGATIONS AND ENFORCEMENT

The complaints, investigations, enforcement and reporting team was established to centralise and better resource a number of core functions which were previously shared across the teams. The provision of dedicated investigators is driving improvements in how we manage and implement our enforcement obligations in a fair, consistent and robust way, and provides a much clearer pathway for the wider compliance team to escalate matters for more significant investigation and/or enforcement. Similarly, the appointment of dedicated RCOs for complaints and incident response is allowing us to continue providing a high level of timely service to our customers, particularly through the pollution hotline, without impacting on the wider compliance programme as in the past. More importantly, this has also taken this work off of the other RCOs, allowing them to better manage their time and workload.

One of the new functions through this team is to work with the other teams to facilitate a project-based approach to certain areas of compliance. In 2016/2017, this has been successfully rolled out for geothermal takes (both Rotorua and Tauranga fields) and small scale industrial sites, and will be further implemented for OSET, dairy sheds and horticultural water takes in the 2017/2018 year.

### COMPLAINTS: NGĀ KOOAMUAMU

BOPRC provides a pollution hotline service, with a 24 hour response service. Throughout the 2016/2017 reporting period, we received 2,719 complaints, which are the most complaints we have ever received for any 12 month period, and marks a 15.2% increase on the record set in the 2015/2016 reporting period. The average number of complaints received daily equated to seven, which was up from an average of six in the 2015/2016 period.

The busiest month for 2016/2017 was March, where we received 308 complaints. This is the highest number of complaints ever received by BOPRC in a single month. The busiest single day over this reporting period was 18 January 2017 with 27 complaints being received.



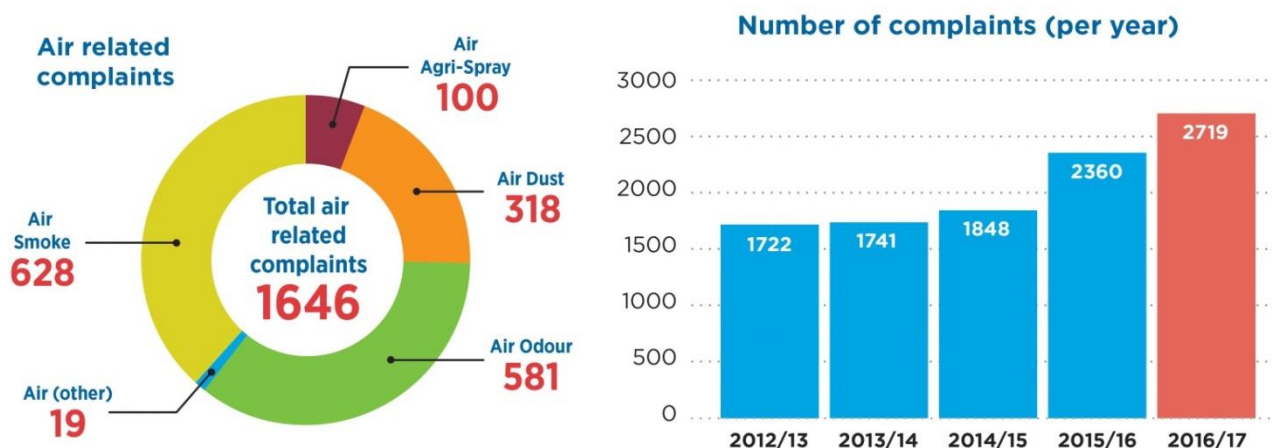
**2719**  
calls in  
total



**Daily average  
of 7 calls per day**

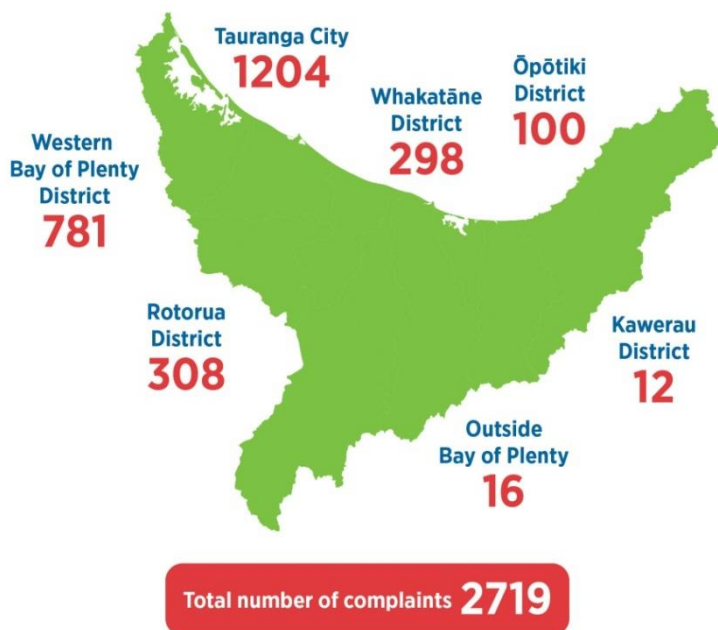
Complaints occur throughout the year, with only seven days during the 12 month period where no complaints were received. Summer is generally the busiest period for the year, which is to be expected given the more likely presence of dust, and more people enjoying the outdoors.

The majority of complaints remain linked to air quality (60.5%), particularly dust (11.7%), smoke (23.1%) and odours (21.4%). These complaints were distantly followed by water quality (5.7%), coastal related activities (4.6%) and rubbish (4.1%).



Complaints were spread throughout the region, with 16 complaints coming from outside of our region. Tauranga City District received the vast majority of complaints (44.3%), followed by the Western Bay of Plenty District (28.7%), Rotorua District (11.3%) and Whakatāne District (11%). Kawerau District only received 12 complaints throughout the year. The majority of complaints, which came from outside of our region, came from Taupō.

### Number of complaints by location



A total of nine urgent complaints were received and all of these were responded to within 12 hours from the time of the initial complaint. Of the 2,710 non-urgent complaints received, 2,701 (99.7%) were responded to within three working days of receiving the initial complaint.

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## CASE STUDY #1: INDUSTRIAL PLANT

Since January 2016, the compliance team have received 57 complaints relating to an industrial site in the Western Bay of Plenty emitting objectionable odours beyond its boundary. The business was new and encountered issues fine tuning its plant equipment.

Compliance staff issued the business with an abatement notice in October 2016 requiring it to cease discharging objectionable odours beyond its boundary. The company subsequently breached the abatement notice and was issued with an infringement notice.

Throughout that time compliance staff worked with the business offering advice and guidance to assist them in complying with the regional Air Plan rules. The business took it upon themselves to improve and invested significant time and cost in redesigning aspects of the plant, improving operational methodology and installing an odour neutralising system.

Since undertaking the changes, complaints relating to objectionable odour being emitted from the location have reduced significantly.

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## CASE STUDY #2: PET FOOD FACTORIES

Pet food factories contribute to a significant number of our odour complaints. Four factories have been working this year to implement new odour control systems, which are now operating with various levels of success:

- A plant based in Judea has implemented a treatment system that uses ozone to 'disinfect' the air discharge and destroy the odour molecules. No complaints have been received since the system was fully commissioned.
- A plant at Mount Maunganui has raised the heights of the discharge stacks from its ovens in order to achieve greater dilution and dispersion throughout the air column. The intent is that this will reduce the strength and frequency of odours experienced by neighbours. A deodoriser is also sprayed at lower heights at roofline level. The work to raise the discharge stacks is 80% complete.
- A plant in Te Puke has constructed a biofilter treatment system which sends the discharged air through organic material that captures the odour molecules. Very few complaints have been received since and all of the recent complaints related to them leaving their factory doors open.
- Another plant in Te Puke has installed an ozone treatment system which is effectively treating the discharge. However, problems remain with fugitive emissions escaping the building. Further investigation work is being undertaken by the operators.

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## INSIGHTS

While there are still a few deliberate actions, most incidents are the result of people failing to make the appropriate enquiries, turning a blind eye when setting up an activity, or just failing to consider what effects their activity might have on their neighbours. A lot of Council's interventions could be avoided if people made an effort to have better neighbourly relationships.

Work is being done to identify annual trends in the types of complaints being received. This work will enable our staff to better focus their workloads, provide timely education and advice to community groups, and work in a more proactive space rather than being reactive focussed.

## INVESTIGATIONS AND ENFORCEMENT: URUHITANGA ME NGĀ RAPUNGA

Investigations are formal examinations of serious incidents which have the potential to result in prosecution. When undertaking an investigation it is important that all available evidence is gathered and analysed, as decisions can only be made using the facts, not assumptions or guesses. Hence investigations can be a lengthy process. No formal charge has been laid at this stage of the enforcement life cycle and information is not yet publicly available.

Seven matters which were investigated during the period did not lead to prosecutions, but were dealt with by warnings, abatement notices, infringement notices or a combination of these outcomes. There are nine current and ongoing investigations.

There have been more investigations involving sediment discharges to freshwater during the period largely due to the amount of earthworks involved in residential subdivision and kiwifruit orchard conversions.

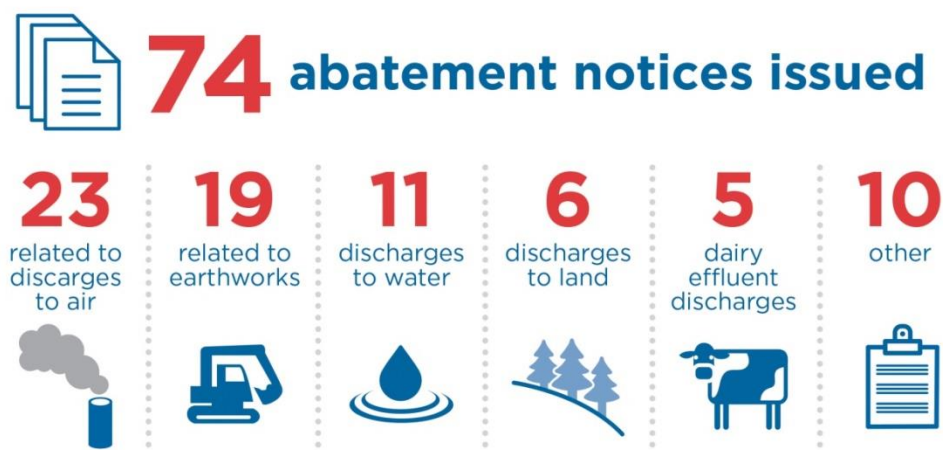
### ABATEMENT AND INFRINGEMENT NOTICES:

Abatement and infringement notices are formal enforcement tools under the RMA for dealing with non-compliances.

Abatement notices are formal instructions, which may be a direction to either cease doing something, take action to address an environmental effect, or to comply with consent conditions.

Infringement notices are issued for serious non-compliance offences which do not warrant further action, such as prosecution. The fines are set by the Government and range from \$300-\$1,000, depending on the offence.

Throughout the 2016/2017 year, 74 abatement notices were issued, which is nine less than the 2015/2016 period. Similar to complaints, the majority of abatements (31%) related to discharges to air, with the remainder relating to discharges to land (8%) and water (15%), earthworks (26%) and dairy effluent discharges (7%). Thirty-one abatement notices were in relation to breaches of resource consent. The busiest month for serving abatement notices was November 2016 (11), with the quietest month being August 2016 (2). An average of six abatement notices were served each month throughout this reporting period.



Twenty-two infringement notices were issued during the year. Seven of these were linked to the breach of an abatement notice, while eight were consent related. The majority of infringements related to discharges to land (45%), with the remainder relating to air (27%) and water discharges (9%), earthworks (5%) and other land use (14%). Similar to complaints, the busiest month for serving infringement notices was March 2017 (5).



## PROSECUTIONS

Prosecutions are generally reserved for more serious offences where significant environmental effects have occurred, or where there has been repeated serious non-compliance. The maximum penalties under the RMA are up to two years imprisonment and up to \$300,000 fine for individuals, or up to \$600,000 for a company.

BOPRC considers any serious non-compliance matters through an Enforcement Decision Group (EDG). The EDG are made up of senior staff within the Regulatory Compliance Team and is designed to provide a robust assessment of each case. Not all cases taken to the EDG level result in a recommendation to proceed with prosecution; many result in other forms of enforcement, such as issuing formal warnings or notices.



Six prosecution matters were sentenced during the 2016/2017 reporting period which resulted in fines totalling \$176,925:

- Gavin Dyer was fined \$22,500 for taking groundwater in excess of his consent limit at his kiwifruit orchard in Pongakawa (sentenced July 2016).
- ANZ Autos Limited was fined a total of \$38,500 for the discharge of oil from a car wrecker's yard in Ngongotahā to Lake Rotorua. This prosecution was the result of a co-coordinated investigation with Rotorua Lakes Council's Pollution Control Team. The sentence sent a clear message to industrial sites that the Court will not tolerate pollution of our waterways (sentenced November 2016).
- Beach Contractors Limited was fined a total of \$13,800 for discharging sediment contaminated water from a quarry to Two Mile Creek at Waihi (sentenced November 2016).
- Forest Owners Marketing Services Limited, Gaddum Construction Limited and Chance Brown were sentenced to fines totalling \$58,000 as the result of a forest harvesting operation which caused sediment and woody debris to enter tributaries of the Tirohanga Stream, Ōpōtiki (sentenced November 2016).
- Kahu Ma Farms Limited was fined \$27,000 for a dairy effluent discharge to a stream at Tirohanga (sentenced May 2017).



- One other notable case had an alternative sentencing outcome where the landowner agreed, through an enforcement order, to consenting to 2 ha of his land being covenanted for the purposes of a wetland enhancement project aimed at providing rearing habitat for inanga (whitebait) and other fish. By doing this, his fine was reduced by the sentencing Judge to reflect the benefits to the environment and the community.

Five of these matters related to discharges of contaminants to fresh water while the other related to an authorised freshwater abstraction. There are currently eight prosecutions before the Court and one enforcement order.

## EMERGING TREND

One interesting trend has occurred during the year with two of the six defendants pleading not guilty and electing trial by jury or judge. The preparation of evidence for these hearings puts an extra financial burden on Council.



## DISCUSSION

### NON-CONSENTED COMPLIANCE

Regional plans and legislation provide for a range of permitted activities (PA). The majority of these are subject to strict conditions, similar to what might be in consents. The majority of permitted activities generally do not require any notification from the public to BOPRC, making it difficult to track and monitor compliance with the permitted activity conditions of the plans. When notification is provided (e.g. gravel extraction under the Regional River Gravel Management Plan) staff are able to audit the activity to ensure compliance. However, there is no mechanism to recover staff costs for monitoring PAs.

The PA side of compliance is often reactive, and the nature of complaints reflects this, with the majority related to non-consented activities. For example, dust from PA earthwork sites, woody debris and slash discharges to waterways from PA forestry sites, and offensive and objectionable smoke and odour from burning prohibited materials. However, throughout this year, we have seen good results out of targeted and proactive projects, which seek to identify and reduce non-compliance through the plans, particularly in the area of water takes, Tauranga geothermals and small scale industrial discharges. These projects are discussed further in the relevant sections above.

One of the implications of not monitoring some PAs, includes not knowing what the cumulative impacts of all PA activities are having on the receiving environment and the associated implications for tangata whenua over time. This is an area the compliance team may find themselves working more closely in as we aim towards a more proactive approach to compliance.

### INCREASING COMPLEXITY AND NUMBER OF “VIP” CONSENTS

Throughout 2016/2017 we continued to see more complex and lengthy consents being granted, as the requirements imposed on consent holders continues to become more onerous. This is particularly true for consents relating to major industries, large scale earthworks, major infrastructure and large contaminated land and water remediation projects, such as the Kopeopeo Canal consent. These consents are often referred to as VIP consents, and can include a suite of consented activities.



The complexity of these consents and associated consent condition volume generally reflects the potential environmental impacts associated with the activities. Subsequently, in addition to imposing clear restrictions on contaminant levels and behaviour, they also tend to include a significant amount of reporting to BOPRC. Some examples of VIP Consents include Trustpower's Matahina Hydro Scheme, the Ballance Agri-Nutrients Plant in Mount Maunganui, and the Fonterra Plant in Edgecumbe. The majority of these consents have in excess of 20 to 30 complex and often technical consent conditions. These require greater engagement on behalf of the consent holders, and a greater compliance monitoring commitment from BOPRC compliance staff.

The Regulatory Compliance Team restructure has enabled better management of compliance for these consents, which has been one of the many wins from the restructure. Staff have been able to focus solely on their compliance work, knowing and trusting that the complaint and service request enquiries are being dealt with by the complaints, investigations and enforcement section of the team.

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## ACCELA, AMO, SERVICE REQUESTS AND ENFORCEMENT MODULES

The Accela Mobile Office (AMO) component of Accela<sup>3</sup> was rolled out across the team in August 2016. AMO has provided us with a platform to progressively become more mobile. Staff have the ability to complete data entry, escalate service requests (complaints) to enforcement, and provide customers with an electronic copy of their inspection results while in the field. Previous service request and enforcement history can be viewed using improved GIS<sup>4</sup> features, which better informs staff prior to attending sites.

The service requests, enforcement, OSET, Land Use and Bore modules in Accela went live in June 2017, which has resulted in five of our previous databases being merged into one. The external benefits are still being discovered as staff familiarise themselves with the new system. One benefit includes the open and unresolved service requests that require action are easier to track, which means customer's concerns and enquiries can be responded to and resolved in a much timelier manner.

There is ongoing data migration and cleansing work occurring and until this work is completed reporting from Accela may have an element of error. We have learned that Accela is a very data hungry system, so we are also reviewing our processes to ensure the data capture effort provides value to both our internal needs and customer.

Time efficiencies with reporting have allowed us to start supplying information in a much timelier manner. Similarly, more detailed reporting is available from Accela, which has allowed more meaningful data, information and analysis to be produced. On-going enhancements to reporting will enable us to better inform planning, policy, tangata whenua and other internal and external stakeholders.

Although there have been many benefits seen as a result of the implementation of Accela and AMO, improvements are still being progressed to enable the Regulatory Compliance Team to build on our compliance monitoring achievements of 2016/2017 over the next 12 months.

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<sup>3</sup> Accela: A cloud-based productivity and civic engagement software, which provides asset, land and legislative management to licensing, finance and environmental health (Accela, 2017).

<sup>4</sup> GIS: Geographic Information System designed to capture, store, manipulate, analyse, manage, and present spatial or geographic data (National Geographic, 2017).





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