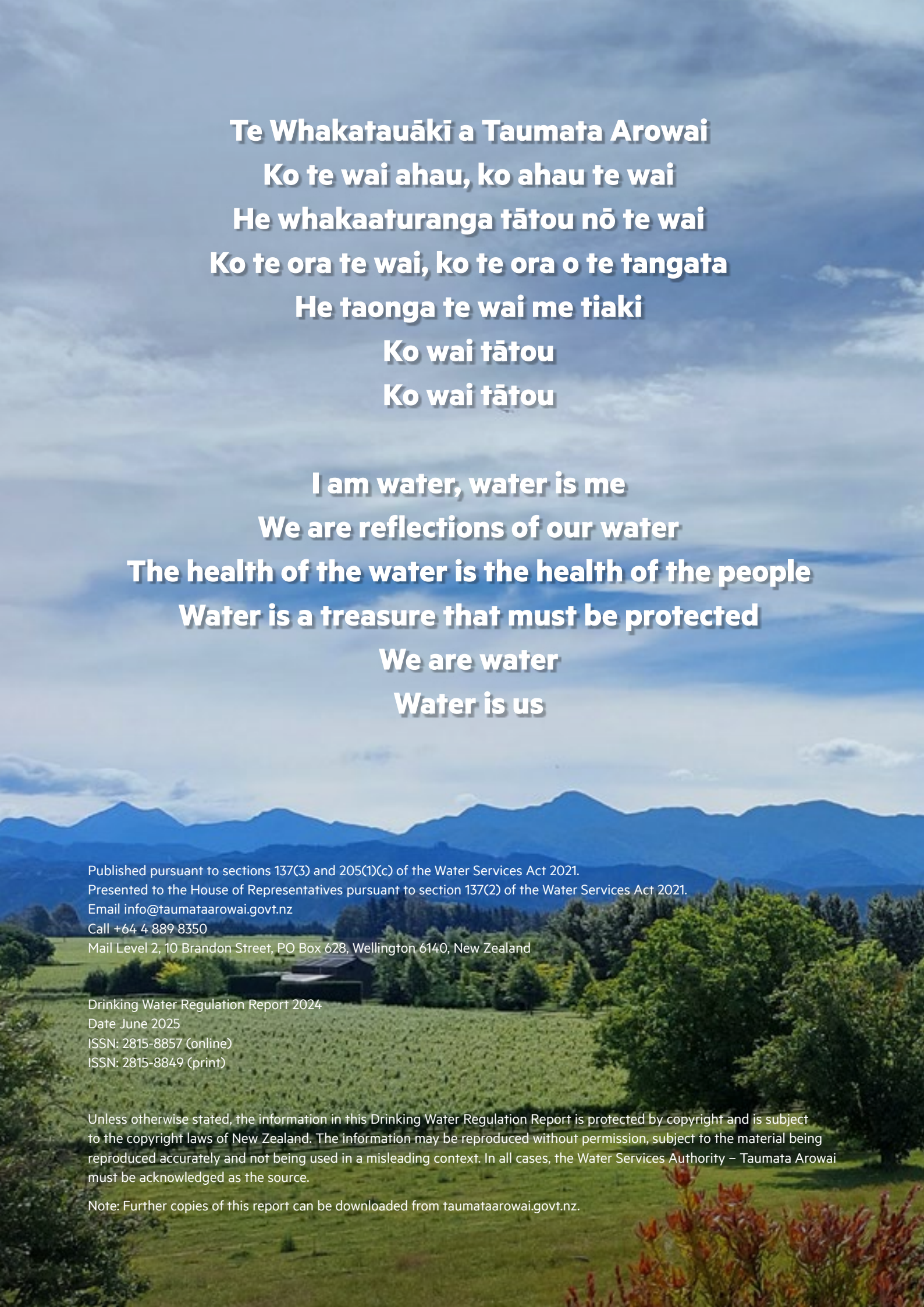
Drinking Water Regulation Report

2024

Water Services Authority
Taumata Arowai



Te Whakatauāki a Taumata Arowai
Ko te wai ahau, ko ahau te wai
He whakaaturanga tātou nō te wai
Ko te ora te wai, ko te ora o te tangata
He taonga te wai me tiaki
Ko wai tātou
Ko wai tātou

I am water, water is me
We are reflections of our water
The health of the water is the health of the people
Water is a treasure that must be protected
We are water
Water is us

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Foreword

We are pleased to present our fourth Drinking Water Regulation Report (DWRR), which provides an overview of the country's drinking water supplier performance. We are also publishing our second Network Environmental Performance Report (NEPR), which covers network performance on a range of measures and their environmental impact. Together, the reports provide an overall picture of the way our water networks are maintained and operated which directly affects water suppliers' ability to provide safe and sufficient drinking water.

We have seen a major lift in suppliers reporting on their performance against the Drinking Water Assurance Rules and improvements on reporting on network performance. These improvements show positive sector engagement with regulatory requirements.

Our reporting shows some progress towards achieving the goal of safe drinking water for all. More supplies have installed critical treatment barriers and others are on track to implement them during 2025. Almost 4 million out of the 4.4 million people served by registered drinking water supplies now have access to drinking water with critical safety barriers. However, we are concerned by persistent issues that remain unresolved. The number of *E. coli* exceedances remains stubbornly high, particularly for schools that supply their own drinking water. There continues to be a very high number of consumer advisories in place for long periods. Unregistered supplies also face a number of significant challenges to supply safe drinking water for reasons such as isolation and lack of resources. These communities are often rural based and many are predominantly Māori.

We use these insights to determine our regulatory approach and target outreach to the sector. We will shortly publish our refreshed Compliance, Monitoring and Enforcement (CME) Strategy 2025-2028. This will set out what we expect drinking water suppliers to do over the next three years to address the most significant risks to public health.

In particular, we are monitoring the Ministry of Education's progress to address the lack of access to safe drinking water at many rural schools. We are working closely with rural schools to respond to drinking water safety issues, and we know that the issues found in these supplies are most likely shared among rural communities more broadly. Outside of schools, our approach to reaching unregistered community and private supplies takes heed of their unique contexts, and focuses on ensuring that basic treatment barriers are in place to deliver safe drinking water.

In terms of network performance, high rates of water loss and poor maintenance correlate directly to increased risks to public health and the environment. While reporting in this year's NEPR has improved, some network operators' understanding of key environmental performance measures, like water loss, remains poor. This report provides recommendations to build maturity in reporting data so we can accurately reflect back performance to help inform a maturing sector. Better information about our networks is an essential first step to making better decisions about our networks and ensuring better outcomes for our communities and the environment.

Leading network operators are taking a 'one water' approach to planning and management across all three water types, resulting in more efficient resource use, enhanced resilience planning and a better ability to prioritise their investment. Through our NEPR, we challenge sector leaders to address their water loss, increase their network knowledge, and monitor increasing pressures on water sources such as urban growth and climate change.

Our vision is that everyone in New Zealand has safe drinking water when they turn on the tap, and this taonga is being valued in water networks from source to tap. It will take all of us across the sector working together to achieve this.

Finally, we would like to acknowledge the work of Te Puna (the Māori Advisory Group), chaired by Riki Ellison, in contributing towards advising on Māori interests and knowledge in relation to the issues raised in these reports. We also thank the team involved in developing these reports.

Kia tiakina te wai, hei oranga mō te katoa. Safe water every day for everyone.

Raveen Jaduram
Board Chair

Allan Prangnell
Chief Executive

Executive summary

Public drinking water supplies are improving

The Authority has set clear expectations that public drinking water supplies, mostly run by councils, need to implement basic treatment so that their consumers have access to safe drinking water. This year we are encouraged by the increased number of councils that have put in place treatment to protect against the risk of bacteria and protozoa.[1] **As of 31 December 2024, 119,000 more people now have access to drinking water from council and government supplies that have critical safety barriers installed**. This is a significant step and brings the total number of people who now have access to drinking water with critical barriers in place to 3.85 million. International evidence suggests these barriers substantially reduce waterborne illness risks, preventing numerous unreported illnesses and establishing a foundation for comprehensive drinking water safety.

Since the end of last year, improvements have continued and now nearly 4 million New Zealanders, who receive water from public supplies, have access to water with treatment barriers.

While significant improvements have been made by many suppliers, some consumers are at risk of being exposed to unsafe drinking water

Despite progress, approximately 289,000 New Zealanders continue to be served by council or government supplies lacking one or more critical barriers. Or in some places, the treatment barriers are not being operated or maintained properly.

In many supplies around the country, particularly rural supplies, the number of *E. coli* exceedances remains high and this poses an ongoing risk to public health. This indicates the presence of faecal contamination and the likelihood of pathogens that have the potential to cause illness. Suppliers must treat any detection of *E. coli* in drinking water as serious and to take the actions needed to protect public health until they can resolve the issue. While *E. coli* detections were more frequently reported from rural supplies, some detections were reported at urban council supplies, including some councils with the required treatment barriers in place.

The risks to drinking water quality at many school supplies is extremely high. We are particularly concerned by the number of *E. coli* exceedances at schools that supply their own drinking water, as this places children at increased risk. In 2024, 71 schools reported at least one incidence of *E. coli* – meaning there was faecal contamination of their drinking water.

The Authority has made our expectations clear to the Ministry of Education (MOE) to take action to address underlying causes and ensure safer drinking water is provided to children at these schools. We have seen some improvements, but this is a continuing priority area for the Authority.

We are aware that for some small council and government rural systems, conventional solutions may prove impractical or unaffordable and we are working with those suppliers on alternative cost-effective technology and updated acceptable solutions.

We expect those supplies who still do not have basic treatment barriers install them by the end of 2025, and that next year's report will show a step change for all public supplies.

The Authority's next focus will be on ensuring that these barriers are operating effectively, and that smaller community and private suppliers also have basic treatment barriers in place.

We are increasingly able to give the public assurance about their water services

We administer standards and set clear expectations through a series of rules and requirements that tell suppliers what is required in terms of treatment, monitoring and testing, as well as the maximum levels of contaminants allowable for drinking water. Meeting standards and following the rules is important for ensuring the quality of the drinking water across the network, from the water source through to distribution. Suppliers reporting to us on their performance against the Drinking Water Quality Assurance Rules (the Rules) is an important step in demonstrating that the drinking water they supply to consumers is safe.

1 Bacteria and protozoa are types of microbiological organisms. They are important in drinking water as some types of bacteria and protozoa can cause illness. The primary purpose of drinking water treatment is to remove or inactivate these organisms.

There are two main ways that suppliers provide us information that shows they are managing their drinking water networks effectively and carrying out adequate testing and treatment processes: the Rules and by developing a Drinking Water Safety Plan (DWSP).[2]

Better information and improved reporting create the foundation for data-driven regulation and targeted intervention, allowing the Authority to allocate its resources toward the highest-risk situations. This feedback loop – from regulatory requirement to operational insight – demonstrates how well-designed reporting frameworks can serve as both compliance mechanisms and management tools. As reporting quality continues to improve, we anticipate further operational benefits as councils leverage this information to make more informed infrastructure and resource allocation decisions.

This year:

More suppliers have communicated their plans to provide safe drinking water. Most suppliers need to comply with the Rules for centralised treatment of their water supplies and must communicate how they intend to provide safe drinking water by preparing a drinking water safety plan (DWSP). This year more suppliers have lodged DWSPs with us, increasing from 59% of supplies (795) in 2023 to 74% (993) in 2024.[3]

Despite this progress, the low proportion of community and private supplies that have registered or provided a DWSP to the Authority presents a significant barrier to effective regulation and support. Many unregistered community and private supplies remain invisible to formal systems, especially those in small predominantly Māori communities. The Authority will continue to take a proactive approach to these communities, grounded in a common understanding of practical approaches to provide safe drinking water and respect for the unique contexts of these diverse supplies. The Authority will also focus on guidance to help community and private suppliers better understand their requirements.

More suppliers are reporting on their requirements in the Rules, giving us greater confidence they are managing the safety and quality of their supplies. Councils have significantly improved their reporting against the Rules by the due date, increasing from 76% in 2023 to 90% in 2024. Councils are also reporting in more detail. Nearly all councils reported on their compliance with treatment rules for small and medium supplies, the performance of their bacterial treatment, and their compliance with bacterial monitoring rules. There were also high levels of reporting from two government suppliers – the Department of Corrections and the New Zealand Defence Force. However, the MOE reported against the Rules for less than 1% of schools that supply their own drinking water.

We expect suppliers' reporting and performance against the Rules to continue to improve year-on-year to produce demonstrably safer water. Although councils are improving their performance against the Rules, many still report that they do not meet the minimum requirements. We expect councils' performance to increase, including, but not limited to addressing gaps in critical safety barriers, backflow prevention and appropriate storage practices. We have improved our systems to make it simpler for smaller supplies to report to us. We are continuing to engage with the MOE on our expectations for continuous improvement in reporting for schools.

There continue to be too many long-term consumer advisories, such as boil water notices, that have been in place for extended periods. There were 74 long-term consumer advisories in place at year end, compared to 89 in 2023. Twenty council supplies serving 7,000 people have had long-term advisories in place for three or more years. Sixteen of these supplies lack one or more critical safety barriers.

The persistence of long-term consumer advisories represents a significant regulatory and public health challenge. While these advisories provide an immediate risk management mechanism, their prolonged use undermines their effectiveness as research indicates consumer compliance with boil water notices decreases substantially over time. This situation highlights a critical tension between short-term risk management and the need for sustainable, permanent infrastructure solutions.

These long-standing advisories often reflect deeper structural challenges, including funding constraints, technical capacity limitations and governance issues, particularly in smaller communities. As we work toward resolution of these cases, the Authority will balance firm timelines for implementation of permanent solutions with pragmatic recognition of capacity constraints. We will continue to support smaller communities to understand what is reasonable and achievable. However, we may use our enforcement tools to require action from suppliers.

Looking forward

This report shows a system that is maturing. Compliance is improving, data quality is strengthening, and more suppliers are taking their responsibilities seriously. But it also confirms that critical gaps remain, particularly in smaller supplies and those lacking effective treatment or risk management capability.

2 A DWSP focuses on identifying, assessing and managing risks across a drinking water supply to ensure that drinking water is safe to drink.

3 Supplies that are required to prepare and implement a DWSP and are not following an acceptable solution or do not have a general exemption.

As a regulator, the Authority's focus will remain on reducing harm and building a culture of drinking water safety across the sector. The insights from this report will guide where we focus our effort and increase our regulatory intensity – supporting better risk management, lifting performance in persistent areas of non-compliance, and encouraging capability building in places that need it most.

We will be setting our regulatory priorities for the next three years through our revised Compliance, Monitoring and Enforcement Strategy

Our CME Strategy is informed by the data and insights about drinking water supplies reported on in our 2022-2024 DWRRs.

We will share clear priorities and expectations for suppliers for the next three years over the coming months. This will highlight our ongoing focus on improving the number of supplies with basic treatment barriers and ensuring that these barriers are operating effectively.

This report is split into five parts:

Part one: Discusses safe drinking water and looks at the safety of drinking water supplies in New Zealand.

Part two: Looks at the extent to which risks and hazards to source water are being identified, managed and monitored.

Part three: Looks at drinking water supplier performance and sector capability.

Part four: Looks at community and private suppliers.

Part five: Considers our performance and the extent to which the Act is meeting its main purpose.

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About drinking water suppliers and supplies

In this report, we focus on the 547 suppliers that own and operate 1,528 drinking water supplies that have registered with the Authority and have confirmed their registration details with us.[4]

Table 1: Break down of supplier types and supplies

Supplier types and supplies	Description
67 council suppliers (operating 525 registered supplies)	Territorial authorities, regional councils and unitary authorities.
Four government suppliers (operating 470 registered supplies)	Ministry of Education – Te Tāhuhu o te Mātauranga (schools). Department of Conservation – Te Papa Atawhai – (campsites, huts and villages). Department of Corrections – Ara Poutama Aotearoa (prisons). New Zealand Defence Force – Te Ope Kātua o Aotearoa (facilities).
476 community and private suppliers (operating 533 registered supplies)	**Māori suppliers** – this group includes iwi entities, kura supplies, kōhanga reo, marae, papakāinga and Māori community supplies.
	Facilities and communities – such as universities, private schools, hospitals, airports and ski fields.
	Other – such as mixed-use rural supplies, residential and other private or community supplies not owned by councils.
	Water carriers – operators who transport drinking water without reticulation.
Unverified suppliers	Suppliers who are registered but have not confirmed their details and are not included on the public register of drinking water supplies.
Not a drinking water supplier under the Water Services Act 2021	
Domestic self-supplies	Stand-alone domestic dwelling supply, like a roof water supply for a single household unit.

Figure 1: Proportion of population served by registered drinking water supplies

4 The Authority inherited some information from the Ministry of Health about registered drinking water supplies that it has been unable to verify. These supplies are considered 'unverified supplies' and information about them is generally not included in this report, with the exception of the community and private suppliers section.

Table 2: Break down of registered supplies by supplier type and population

Supplier type	Registered supplies	Approximate supply population
Council	525	4,301,912
Department of Conservation	38	8,661
Department of Corrections	3	3,550
Ministry of Education	418	46,630
New Zealand Defence Force	11	13,875
Community and private	533	73,301
Total	1,528	4,447,929

Figure 2: Public register of drinking water supplies

This report reflects information provided to us by drinking water suppliers and laboratories

In this report we rely on self-reported data provided by drinking water suppliers and accredited laboratories which are indicators of drinking water safety.

We analyse the data by:

- Supply size
- Supplier type
- Supply type.

More information on data, data analysis and data quality is available in the Appendix to this report.

Part one:
Drinking water safety

In this part, we:

- discuss the pathways towards safe drinking water
- look at data and information collected from notifications and consumer advisories about the safety of drinking water in New Zealand
- address how suppliers proactively manage the safety of their supplies.

Water for drinking water supplies comes from a range of sources, including lakes, rivers, groundwater and roofs. It can contain contaminants which may be harmful to people's health. Contamination of drinking water can also occur during treatment or within distribution systems if processes and infrastructure are not well managed.

The primary purpose of drinking water treatment is to remove or inactivate microbiological hazards. This is because waterborne pathogens can cause sudden outbreaks of illness in the population. Managing chemical risks is also important, although elevated chemical levels are less likely to cause an immediate risk to health.

Providing safe drinking water

Drinking water suppliers have a duty to ensure the drinking water they provide to consumers is safe.[5]

The Water Services Act 2021 (the Act) defines drinking water as 'safe' if it is unlikely to cause a serious risk of death, injury or illness either immediately or over time. This could be due to the consumption of drinking water alone or in combination with other sources.

Every day, drinking water suppliers play a vital role in supporting the health and wellbeing of people across New Zealand by providing them with safe, reliable drinking water. We expect all suppliers to actively identify risks and take targeted action to reduce the chance of people being harmed.

The pipeline to safe drinking water is pictured below. Each point in the pipeline reflects a key step a supplier can take to lift supplier performance and reduce the risk of people getting sick from their drinking water. These are the areas where suppliers can expect the greatest focus from us.

Figure 3: Pipeline to safe drinking water

The Rules

For most suppliers, the pathway to supplying safe drinking water is to comply with the Drinking Water Quality Assurance Rules (the Rules) set by the Authority using centralised treatment and to prepare a drinking water safety plan (DWSP).

The Rules require suppliers to monitor water quality and undertake quality assurance activities across the drinking water network, from the source to the distribution to the consumer, as an important step in demonstrating that the drinking water they supply is safe.

The Rules modules reflect the scale, complexity and risk profile of different supplies. Suppliers select the appropriate modules for their supply. For most supplies the Rules are split into sections covering source water, treatment and distribution systems. This includes regular monitoring of source and treated water for key determinands, such as bacteria. It also includes quality assurance measures to ensure systems, processes and monitoring equipment are working effectively. There are also specific rules for water carriers. In Part 3: "Drinking Water Supplier Performance", we look at how suppliers are performing against their requirements in the Rules.

5 See s 21 of the Water Services Act 2021.

Drinking water safety and acceptability

The Drinking Water Standards for New Zealand 2022 (the Standards) set the maximum acceptable value (MAV) (or limit) for the concentration of a range of microorganisms, chemicals and radiation which can affect the safety of drinking water in drinking water.[6] [7]

The Aesthetic Values for Drinking Water Notice 2022 (Aesthetic Values) provides thresholds for substances and parameters which can affect the taste, colour or smell of drinking water. While these do not directly influence safety, when drinking water is aesthetically unacceptable consumers can seek water from other, possibly unsafe sources.

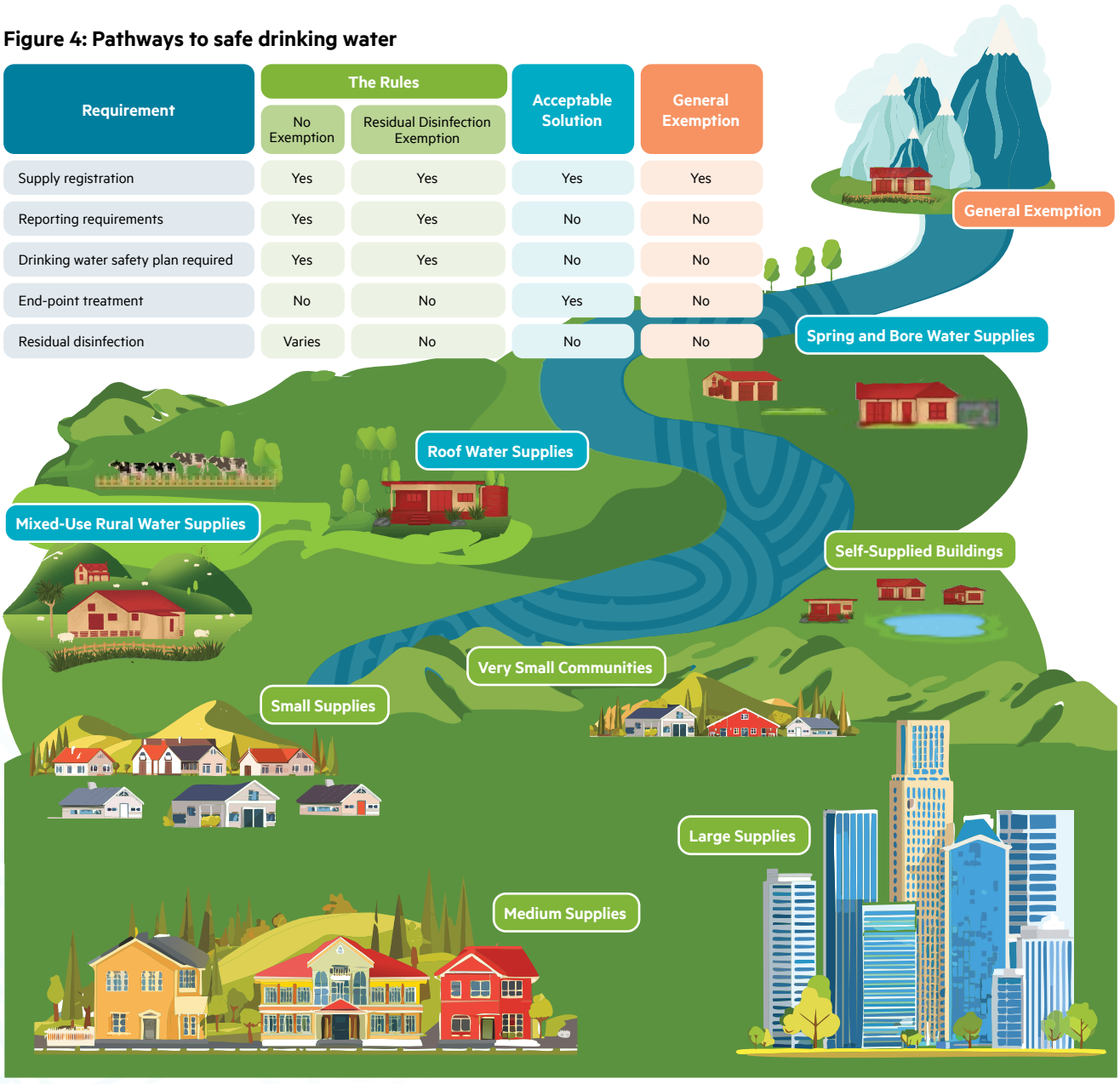
Alternate pathways to safe drinking water

For some suppliers, carrying out centralised treatment under the Rules and preparing a DWSP may not be cost-effective or practical for their supply. Acceptable solutions can provide practical and cost-effective ways for drinking water suppliers to provide safe drinking water by using end-point treatment (e.g. a small treatment unit attached to a consumer's house). The Authority has recently consulted on changes to the acceptable solutions to make these more accessible. Any changes to the acceptable solutions will be reflected in future reports.

A supplier or class of suppliers may also apply for a general exemption to be exempt from most requirements under the Act. General exemptions are intended to respond to exceptional circumstances where other options are not practicable or possible (e.g. where there is no electrical power for treatment). We discuss acceptable solutions and general exemptions later in this section.

Figure 4: Pathways to safe drinking water

Requirement	The Rules		Acceptable Solution	General Exemption
	No Exemption	Residual Disinfection Exemption		
Supply registration	Yes	Yes	Yes	Yes
Reporting requirements	Yes	Yes	No	No
Drinking water safety plan required	Yes	Yes	No	No
End-point treatment	No	No	Yes	No
Residual disinfection	Varies	No	No	No



6 Water Services (Drinking Water Standards for New Zealand) Regulations 2022 (SL 2022/168) – New Zealand Legislation

7 These limits are generally based on guideline values set by the World Health Organization.

Notifications from drinking water suppliers and laboratories

Suppliers must notify us and consumers if they consider their drinking water is, or may be, unsafe or it does not comply with the Standards

The Act requires that suppliers notify us about a range of situations. This includes when there are concerns about the safety or compliance of drinking water, where there are restrictions or interruptions of drinking water supply lasting more than eight hours or when there is an imminent risk to the sufficiency of the water available through the supply. When a Maximum Acceptable Value (MAV) is exceeded, both the supplier and the accredited laboratory that tested the water must notify us.[8]

Notifications are vital for us to ensure that suppliers are taking appropriate action that reflects the seriousness of each incident. We assess and triage every notification we receive for registered supplies. We also assess notifications for unregistered supplies, although these notifications are often missing critical information about the supply. The information we gather from notifications also provides valuable insights (such as trends and emerging issues) about drinking water supplies.

A supplier's first priority is to take any immediate action needed to protect public health. Next, they must notify us, investigate the source or cause of the incident and take remedial action to resolve the situation.

Where the notification indicates that drinking water may be unsafe or that a MAV is exceeded, the supplier must take all practicable steps to advise consumers and indicate actions that must be taken to protect public health (e.g. boiling water or making an alternate source available, such as bottled or tankered water).

A supplier must identify and implement the measures required to ensure that the incident does not happen again. Some improvements may take place over a longer period (e.g. as a normal part of the supplier's drinking water safety planning process). Suppliers must manage any risks to drinking water safety, sufficiency or compliance in the interim.

When responding to an incident or event, suppliers will often undertake additional sampling, which can result in repeated notifications linked to the same event

We received an average of 81 notifications from suppliers each month in 2024. Our records indicate that larger suppliers are generally submitting notifications as required by the Act and taking appropriate action to mitigate any public health risks.

Accredited laboratories must also notify the Authority if testing reveals drinking water samples do not comply with the Standards

Suppliers must use an independently accredited laboratory to analyse water samples. Notifications from laboratories are important as they cover all drinking water samples, including those submitted by unregistered supplies. They are also independent of suppliers and can identify when a supplier has failed to fulfil their duty to notify us. Notifications from laboratories can also alert us to issues before a notification comes through from a supplier.

8 The Drinking Water Standards for New Zealand 2022 set MAVs (or limits) for the concentration of a range of microorganisms, chemicals and radiation which can affect the safety and quality of drinking water. These limits are generally based on guideline values set by the WHO.

The Act requires suppliers to notify us promptly after being notified by a laboratory of an MAV exceedance

There continues to be a large difference between the number of notifications received from suppliers about *E. coli* and chemical exceedances (325), compared to notifications from laboratories (601).[9]

Table 3/4: Notifications of MAV exceedances received from laboratories and registered supplies

Laboratory notifications of MAV exceedances

	Year submitted	
	2023	2024
Notifications	694	601 ↓
Notifications of bacterial exceedances	325	220 ↓
Notifications of chemical exceedances	369	381 ↑

Supply notifications of MAV exceedances

	Year submitted	
	2023	2024
Notifications	383	325 ↓
Notifications of bacterial exceedances	162	101 ↓
Notifications of chemical exceedances	221	224 ↑

While many suppliers are fulfilling their duty to notify us of MAV exceedances, there are 17 suppliers that did not notify us at all in 2024 for one or more of their supplies where an MAV had been exceeded. The exceedances were notified to us by the laboratory. These suppliers are listed in the Appendix to this report. The Act requires suppliers to notify us promptly so that we know that any potential risks to public health are being appropriately addressed.

Consumer advisories

Consumer advisories are used to provide advice to the public when there is a risk to the safety or sufficiency of a drinking water supply. They are designed to raise awareness and provide information on any steps consumers should take to protect their health while the supplier works to remedy the problem. There are four common types of consumer advisories:

- **Boil water advisory:** issued when a contaminant or potential contaminant (e.g. *E. coli*) can be removed/inactivated by boiling the water before use. These are the most common consumer advisories.
- **Do not drink advisory:** issued when boiling the water will not remove the contaminant (e.g. heavy metals), or where it is not practical to boil it (e.g. in schools). In these instances, consumers will need to use an alternate source of water (tankered or bottled) for drinking and food preparation but may continue to use the water for bathing.
- **Do not use advisory:** issued when a chemical contaminant (e.g. cyanotoxin) has been detected that can cause public health risks through general contact with the water, including through bathing – these are rare.
- **Informational notice:** suppliers also issue a range of consumer advisories providing information (e.g. about unplanned interruptions, water restrictions and some chemical exceedances).

9 We may allow a supplier to not notify us of individual exceedances that relate to the same underlying issue, and only notify us once the issue is resolved. This helps to reduce the administrative burden for the supplier. We have not made the same allowance for laboratories. This accounts for some of the gap between supplier and laboratory notifications.

Laboratory notifications of *E. coli* detections

In many supplies across the country the number of *E. coli* exceedances remains high and poses an ongoing risk to public health

We received 220 notifications from laboratories where *E. coli* was detected, down 32% from 325 in 2023.[10] One of the reasons for this is the high number of notifications related to extreme weather events in 2023, including Cyclone Gabrielle and the Auckland floods.

E. coli is a species of bacteria which is commonly found in the intestines of humans and animals. It is relatively easy to test for and is used internationally as an indicator of faecal contamination. The presence of *E. coli* indicates that pathogens which can cause illness may be present in the water.

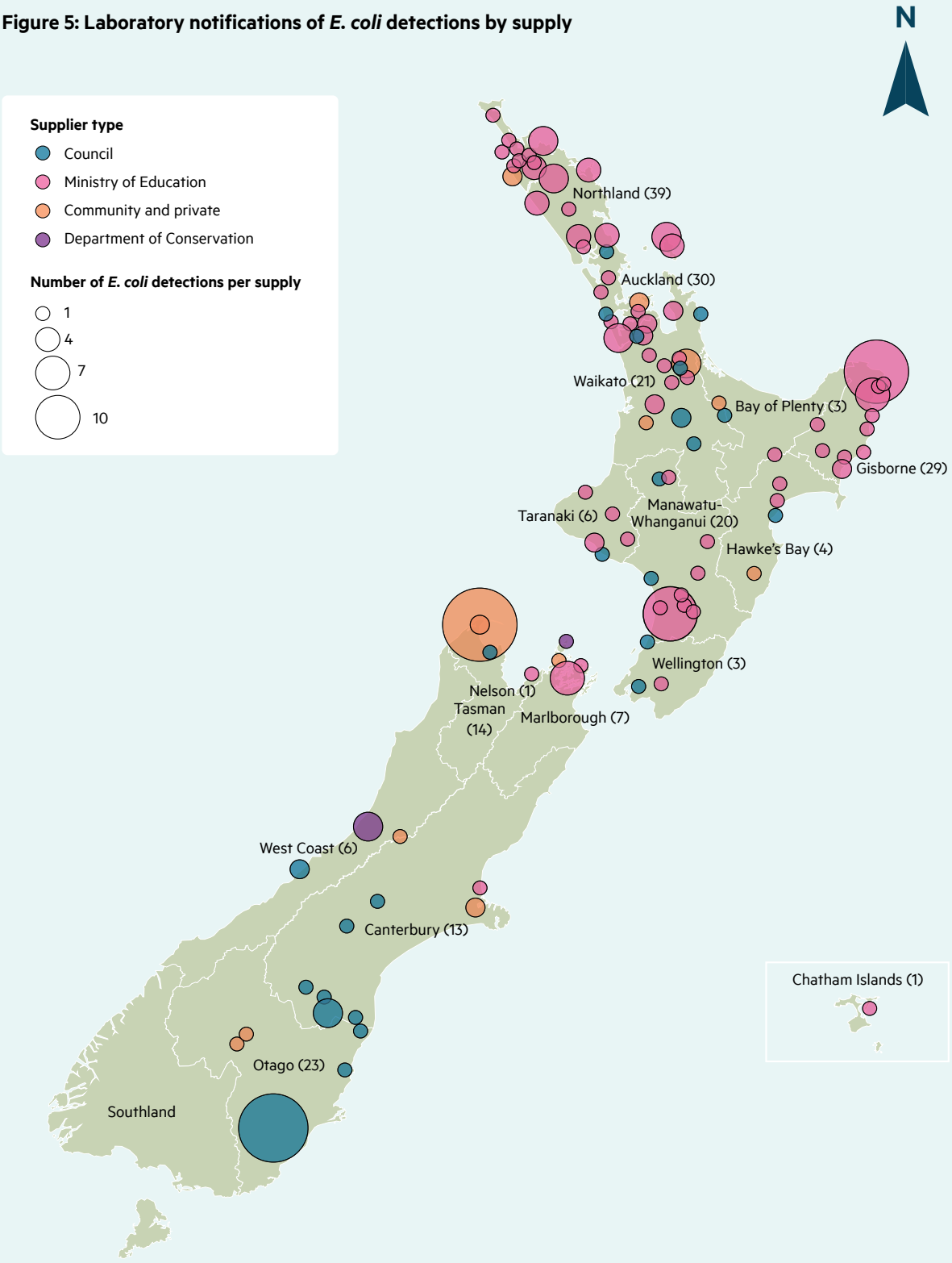
Testing for *E. coli* is helpful to determine if treatment barriers are operating effectively and drinking water is safe. However, since only a tiny percentage of water is tested, and it takes at least 24 hours to receive results, it is important that suppliers always have effective bacterial barriers in place.

Drinking water which is safe and complies with the Standards should not contain pathogens or their indicators. If suppliers become aware that *E. coli* has been detected, our expectation is they will promptly fulfil their duties under the Act. This includes taking steps to protect public health (e..g. through a consumer advisory such as to boil water), investigating the cause and preventing recurrence. Any notification of *E. coli* is serious and requires an effective and timely response and investigation.

More than half of laboratory notifications of *E. coli* detections in 2024 were from self-supplied schools (129 in total). The quality of safety of drinking water in self-supplied schools is covered in a dedicated section of this report.

10 This report includes corrected data for the number of laboratory and supplier notifications of *E. coli* detections 2023.

Figure 5: Laboratory notifications of *E. coli* detections by supply



E. coli detections in council supplies

There were 46 laboratory notifications of *E. coli* from 19 council supplies. While one of these supplies did not have any bacterial treatment, the other 18 supplies had the required bacterial treatment barriers. These *E. coli* detections indicate that the treatment barriers at these council supplies may not be being operated or maintained effectively. Suppliers must ensure that these barriers are continuously effective.

There were a further five *E. coli* detections in a supply operated by the Department of Conservation. This is a surface water supply with no treatment; a long-term boil water advisory is in place.

Thirty-six supplies serving more than 6,720 people in total had two or more laboratory results positive for *E. coli*. Multiple notifications could mean a range of things, including that it is an ongoing event, that a supplier has not met their duty to identify and implement measures to stop the event recurring, or that an unrelated incident has occurred.

The supply with the most *E. coli* notifications was Waitahuna Rural which is owned by Clutha District Council. We received 15 *E. coli* notifications for this supply, which has a long-term boil water advisory in place. The council is working on a new scheme to replace the Tuapeka West, Waitahuna Rural and Lawrence supplies and it is anticipated that this will be online by December 2025.

The risk associated with *E. coli* detections will vary depending on individual circumstances of the supply, such as affected population size, the sampling location, whether the cause of the *E. coli* detection has been identified, the levels of free available chlorine in the system and the effectiveness and timeliness of the supplier's response.

Some suppliers have attributed *E. coli* detections to errors in sampling. The onus is on the supplier to ensure that sample sites are suitable and that samplers are adequately trained or supervised. Suppliers should assume that *E. coli* detections are genuine and take steps to protect public health while they investigate the reason for the detection.

The Appendix to this report gives a list of supplies and indicates if we have received any *E. coli* notifications about each supply.

Laboratory notifications of chemical MAV exceedances

Chemical contamination continues to be an issue for some supplies

In 2024, we received 381 laboratory notifications where a chemical determinand was found at levels exceeding the MAV. This is a slight increase from 2023 where we received 369 notifications.

When drinking water exceeds a chemical MAV, the supplier must determine whether there is significant risk to public health. The risk from chemical exceedances will depend on the toxicity of the chemical, the level of the exceedance and the duration of the exposure. The MAVs for most chemicals are designed to prevent health impacts related to long-term exposure. For this reason, short-term exposure to elevated levels of most chemicals is unlikely to pose an immediate health risk. The MAV for a small number of chemicals including nitrate are 'short term' as they are designed to protect against an acute health risk.

Suppliers should consult public health experts where necessary to determine whether there is an immediate risk and the appropriate advice for consumers. If there is an immediate risk to health, suppliers will generally need to issue a 'do not drink' notice and put arrangements in place to ensure sufficient drinking water is available to affected consumers.

Clutha District Council accounted for 98% (120) of all aluminium exceedance notifications, 16% (27) of all disinfection by-product exceedance notifications and 92% (13) of all notifications we received for chlorine exceedances in 2024.[11]

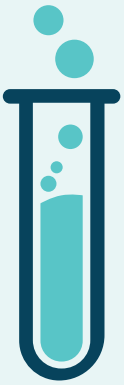
A geographic representation of chemical MAV exceedances, colour coded by chemical, is given below.

As routine chemical monitoring has only been required since 2023 for most supplies, it is possible that some recent notifications relate to long-standing or recurring issues that have not previously been identified.

11 Clutha District Council plans to bring a new drinking water scheme online by December 2025. This will replace the Tuapeka West, Waitahuna Rural and Lawrence supplies which generate many of these notifications.

The table below shows a summary of chemical contaminants for which we received four or more laboratory notifications in 2024.[12]

Table 5: Chemical MAV exceedances notified by laboratories



Chemical determinand	Notifications received in 2023	Notifications received in 2024	Median exceedance 2024 shown as number of times the MAV	Maximum exceedance 2024 shown as number of times the MAV
Aluminium	210	123	1.5	47.7
Arsenic	27	34	1.2	1.4
Disinfection by-products	108	166	varies	varies
Lead	10	28	2.2	16
Manganese	7	9	1.2	4.3
Chlorine	6	14	1.3	2.8
Nitrate, short term	-	4*	1.03	1.18

*** We also received 14 laboratory notifications of nitrate MAV exceedances in samples taken from supplies not registered with the Authority.**

There are three locations where there are repeated exceedances of the MAV for particular chemicals:

Taupō District Council water supplies containing arsenic exceeding the MAV. Arsenic occurs naturally in drinking water and is more common in areas with geothermal activity. Arsenic has been a long-standing issue for some supplies in the Taupō district. We continue to receive notifications of arsenic exceeding the MAV across three of the Taupō District Council's 17 supplies, which serve a total of 4,000 people. The council is implementing a programme of work to address this issue. These interventions have led to a 50% reduction in the number of supplies with notified arsenic exceedances from six in 2023 to three in 2024.

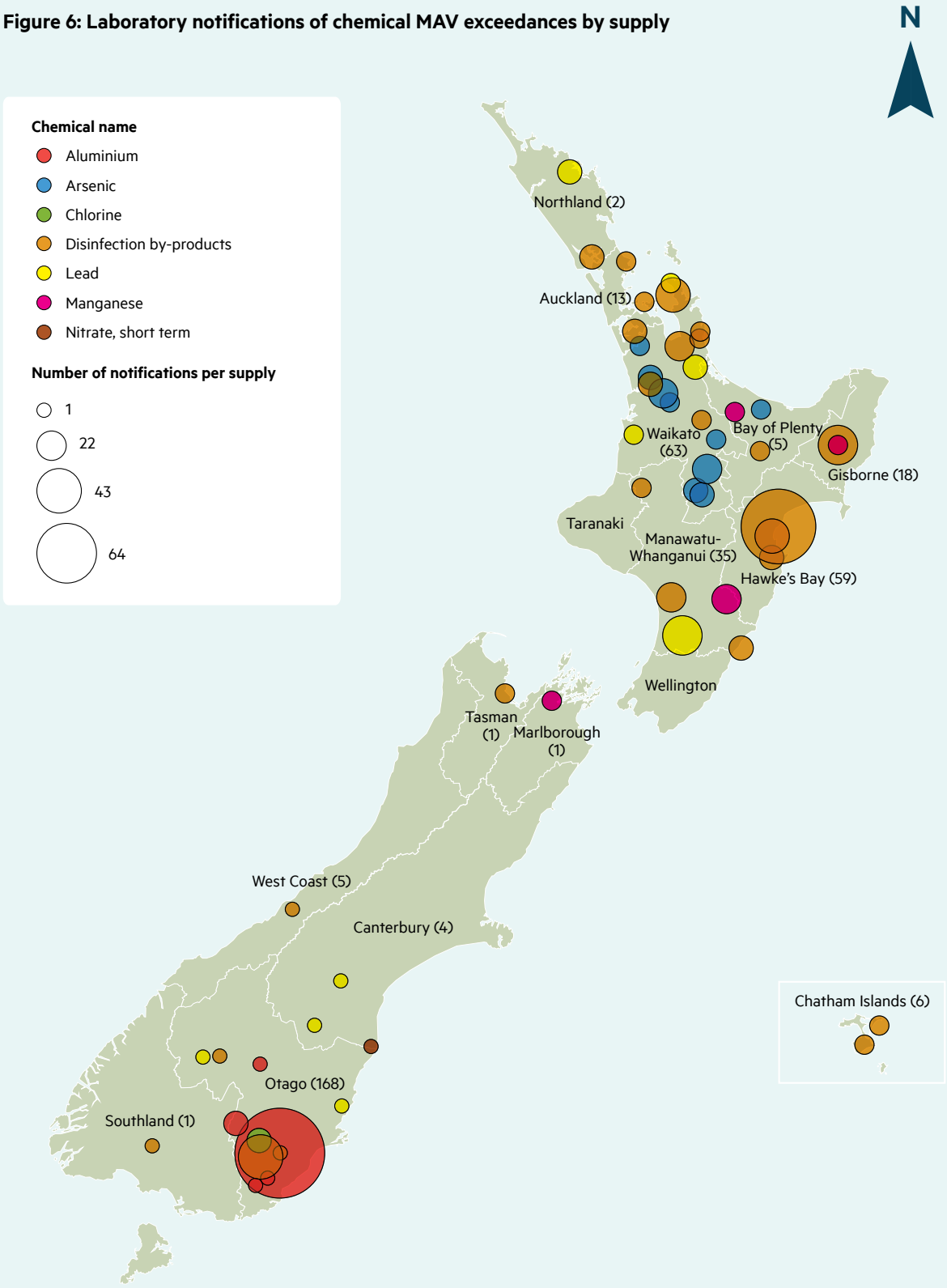
Clutha District Council water supplies containing aluminium exceeding the MAV. Aluminium-based coagulants are commonly added during water treatment. They should be removed through the treatment process so that only small traces of aluminium remain in the treated water. In the last year, we received 120 notifications for aluminium exceeding the MAV across eight of Clutha District Council's 14 supplies, accounting for 98% of all reported aluminium exceedances. This is a reduction from 202 exceedances (across seven supplies) in 2023. In March 2023, we issued a direction to the council and the previous operator of its supplies in relation to elevated aluminium levels in five of its supplies. This direction included a requirement for the council to carry out additional monitoring for aluminium. In the "Drinking Water Supplier Performance" section, we discuss the council's work to meet the requirements of this direction.

Hastings District Council water supplies containing chlorate exceeding the MAV. Chlorate is a by-product that can occur when sodium hypochlorite (liquid chlorine) is used as a disinfectant. In the last year we received 58 notifications of chlorate exceeding the MAV across three of the Hasting District Council's 11 supplies. These supplies serve a total population of fewer than 850 people, with most of the notifications (46) being for a very small community supply with a population of 20. The council has worked with the National Public Health Service to provide health advice to residents and visitors to the worst affected supply. It is progressing a programme of work, including upgrades to its water treatment plants, to address this issue. While there are health risks associated with disinfection by-products, these are small in comparison to inadequate disinfection. Disinfection should not be compromised in attempting to control disinfection by-products.[13]

12 We have grouped disinfection by-products (such as chlorate, dichloroacetic acid and bromate) together to reflect the similarity in the way these chemicals are formed as a product of disinfection processes.

13 World Health Organization (2022). Guidelines for drinking-water quality: fourth edition incorporating the first and second addenda. Geneva: WHO.

Figure 6: Laboratory notifications of chemical MAV exceedances by supply



There were also several significant incidents and events this year which resulted in chemical MAV exceedances:

Elevated levels of arsenic in Waikato/Auckland. In November and December, arsenic levels were slightly above the MAV in treated water drawn from the Waikato River. We received 13 laboratory notifications of arsenic exceeding the MAV across four supplies owned by four councils. An investigation by Waikato Regional Council found that while the total arsenic level in the river had not changed, a change in the form of arsenic meant that the efficiency of the treatment plants in removing arsenic was reduced. All affected suppliers (Auckland Watercare, Hamilton City Council, Waikato District Council and Waipā District Council) carried out daily monitoring for arsenic and took steps to either reduce the concentration of it in their supply or optimise their treatment processes. The last non-compliant sample was taken in mid-December. Work to improve the understanding of arsenic in the Waikato River is ongoing.

This incident highlights the importance of regular source and treated water testing. Changes to source water characteristics can happen at any time and may result in treatment processes being less effective. Regular monitoring helps to ensure suppliers identify when treatment barriers are not operating effectively and quickly, so treatment processes can be amended to ensure ongoing safe drinking water for consumers.

Elevated levels of lead in Horowhenua District Council's Tokomaru supply. In July, we received a notification for a lead exceedance for a sample taken from the distribution system of the Tokomaru supply. This lead exceedance was 2.5 times the MAV. The council confirmed that previous samples had been well below the MAV for lead. We engaged with the council to ensure they were responding appropriately. Additional samples resulted in further notifications for lead and copper exceedances. In August, the council issued a 'do not drink' advisory and provided an alternate supply of drinking water while further investigations were undertaken. The council identified that the wrong sampling methodology was being used, and the source of the lead and copper was the sampling taps rather than the drinking water. In total this event resulted in 18 notifications. There were 15 lead notifications, with the highest 16 times the MAV, and three copper notifications, with the highest just under twice the MAV.

The incident highlights the importance of training and documented procedures for sampling. It also demonstrates the ability of plumbosolvent water to absorb metals from plumbing systems. While "false positives" mean that the water is safe to drink, consumer advisories like in this incident place an unnecessary burden on communities. It is crucial that capability gaps are addressed to reduce false alarms, and to ensure that all exceedances receive prompt attention without sampling errors being assumed.

Elevated nitrate levels in the Lower Waihao rural water supply. In early December, Waimate District Council issued a 'do not drink' advisory for its Lower Waihao supply after nitrate levels in the supply's source water exceeded the MAV. The notice remained in place for several weeks until nitrate levels were reduced by blending the supply's groundwater with water from the Waitaki river. While the 'do not drink' notice was in place, we received two notifications for nitrate exceedances (in the supply's drinking water). We discuss this incident in more detail in the Source Water section of this report.

Waimate District Council had identified elevated nitrate as a risk to this supply and implemented enhanced source water monitoring to detect changes quickly. They communicated with the Authority as the nitrate levels in source water approached the MAV. They were able to respond rapidly, providing an alternate supply of drinking water and updating information for consumers and people in the area with domestic self-supplies.

Nitrates are an emerging concern in source water and treatment to remove nitrate is expensive. Suppliers should be monitoring trends in their source water and local authorities should be considering the risks to domestic self-supplies in their areas.

The Appendix to this report gives more information about the chemical determinands we discuss in this report. It also lists supplies and whether MAV exceedances were notified to us in 2024 by laboratories.

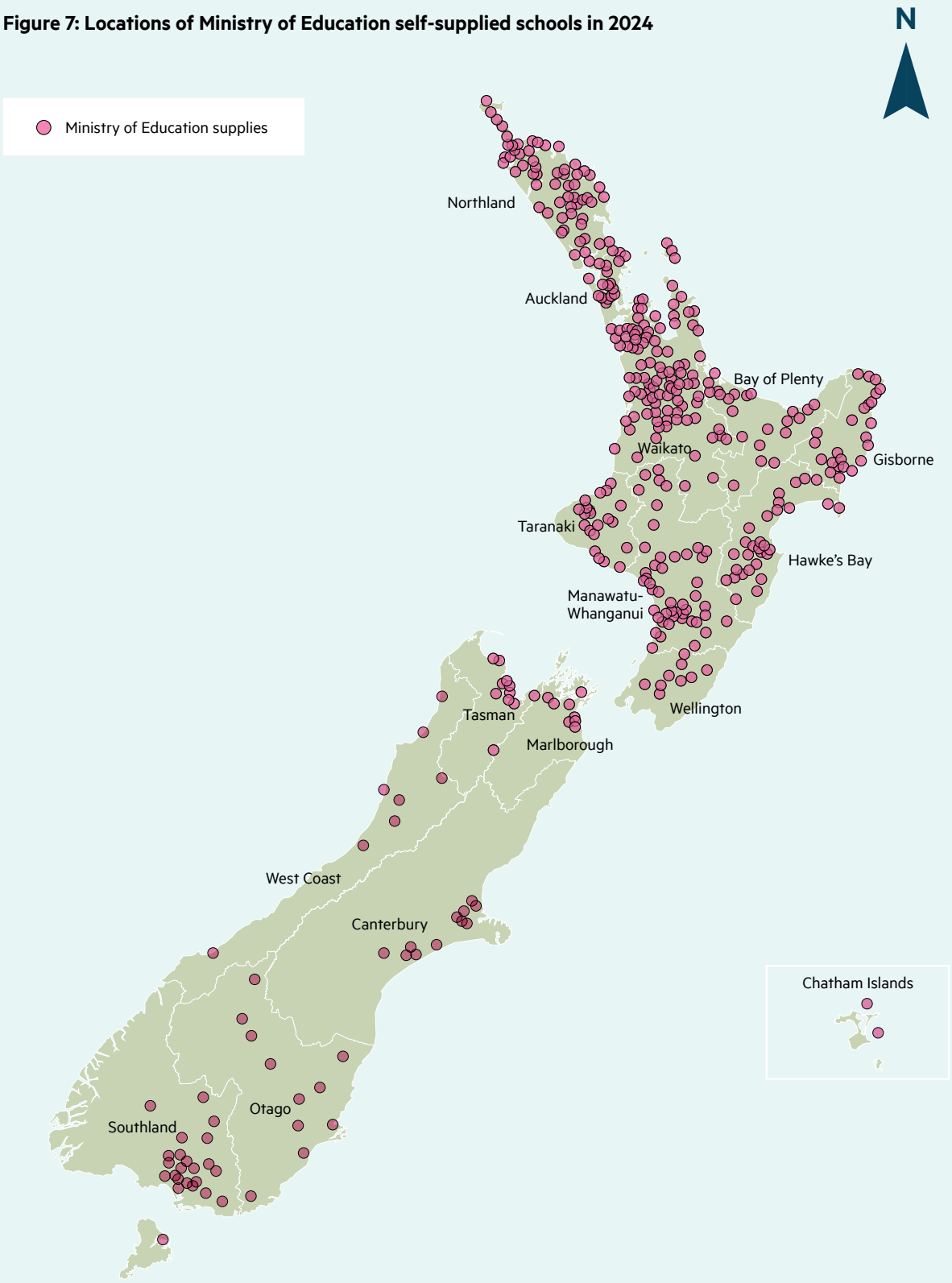
Laboratory notifications of *E. coli* and chemical MAV exceedances in self-supplied schools

Many self-supplied schools do not have demonstrably safe drinking water

The Ministry of Education (MOE) is responsible for 418 schools that supply their own drinking water (self-supplied schools). Nationally, about 19% of all schools self-supply their drinking water. These schools are often located in rural or remote locations. Approximately 81% of schools that self-supply their drinking water are located in the North Island.

The risk to drinking water quality at many self-supplied schools is extremely high, demonstrated by high incidences of water contamination. In 2024, 59% of laboratory notifications of *E. coli* were about self-supplied schools. This affected 71 different school supplies. Twenty-four schools had repeat exceedances of *E. coli* indicating that issues are not being resolved in a way that prevents recurrence. This is a decrease in total notifications from 2023, where *E. coli* notifications affected 81 different school supplies, and 29 schools had repeat exceedances of *E. coli*.

Figure 7: Locations of Ministry of Education self-supplied schools in 2024



The school with the most *E. coli* notifications in 2024 was Te Waha o Rerekohu Area School (11 notifications) in a remote, rural location on the East Coast which serves a total of 110 people. Te Waha o Rerekohu Area School has had ongoing issues with *E. coli* in their supply. The Authority visited the school twice in 2024. During these visits we were able to view the water treatment system and provide guidance to the school's caretaker who was also the plant operator. We remained in constant contact with the school's principal throughout 2024 and provided status updates at monthly meetings with the MOE. With the support of the Ministry, the school upgraded its treatment plant in late 2024, with the last *E. coli* exceedance notification received in August 2024. As a result of this upgrade, the school was able to lift its long-term 'do not drink' advisory.

Schools managed by the MOE accounted for nearly half (45%) of temporary consumer advisories. Most of these are due to *E. coli* detections at self-supplied schools. Consumer advisories are an acceptable short-term measure to manage public health risks at schools, but not a suitable long-term solution.

Although most self-supplied schools have bacterial treatment barriers in place, the high numbers of *E. coli* detections indicate that many of these barriers are likely not being operated or maintained effectively.

Self-supplied schools are required to regularly monitor the quality of their drinking water for microbial contamination. According to the Ministry, 81% of schools that manage their own water tested it for *E. coli* between October and December 2024. This is slightly less than the 84% who did so during the same months in 2023. However, a lower proportion of tests returned an *E. coli* exceedance in 2024 than in 2023.

Source water chemical exceedances

In 2023, the MOE commissioned GNS Science to carry out a study to assess rural school water quality.[14] This study involved testing source water samples from 245 rural schools with groundwater or surface water sources during 2023 and 2024.[15] One water sample was taken for each school. The study found exceedances for five chemicals at 11 schools:

- arsenic (three schools)
- lead (five schools)
- manganese (two schools)
- mercury (one school)
- nitrate (one school).

In 2024, the Ministry commenced a programme of chemical testing at 162 self-supplied schools with roof water sources which returned 145 sample results by the end of 2024. This testing programme found exceedances for two chemicals at three schools:

- lead (two schools)
- copper (one school).

In 2023, we only received one chemical notification from schools, increasing to five in 2024. It is positive to see increased awareness of the risk of chemical contamination at self-supplied schools as a result of these source water testing programmes. We want to see schools with an identified chemical contamination risk continue to test their source water in line with requirements.

Pathways to safe drinking water

The MOE and self-supplied schools have shared duties as drinking water suppliers. Schools are responsible for the day-to-day management of the supply. The Ministry supports schools to manage their drinking water supplies through the provision of training, guidance and support, and allocation of funding for capital works. We are working closely with the Ministry to ensure a range of proportionate pathways are available to schools to comply with the Act. We are also working with the Ministry to ensure that a proportionate approach is taken at each school, and that schools with the highest risk are prioritised first for upgrades.

The MOE has been progressing work to install treatment barriers in 17 self-supplied schools. At the end of 2024, eight of the schools have now met treatment barrier requirements, and eight of the remaining nine have plans for installation or an alternative solution by December 2025.

Thirty-six percent of the Ministry's self-supplied schools have lodged a DWSP, compared to 13% in 2023. This leaves approximately 55% of schools without an identified compliance pathway. Many schools that have not lodged a DWSP are likely to be able to rely on an acceptable solution, which means that they will not need to prepare a DWSP.

We have made our expectations clear to the Ministry to:

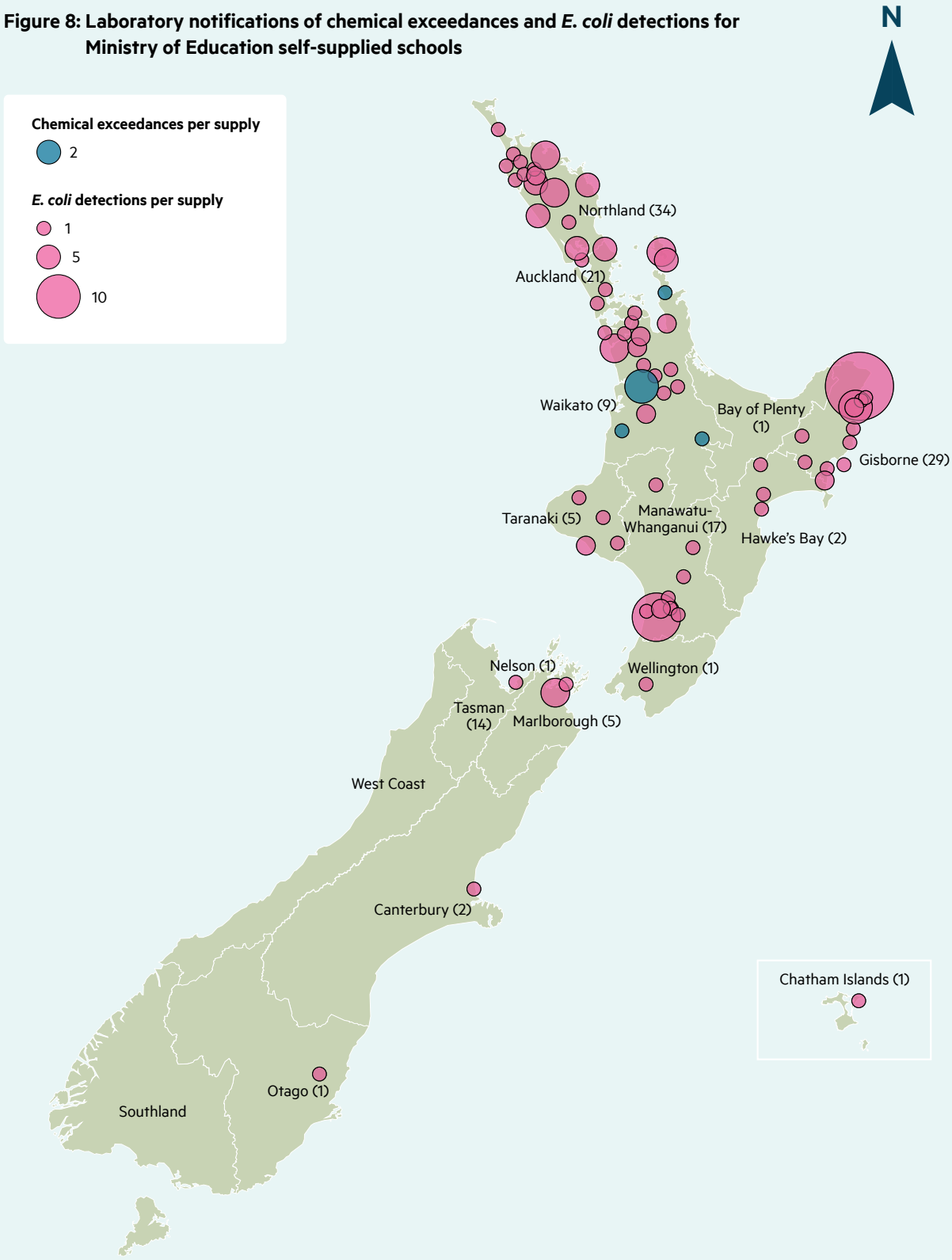
- lift understanding of drinking water safety at self-supplied schools
- improve monitoring and reporting of drinking water quality
- identify schools where infrastructure improvements are required
- identify which of their supplies may be able to rely on an acceptable solution
- understand barriers to drinking water safety at self-supplied schools
- investigate where school supplies might reasonably be connected to council supplies.

On 1 May 2025, we commenced consultation on proposed changes to acceptable solutions, which may make them available to a wider range of small supplies, including self-supplied schools.

14 Rogers, KM. and Lawson, RV. (2023). A National Drinking-Water Quality Survey of New Zealand Rural Schools 2023/2024 GNS Science Consultancy Report 2023/106 August 2024 [Online]. See GNS Science Consultancy Report (Accessed 10 May 2025)

15 Collected samples were alternatively taken from treated tap water where schools were unable to sample prior to treatment.

Figure 8: Laboratory notifications of chemical exceedances and *E. coli* detections for Ministry of Education self-supplied schools



Notifications of drinking water that is, or may be, unsafe

We received fewer notifications that drinking water is, or may be, unsafe than in 2023

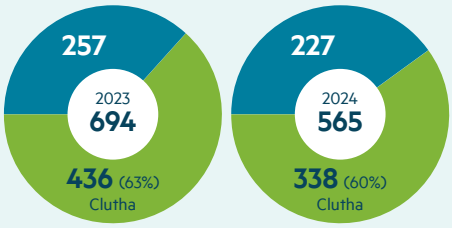
These notifications are submitted by suppliers. They may be linked to a laboratory notification that the water is non-compliant or maybe submitted when there are other indicators that water is, or may be, unsafe (e.g. failure of a treatment barrier or potential contamination in the distribution system).

In 2024, we received 565 notifications that drinking water is, or may be, unsafe. This is 128 fewer than the 693 notifications we received in 2023. This was largely due to a reduction in notifications received from Clutha District Council – from 436 in 2023 to 338 in 2023.

In the "Sector Performance" section, we discuss the direction we issued to Clutha District Council as a result of the aluminium levels in its supplies.

Figure 9: Notifications from registered supplies that drinking water is, or may be, unsafe

	2023	2024
Supply notifications	694	565 ↓
Clutha notifications	436	338 ↓



There were a wide range of reasons for communities being provided with drinking water that may be or is not demonstrably safe

The top three most common reasons for supplier notifications that water is, or may be, unsafe were low FAC (Free Available Chlorine), a chemical exceedance and *E. coli* detections. Other common issues include high turbidity events, detection of high levels of disinfection by-products, and system failures at the treatment plant or distribution network leading to reduction in water quality.

Some causes of unsafe water can be outside of a supplier's control, such as extreme weather events. In these situations, the supplier will need effective response and contingency plans to help manage the response. However, many causes of notifications of unsafe water are avoidable. Figure 10 provides examples of events and the main cause. The underlying reasons can be related to capability issues. Suppliers should be undertaking investigations to understand the root cause of incidents and taking action to prevent recurrence.

Scenarios of the kind listed in the infographic below do not mean that the entire population served by a supply are at risk. Frequently, only one zone served by a supply or a limited number of consumer properties will be affected, rather than all consumers.

Figure 10: Examples of the main cause of notifications that drinking water is, or may be, unsafe

In the "Sector Capability" section, we discuss examples of events and incidents where capability was a likely contributing factor.

Tararua District Council

In April 2024, the Authority issued a direction to the Tararua District Council after a series of incidents where dead possums were found in a treated drinking water reservoir for the Woodville supply.

Following two earlier incidents, boil water advisories were issued and the council notified the Authority that the drinking water is, or may be, unsafe. However, in April 2024, no boil water advisory was issued, and the Authority was not notified that the drinking is or may be unsafe.

Our direction included a requirement that the council issue a boil water advisory each time an animal that poses a public health risk is identified in the Woodville treated drinking water reservoirs. The direction remains in place.

After the April 2024 incident the Authority commenced an investigation which resulted in us issuing an employee at the council with a written warning. This is the first time we have issued a written warning.

Our investigation found that the employee did not report the dead possum, and in doing so, failed to follow the escalation process in the council's DWSP procedure. This led to a possible breach of s 192 (offence for failing to comply with duty to exercise due diligence) of the Act.

This incident highlights that it is not only suppliers who have obligations under the Act. Staff employed by the supplier also have obligations including due diligence. Suppliers should ensure that their staff know the importance of pest management, how to escalate when a pest or pest remains are found, and what appropriate action should be taken to protect public health.

The council has carried out remedial work to improve pest management around the reservoir and have brought forward funding to make improvements that would prevent pests entering the system.

Consumer advisories active in 2024

Too many suppliers are managing risk through long-term consumer advisories

There were 106 temporary consumer advisories active during 2024 and 92 long-term consumer advisories.[16] Long-term consumer advisories are generally used when there is ongoing risk associated with the supply (e.g. when they lack a required treatment barrier for bacteria or protozoa).

The purpose of consumer advisories is to make consumers aware of a risk to the safety or sufficiency of a drinking supply and any actions they should take to protect their health. While they can be an effective safety measure over short timeframes, they are not a substitute for effective treatment. They place the burden of providing safe water on the consumer and the use of consumer advisories over extended periods can reduce their effectiveness and potentially result in dangerous situations where consumers drink demonstrably unsafe water. Research indicates the efficacy of consumer advisories declines rapidly if advisories become normalised (i.e. over a matter of weeks advisories will begin to be ignored by consumers and they may start drinking the water without boiling it)[17] There is also an increased risk that visitors to the area will not be aware of the advisory.

16 There isn't any specific time threshold associated with a 'long-term' consumer advisory. We use the term to refer to advisories that remain in place for more than a transient period while steps are taken to address the underlying safety issue, depending on the circumstances affecting each supply.

17 Community and Public Health West Coast (2008). Efficacy of boil water notices on consumers (Online). See https://www.cph.co.nz/wp-content/uploads/efficacyboilwaternotices (Accessed 19 May 2025)

Table 6: Consumer advisories 2023 vs 2024

	Boil Water	Do Not Drink	Do Not Use	Informational Notice	All
Long-term 2023	105	7	0	-	112
Temporary 2023	93	23	2	-	118
Long-term 2024	96[17]	12	0	5	92 (+21)*
Temporary 2024	52	40	5	9	106

* 21 Department of conservation supplies now covered by an exemption.

Most (88) of the temporary advisories above were closed by the end of the year, with 46 being in place for two weeks or less.

Table 7: Registered supplies with a temporary advisory active during 2023 vs 2024

	Boil Water		Do Not Drink		Do Not Use		Informational Notice		All	
	2023	2024	2023	2024	2023	2024	2023	2024	2023	2024
Council	46	34 ↓	0	4 ↑	0	1 ↑	–	9 ↑	46	48 ↑
Department of Conservation	1	1	0	0	0	0	–	0	1	1
Ministry of Education	16	9 ↓	18	35 ↑	2	4 ↑	–	0	31	48 ↑
New Zealand Defence Force	–	2 ↑	–	0	–	0	–	0	–	2 ↑
Community and Private	7	6 ↓	2	1 ↓	–	0	–	0	9	7 ↓
All	70	52 ↓	20	40 ↑	2	5 ↑	–	9 ↑	87	106 ↑

Where a supply has a more than one type of consumer advisory this will be counted only once in the columns showing all consumer advisories.

The long-term advisories are made up of 93 that were in place before 2024, and 20 initiated in 2024. Eighteen long-term advisories were closed and 21 are now covered by an exemption granted to the Department of Conservation, leaving 74 long-term advisories in place at year end.

There were 20 active long-term advisories for council supplies that have been in place for three or more years as at the end of 2024. Sixteen of these council supplies lack one or more critical safety barriers. In the Appendix to this report, we list these supplies. We discuss our work to address the lack of safety barriers in the "Sector Performance" section of this report.

18 Included in this count are the long-term advisories for 21 Department of Conservation supplies, which are required as a condition of a general exemption granted in 2024.

These long-standing advisories often reflect deeper structural challenges including funding constraints, technical capacity limitations and governance issues, particularly in smaller communities. As we work toward resolution of these cases, the Authority will balance firm timelines for implementation of permanent solutions with pragmatic recognition of capacity constraints. We will continue to support smaller communities to understand what it reasonable and achievable. However, where there is no clear pathway to resolution, we may use our enforcement tools to require action from suppliers.

Interruptions to supply

Drinking water suppliers (other than water carriers) are responsible for providing a sufficient quantity of drinking water to meet the ordinary drinking and sanitary needs of consumers who use their supply.

If a supplier plans to interrupt the supply of drinking water for more than eight hours, they must get prior approval from the Authority and take all practical steps to advise affected consumers.[19] The supplier must also make arrangements to ensure that a sufficient quantity of drinking water is available to affected consumers through an alternative supply (such as a water carrier) or bottled water.

Good planning practices can reduce the burden of major works, which take longer than eight hours to complete, on affected consumers

While alternative water supplies can present additional risks that need to be managed, their availability helps ensure consumers have ongoing access to safe drinking water while regular supply is restricted or interrupted.

There were 17 notifications of planned restrictions or interruptions lasting between 11 and 12 hours in 2024, compared to 22 notifications in 2023.

Suppliers must also notify us if, due to unforeseen circumstances or an emergency, the supply of drinking water will be interrupted for more than eight hours. Suppliers must advise us of the reason for the interruption no later than 24 hours after the supply was interrupted and take all practicable steps to advise affected consumers. The supplier must also ensure that a sufficient quantity of drinking water is available to affected consumers through an alternative supply.

Unplanned restrictions or interruptions to supply for long periods of time may result in a significant burden to a community. Some events are unpredictable and inevitable, but having planned responses to mains breaks and other urgent repairs to efficiently restore access to the normal supply of drinking water can help to limit the impact on communities.

19 Section 25(4) of the Act.

In 2024, 23 suppliers notified us of 136 instances of unplanned events occurring in 44 supplies. Outages lasted 24 hours on average, with the maximum unplanned outage lasting 21 days. In 134 of the total unplanned events, suppliers were unable to maintain sufficient supply of water. Only in two of the unplanned events was an alternative water supply provided to consumers.

Drinking water safety plans

The Act requires each registered drinking water supply owner to prepare and implement a DWSP for their supply and to lodge a copy of their plan with us. Suppliers that choose to follow an acceptable solution or that have a general exemption do not need to prepare a DWSP. DWSPs are a risk management tool that outlines how suppliers aim to ensure a safe, reliable and resilient supply of drinking water. They focus on identifying, assessing and managing risks across the whole drinking water supply system, from where the water is sourced to the point of supply to consumers. Among other things, a DWSP must include a multi-barrier approach to drinking water safety, identify how the supplier will respond to events and emergencies, and comply with the Rules.

The proportion of supplies that have lodged a drinking water safety plan with us increased from 59% of supplies (795) in 2023 to 74% (993) in 2024.[20] One hundred and ninety-seven of those plans were newly lodged in 2024.

Figure 11: Supplies that had a drinking water safety plan – 2022-2024

Figure 12: Supplies that did not have a drinking water safety plan – 2022-2024

20 Supplies that are required to prepare and implement a drinking water safety plan and are not following an acceptable solution or do not have a general exemption.

Figure 13: Supplies that have not lodged a drinking water safety plan out of those required to have one – supplies

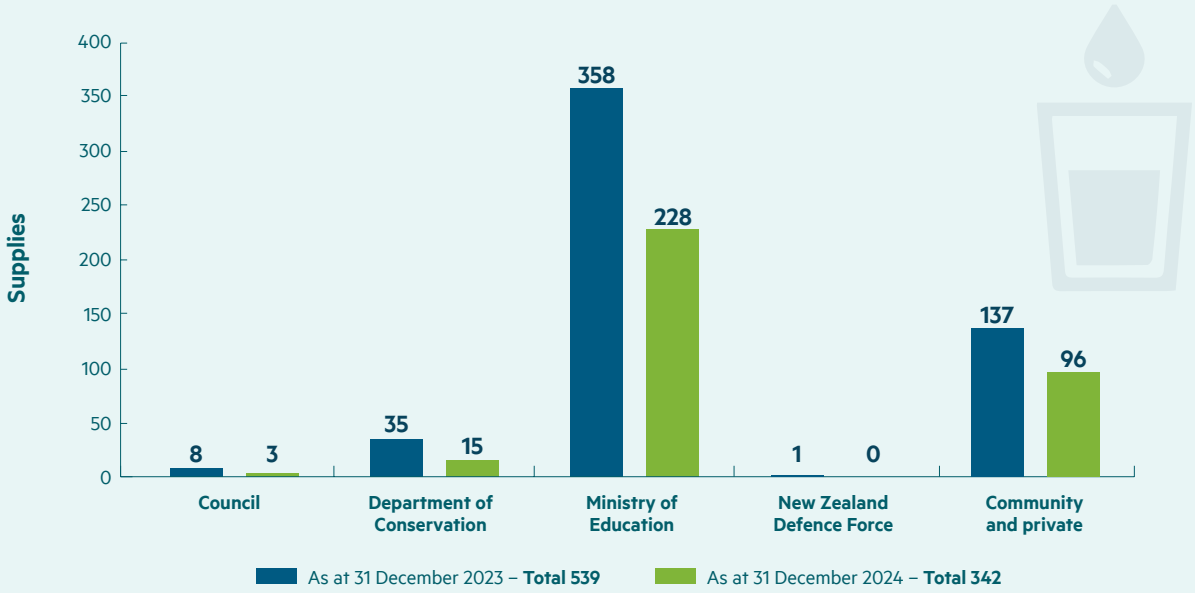
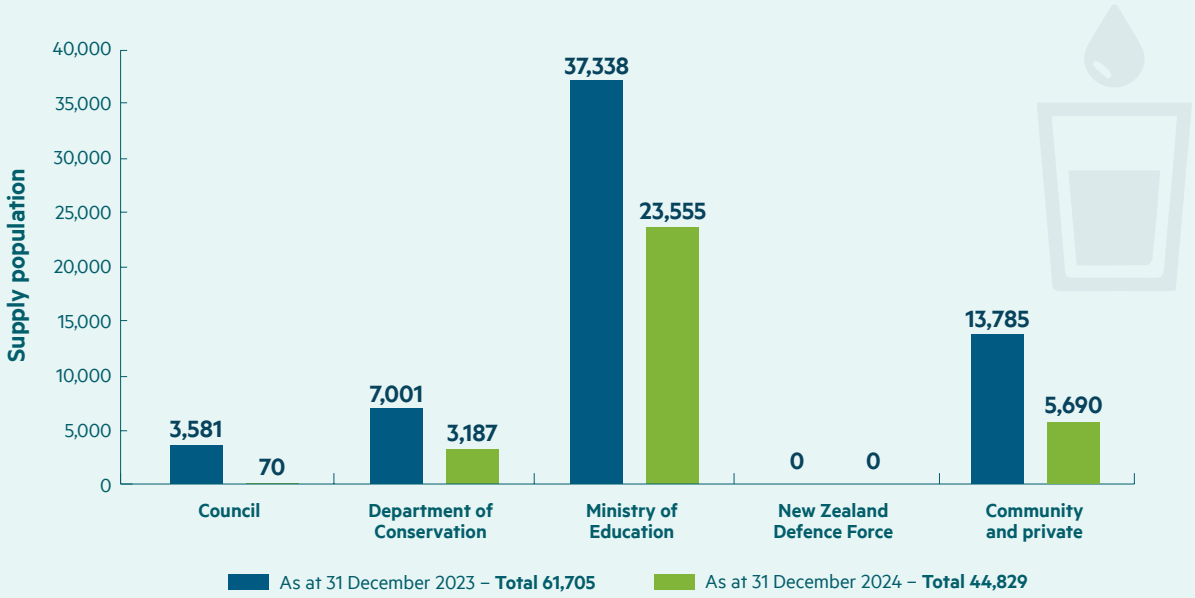


Figure 14: Supplies that have not lodged a drinking water safety plan out of those required to have one – population



The Department of Conservation (DOC) has reduced the number of supplies requiring a DWSP from 92% in 2023 to 29% in 2024. This is due to the general exemption we granted in 2024 to 686 DOC backcountry huts and campsites, including 20 registered supplies that previously required a DWSP.[21]

We discuss community and private supplies in the "Community and Private Supplies" section of this report.

21 The remainder of the supplies covered by the exemption are unregistered supplies that are due to register with the Authority by November 2025.

Reviewing drinking water safety plans

The Act requires us to review DWSPs, including for compliance with legislative requirements, based on the scale, complexity and risk profile of drinking water supplies. Our review of DWSPs must be in line with an approach outlined in our CME Strategy. We review DWSPs but we do not otherwise approve or certify them. Reviewing DWSPs is one of the regulatory tools we use to identify if suppliers are effectively managing the risks in their supply.

In 2024, we continued to review DWSPs for council-owned and large government supplies.

The information gathered in our reviews helps us to:

- identify common issues and opportunities for improvement
- identify if good risk management practices are being followed
- identify where there may be significant unmanaged risks with a supply
- improve our understanding of the sector.

We have refined and refocused the scope of reviews to ensure there is a continued focus on the highest risk supplies. This will be covered in next year's report.

Table 8: Number of drinking water safety plan reviews completed in 2024

Supplier category	Total completed reviews	Educational feedback	Monitoring arrangements put in place	Monitoring completed
Council	92	42	37	5
Department of Conservation	2	2	0	0
Department of Corrections	1	0	1	1
New Zealand Defence Force	1	0	0	0
Community and private	3	2	1	0
Total	**99**	**46**	**39**	**6**

Acceptable solutions

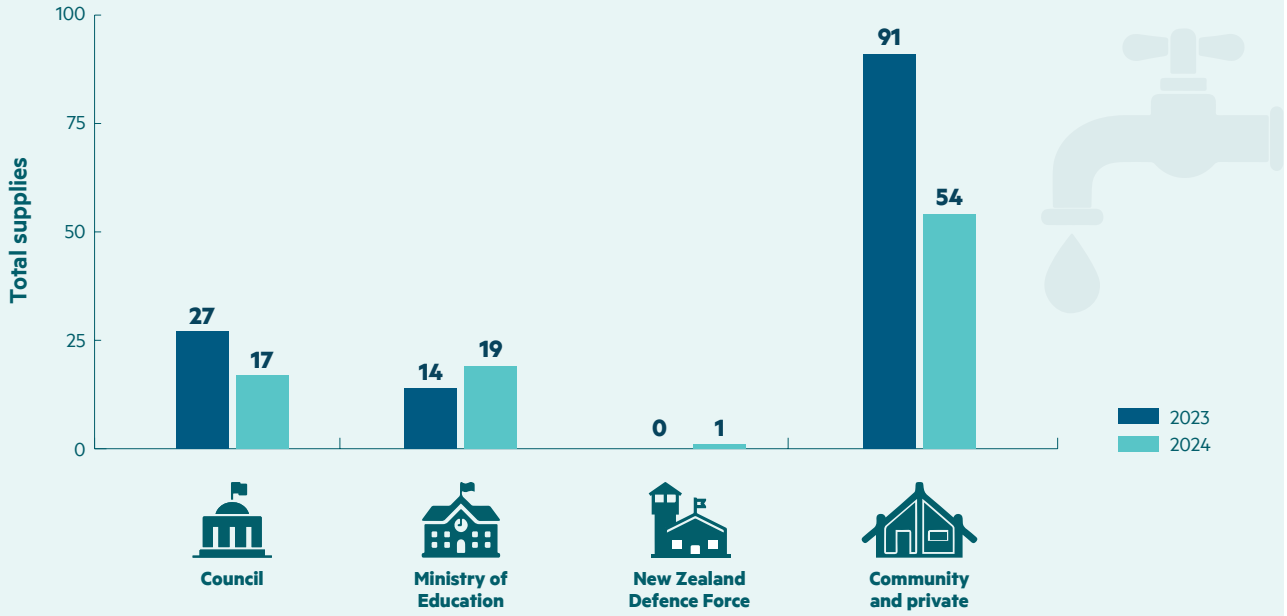
Acceptable solutions provide a practical and cost-effective compliance option for some drinking water supplies. They allow for water to be treated for bacteria, protozoa and viruses at the end-point of a supply (often at each house or building) removing the need for residual disinfection. This also removes the need for centralised treatment which may not be a cost-effective solution for small supplies.

For the period covered by this report, the Authority had three acceptable solutions: mixed-used rural supplies, roof water supplies, and spring and bore water supplies. The Authority has recently consulted on changes to the acceptable solutions to make these more accessible. Any changes to the acceptable solutions will be reflected in future reports.

Suppliers that follow an acceptable solution do not have to comply with Rules or prepare a DWSP or source water risk management plan (SWRMP). They must still register, supply safe drinking water and notify us if their drinking water is, or may be, unsafe or if a MAV is exceeded.

As at 31 December 2024, 91 supplies had adopted acceptable solutions. This includes 54 community and private supplies, 17 council supplies and 20 government supplies.

Figure 15: Supplies that have adopted acceptable solutions



The number of supplies using an acceptable solution has decreased – from 132 in 2023 to 91 in 2024. One of the reasons for this is suppliers choosing to lodge a DWSP and comply with the Rules for the supplies they manage, rather than adopting an acceptable solution.

Exemptions

General exemptions

A drinking water supplier can apply for a general exemption to become exempt from most requirements of the Act. General exemptions are intended for situations where it may be unreasonable or impractical for a supplier to comply with legislative requirements (e.g. where a supply may not have sufficient road access or electrical power to install and run treatment equipment). General exemptions may include conditions, such as implementing signage and boil water notices to inform consumers that the water is not safe to drink.

To support consideration of an exemption, suppliers must explain to us how an exemption will be consistent with the main purpose of the Act, which is to ensure that suppliers provide safe drinking water to consumers. They also need to explain how they would manage risks affecting their supply.

We expect to see an increase in exemption applications as more suppliers, especially smaller communities, become aware of their duties under the Act and work to address issues. We will have an increased focus on providing more guidance and outreach to smaller communities.

We received one general exemption application in 2024.[22] One application that was received in 2023 was approved.

The general exemption we granted applies to 686 DOC backcountry huts and campsites. The huts and campsites covered by this exemption are basic backcountry facilities in mostly remote locations. They have low and seasonably variable occupancy rates and are infrequently attended by staff or agents. Operating treatment plants at the sites would be impracticable due to insufficient power supply and difficulty maintaining solar power equipment. The drinking water in these locations is usually rainwater collected from roofs and held in tanks, or surface water collected from nearby waterways.

We considered it would be impracticable and disproportionate to the risks of the sites to have to satisfy all duties in the Act. The conditions of the general exemption ensure that the sites will operate in a way that is consistent with the main purpose of the Act. These conditions include requiring clear signage to be displayed advising people to boil water before drinking it and having specific website information for huts and campsites where boiling water is required. DOC must also carry out regular maintenance checks and undertake any necessary repairs as soon as reasonably practicable.

22 This application, for two Department of Conservation supplies, was approved in early 2025 and will be reported on in next year's report.

Residual disinfection exemptions

A supplier can also apply to be exempt from residual disinfection requirements in a supply that includes reticulation. A residual disinfection exemption may apply to all or part of a supply.

To grant a residual disinfection exemption, we must be satisfied that:

- The exemption will be consistent with the main purpose of the Act, which is to ensure that drinking water suppliers provide safe drinking water to consumers
- The supplier's drinking water will comply with all other legislative requirements (including their DWSP) on an ongoing basis.

A residual disinfection exemption does not exempt a water supplier from any other treatment requirements.

In 2024, we received no new residual disinfection exemption applications. One application that was lodged in the previous year was approved. One application could not be granted because it requested exemption from a treatment process that is not an aspect of residual disinfection and therefore not eligible for an exemption.

We had one application under consideration as of 31 December 2024. We requested further information from the supplier to support our assessment, which was provided in late 2024.

For more information on why we granted and declined exemption applications, you will find all of our decision papers published on our website.

Part two:
Source water

In this part, we look at source water monitoring results from suppliers reporting on the Drinking Water Quality Assurance Rules.

This is the second year that suppliers have been required to report against the Rules for source water. **This information is self-reported by suppliers. We do not verify suppliers' reports to us on their compliance with the Rules.**

The data shows that there has been an increase in reporting rates and that more supplies are meeting the source water monitoring requirements. Sample results demonstrate that while *E. coli* detections are more common in surface water, all source water types are susceptible to contamination, even deep bores. A small number of source water samples had nitrate levels above the MAV, compared to no samples in 2023. However, the percentage of samples with nitrate levels above 50% of the MAV has reduced from 2023.

Every source of drinking water has its own unique characteristics that need to be understood by suppliers

'Source water' is the water body where water is abstracted for use in a drinking water supply such as rivers, streams, lakes and underground aquifers. Rainwater can also be source water.

The primary purpose of drinking water treatment is to remove hazards from the abstracted source water or reduce them to a level that is safe for consumption. Understanding the source water, including seasonal variation (such as heavy rain and storms) and emerging hazards, is crucial as it can advise the treatment processes and impact the quality and quantity of the drinking water. Source water is often grouped into source types (surface water sources, ground water and rainwater).

Ideally suppliers want source water to be of both a stable quality and quantity to allow the supply to consistently meet consumer demand. However, as variations in quality and quantity are inevitable, suppliers should plan for foreseeable changes.

Source water risk management plans

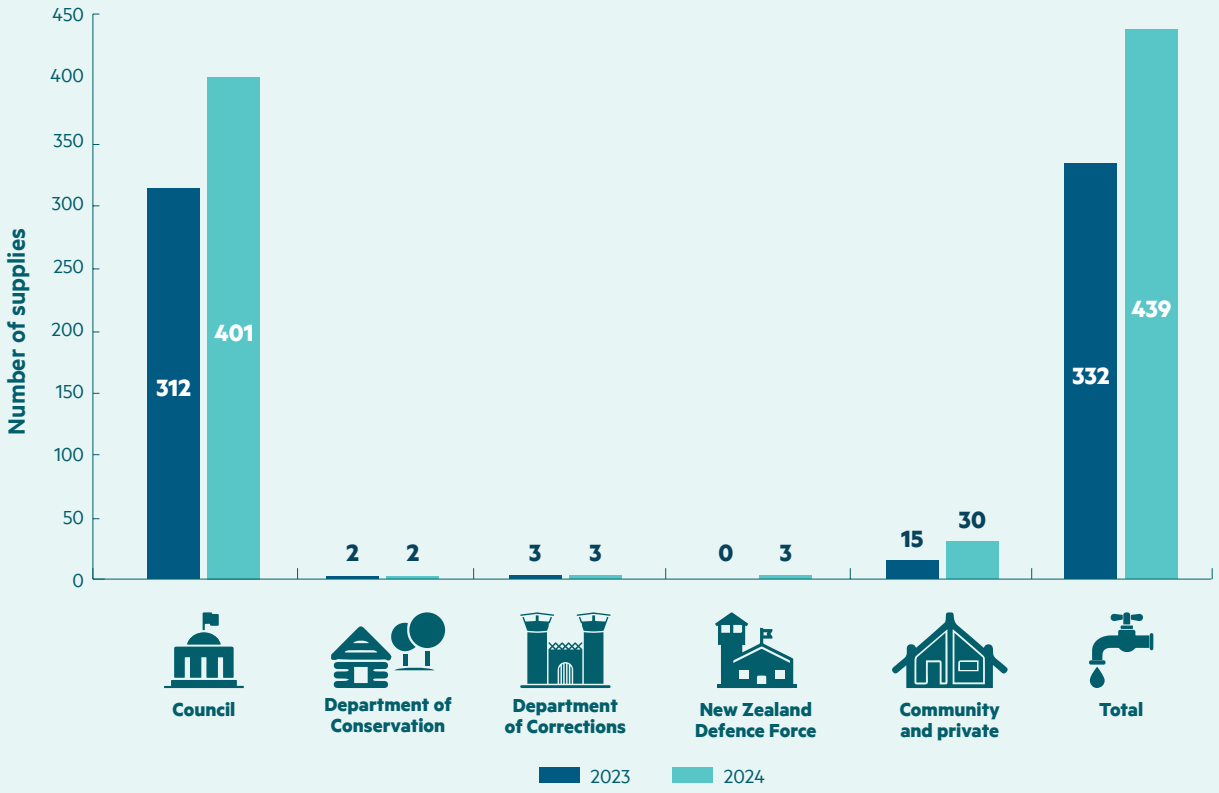
Suppliers must know about the hazards and risks to their source water, and have a plan for how they will deal with them

The Act requires suppliers to prepare and implement an SWRMP as part of their DWSP, identifying the hazards and risks associated with source water and how these will be managed by the supplier. SWRMPs support a long-term understanding of the health and wellbeing of source water. A supplier does not have to complete a SWRMP if they have adopted an acceptable solution, obtained a general exemption or they do not directly abstract from a source (e.g. some water carriers abstract from large supply networks).

The Act recognises the role of local authorities in relation to source water under other regulatory regimes, particularly the functions of regional councils in relation to water takes, discharges and environmental monitoring under the Resource Management Act 1991. Local authorities must contribute to the development and implementation of SWRMPs prepared by suppliers.

In the "Drinking Water Safety" section of this report, we noted that the number of DWSPs lodged by suppliers continued to increase in 2024. We also discussed our continued work to review DWSPs. These reviews include confirming whether the supply has included a SWRMP as part of its DWSP. The Act requires suppliers to continue to review and update the risks in their SWRMPs in light of any changes to the water bodies and their catchments or as more information is gathered to assess risks.

Figure 16: Registered supplies with source water risk management plans submitted by supplier – 2023 vs 2024



Source water sufficiency

Suppliers must consider source water sufficiency

Prolonged dry weather conditions can reduce the volume of water available in sources and may also lead to an increase in demand for drinking water. This can lead to water shortages and restrictions on use, particularly when accompanied by high rates of water loss (e.g. through leaks). Suppliers should consider how loss or shortage of source water could impact drinking water and, if necessary, take action to mitigate these risks.

When water shortages arise a standard approach to these limitations is for a water supplier to impose water restrictions. The Network Environmental Performance Report 2023/24 includes analysis on the total number of days with water restrictions as reported by public water supply network operators.

Source water monitoring

Effective source water monitoring enables water suppliers to take action early to manage and protect their water supply

The Rules require suppliers to test for determinands (such as *E. coli* and arsenic) which are commonly found in source water. Source water monitoring requirements are proportionate to the population supplied, and therefore the smaller the supply the less source water monitoring required. The Rules also require suppliers to consider and monitor for any other determinands that they identify in their risk assessments.

Source water monitoring for supplies serving fewer than 500 people is generally through water samples that are sent to laboratories for analysis. Most large supplies are also required to conduct continuous monitoring for conductivity, pH and turbidity.[23]

Sampling provides information on hazards in source water and allows changes over time to be detected. Continuous monitoring provides real-time information on the composition of the water and can be linked to treatment systems, allowing dosing to be tailored to the incoming water quality.

23 Continuous monitoring of these parameters is not required for class 1 or interim class 1 sources.

Cyanobacteria risk categorisation

More supplies are assessing their cyanobacteria risk

The Rules require suppliers to assess the cyanobacteria risk to each of their supplies that report against the Level 2 or Level 3 source water rules.[24] If the risk is medium or high, additional requirements apply. Suppliers are also required to update this risk assessment in their source water registration details on Hinekōrako, our online supplier portal.

Most (79%) council supplies are meeting their requirements to undertake a cyanobacteria risk assessment. This compares to 70% of council supplies in 2023.

Figure 17: Council supplies meeting cyanobacteria risk assessment – percentage of supplies

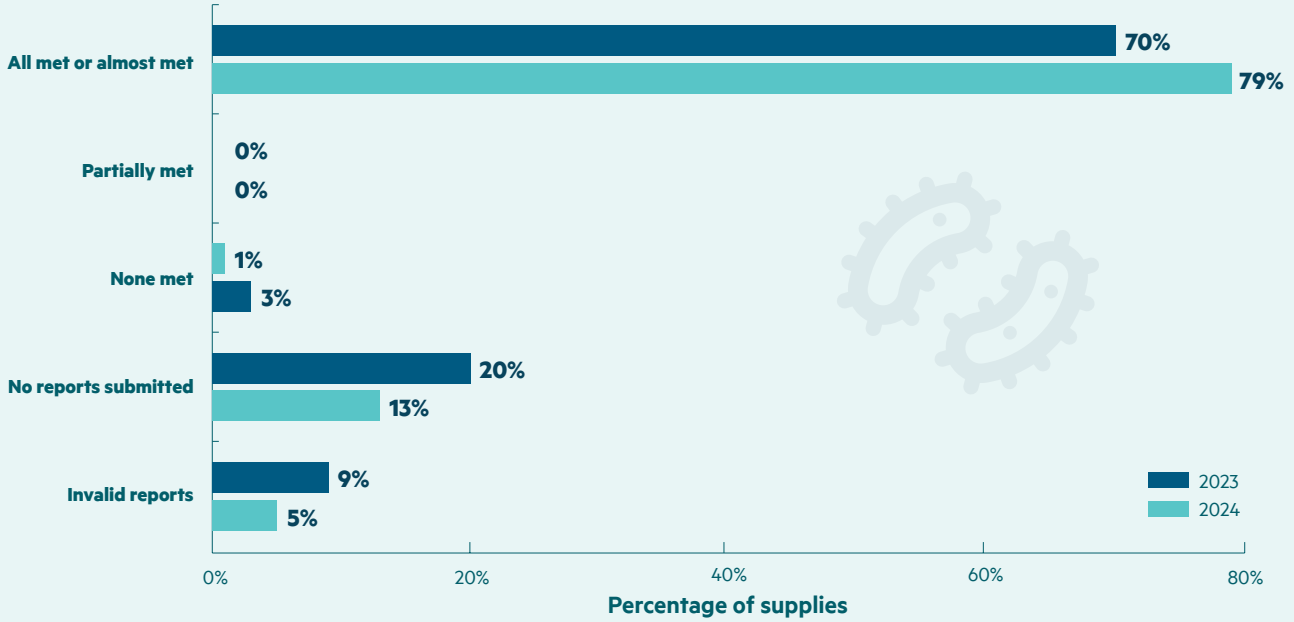
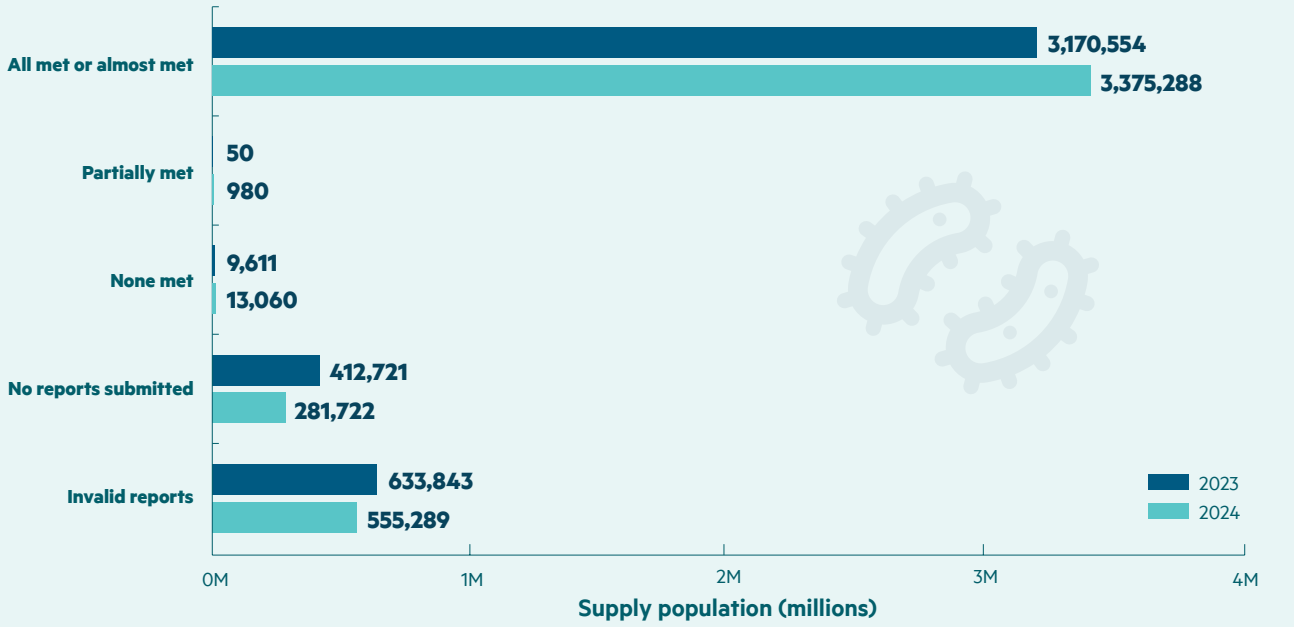


Figure 18: Council supplies meeting cyanobacteria risk assessment – population



24 Cyanobacteria, also known as blue-green algae, are micro-organisms that live in freshwater and marine environments. Some cyanobacteria produce toxins (cyanotoxins), which are harmful to humans and animals. In drinking water these toxins can pose an immediate and serious health risk. Risks to source water are higher when there are large numbers of cyanobacteria, which could be due to blooms or mats that form under the water.

Councils' assessment of the cyanobacteria risks of their source water

The figures below shows the outcomes of councils' cyanobacteria risks assessments of their sources (by source type).[25]

Figure 19: Outcomes of councils' cyanobacteria risk assessment of their sources – 2023

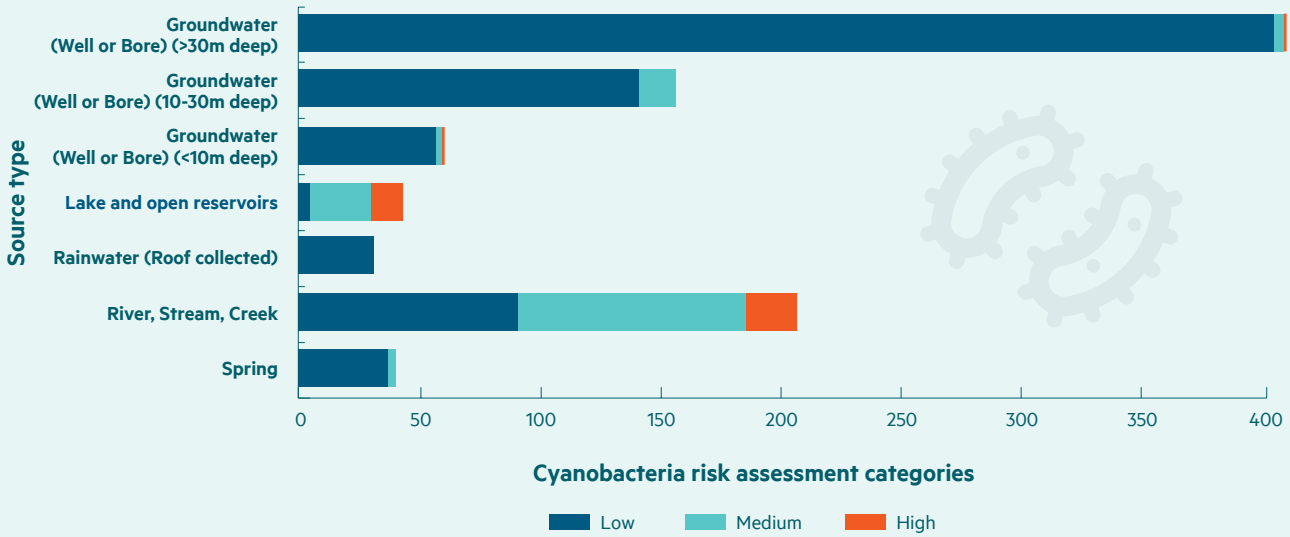
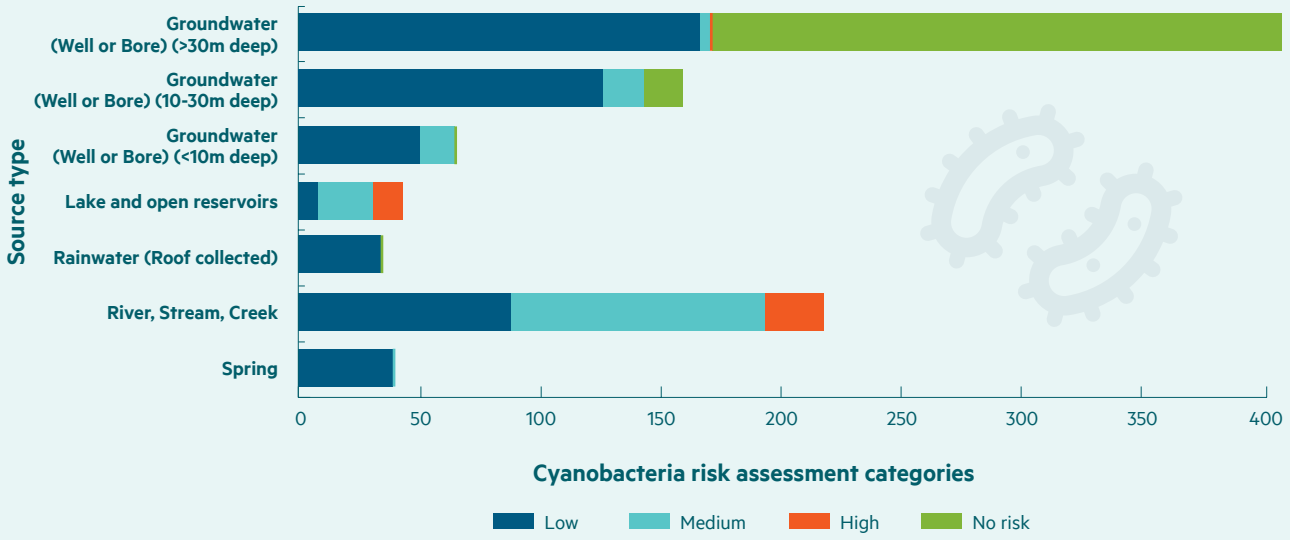


Figure 20: Outcomes of councils' cyanobacteria risk assessment of their sources – 2024



Most council surface water sources continue to be assessed as being medium or high risk of cyanobacteria. The remaining 96 surface water sources were assessed as being at low risk of cyanobacteria, similar to results in 2023. It is good practice to consider surface waters to have at least a medium risk of cyanobacteria and cyanotoxins, especially as they continue to become more prevalent. Where suppliers consider their surface waters to be low risk for cyanobacteria and cyanotoxins, supporting evidence would be expected.

Now that there is an additional option to register sources as having no risk of cyanobacteria, some councils have updated the risk assessment of their bores over 10m deep to this status.[26] Bores are not generally at risk of cyanobacteria unless they are shallow bores extracting shallow groundwater near surface water sources.

25 This information was provided by suppliers as part of the registration information for supplies. It is not a reporting requirement under the Rules.

26 Following a review of the Rules for supplies serving 500 or fewer people in 2024, the registration portal in Hinekōrako was changed to allow suppliers to indicate that the cyanobacteria assessment indicates that there is no risk associated with a source.

In 2024, we completed several initiatives to improve supplier understanding of cyanobacteria and cyanotoxins risks. We held a cyanobacteria workshop alongside Water New Zealand to discuss cyanobacteria risks to suppliers. We have updated the cyanobacteria rules for small and medium supplies to give suppliers more options to meet their responsibilities. We are also developing guidance on cyanobacteria and cyanotoxin risk management to support these suppliers. As part of our review of the Rules for large supplies, we are considering updates to cyanobacteria rules requirements.

Source water monitoring rules

Councils are increasing their compliance with new requirements to regularly test source water

Sampling and testing source water is still a new requirement for many suppliers. There has been an improvement in source water monitoring performance by councils, with 69% of supplies meeting all or almost all rules in this category, compared to 44% of supplies in 2023. These supplies serve a population of approximately 2.8 million people. We expect that performance rates will improve year-on-year, to provide assurance to the public that suppliers understand and are monitoring risks to their sources of drinking water.

We did not receive any reports for 10% of supplies, an improvement from 2023 when 21% of suppliers did not provide reports.

Figure 21: Council supplies meeting source water sampling and testing rules – percentage of supplies

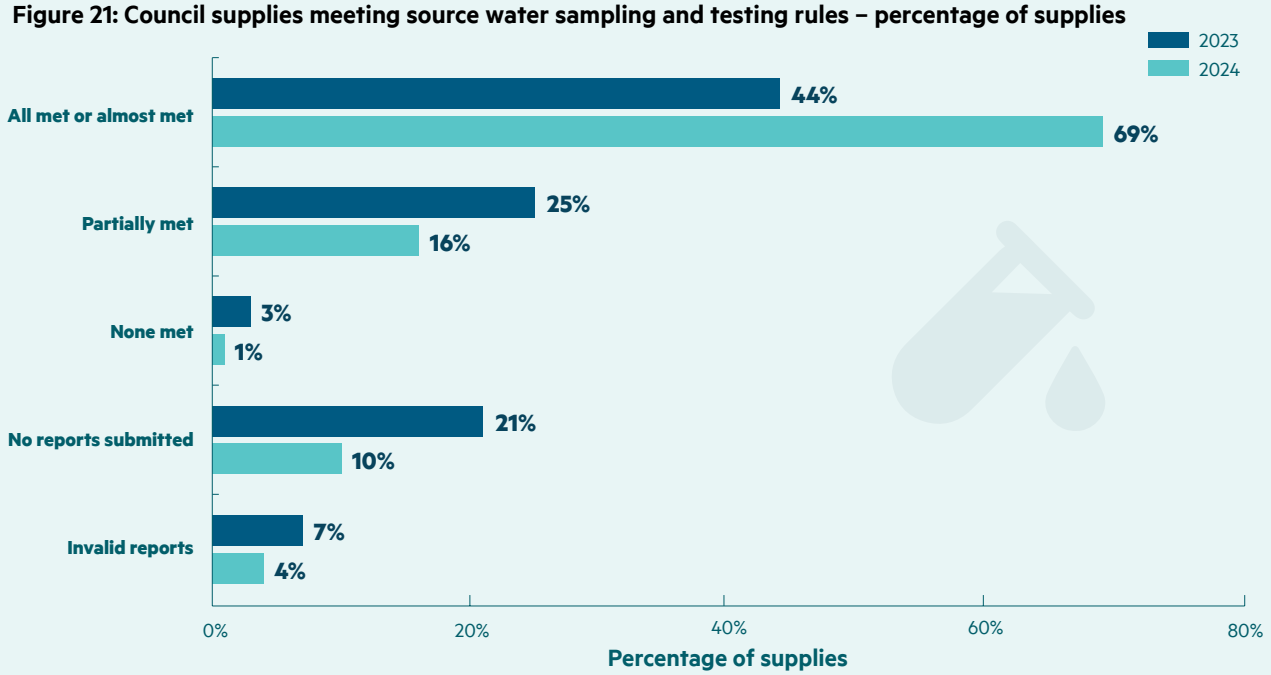
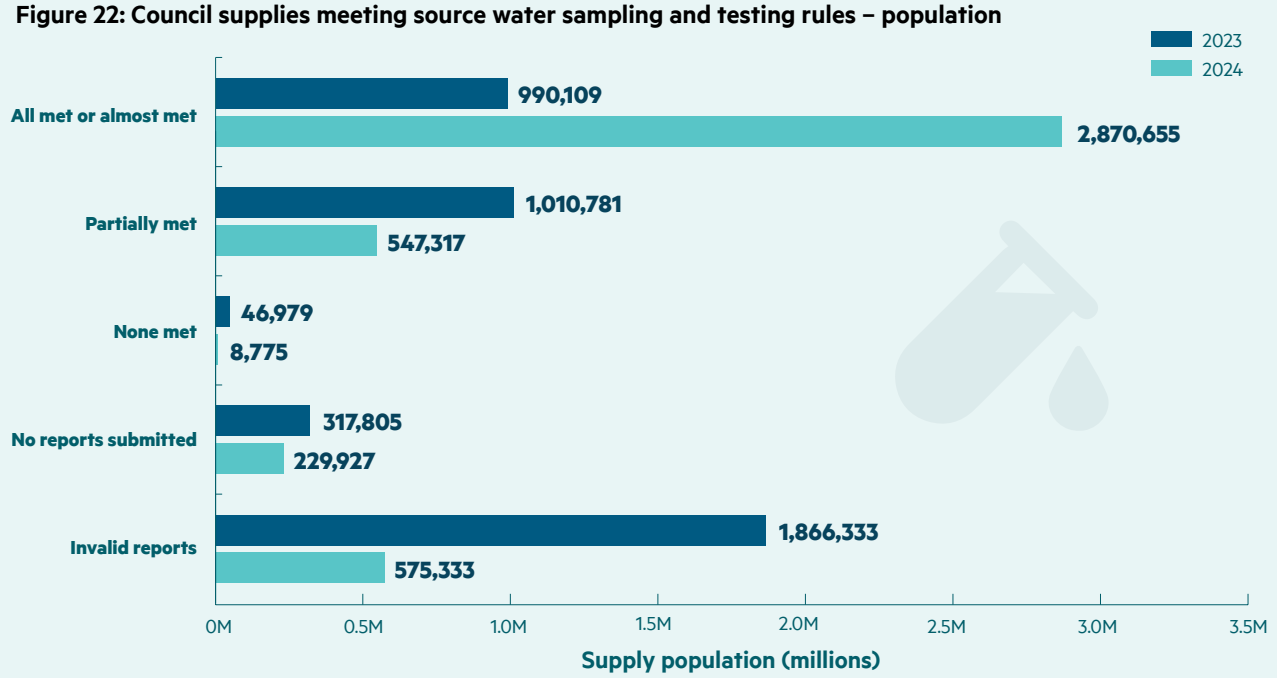


Figure 22: Council supplies meeting source water sampling and testing rules – population



There has also been an improvement in source water monitoring performance by community and private supplies, with results being submitted for 30 supplies (7.7%) in 2024 compared to 15 in 2023 (4.8%).

Source water monitoring results

Suppliers test for a range of determinands in their source water depending on the source type and risks present. Some key determinands reported by suppliers are explored below and compared to 2023 values where relevant. It is important to note that some supplies have multiple sources which can be of different types.

Further information about source water monitoring results for these key determinands can be found in the Appendix to this report.

E. coli in source water

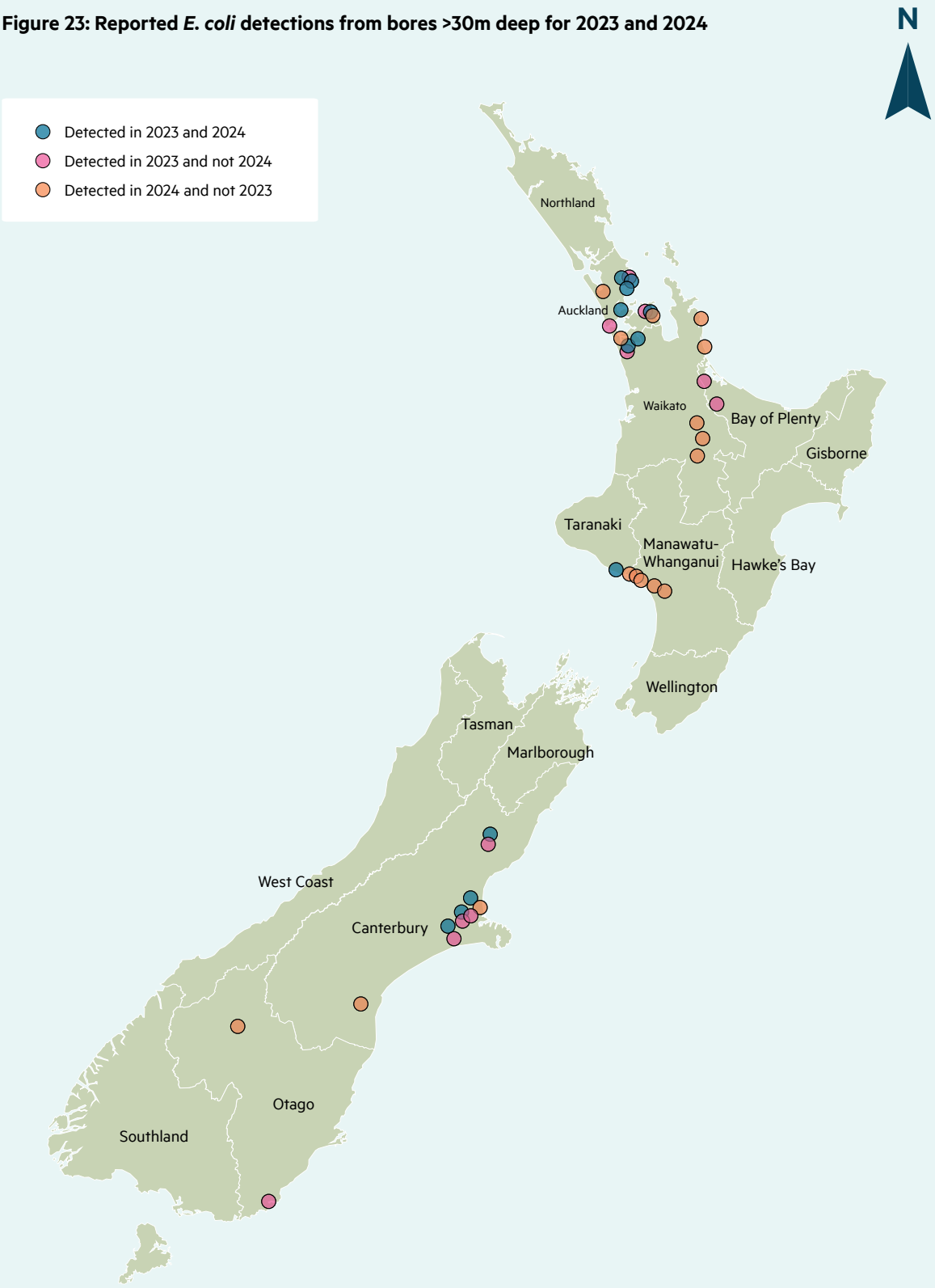
***E. coli* continues to be detected in all source waters, including deep bores**

E. coli monitoring of source water can help suppliers determine the general microbiological quality of their sources and identify changes.

In line with the sampling results for 2023, surface water sources and rainwater had the highest percentage of samples with *E. coli* detections. The percentage of *E. coli* detections in groundwater samples was lower and similar to last year with the exception of groundwater samples from bores >30m deep where the detection rate dropped from 5% to 1% of samples. These results illustrate that while sources that are open and exposed to the environment are more likely to have faecal contamination, all sources are susceptible to contamination. Suitable treatment for pathogens is therefore critical to protect the public health of consumers.

There has been a marked improvement in reporting of *E. coli* sample results for source water, with approximately 38% more samples results reported in 2024 than 2023. This suggests that suppliers are carrying out increased monitoring. There are also more supplies reporting source samples, with an increase from 301 in 2023 to 399 in 2024, and an increase in samples reported across all source types.

Figure 23: Reported *E. coli* detections from bores >30m deep for 2023 and 2024



Chemicals in source water

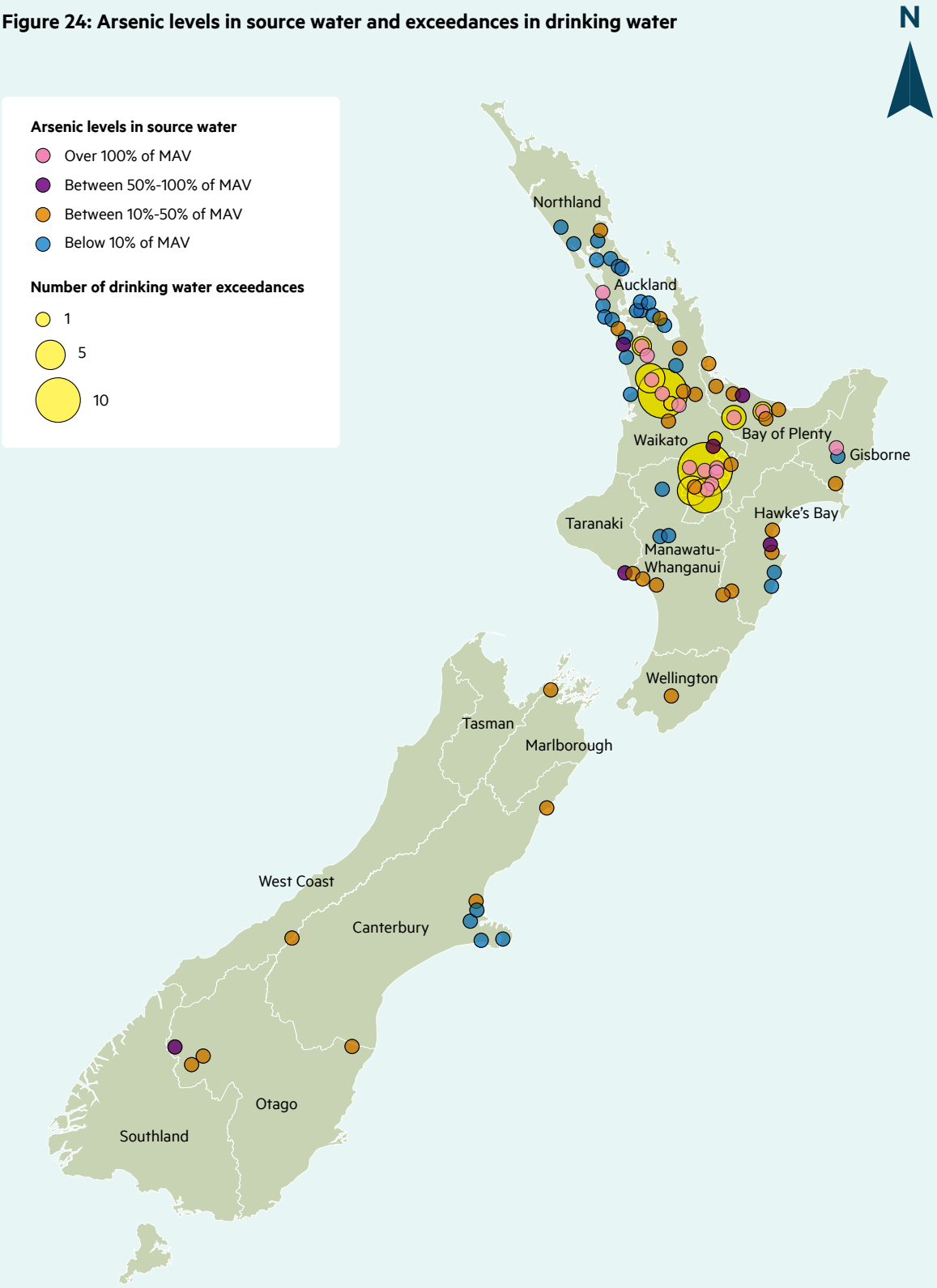
Elevated levels of chemicals in source water can occur naturally due to water leaching or pulling substances from surrounding rocks. Chemicals can also enter the water through discharges, runoff or spills. Processes in the water can also change the chemical composition of water. Examples include the release of toxins by cyanotoxins in the water and oxidation or reduction of metals.

Arsenic (MAV 0.01 mg/L)

Source water chemistry changes the efficacy of arsenic removal

Arsenic is naturally present in some water bodies and is often associated with geothermal activity which is common in parts of New Zealand. Groundwater and surface waters fed by springs in these areas may contain elevated levels of arsenic. The arsenic sample results for 2024 are similar to those found in 2023. The results ranged from under the detection limit to a maximum of 0.22 mg/L, which is a much lower value than the 2023 maximum of 1.91 mg/L. Fifteen supplies reported at least one result above the MAV, and 16 supplies reported at least one result between 50%-100% of the MAV. There was a substantial increase in arsenic samples being taken for river sources, from 279 in 2023 to 652 samples in 2024, likely in response to the Waikato River event (discussed in the “Drinking Water Safety” section earlier in this report).

Figure 24: Arsenic levels in source water and exceedances in drinking water



Nitrate (MAV 50 mg/L as NO_3)

Nitrate is an emerging risk in some parts of New Zealand

Nitrate (NO_3) and nitrite (NO_2) are part of the nitrogen cycle and essential for life. However, at high concentrations, nitrate and nitrite can impact public health. When nitrate is found at higher levels in drinking water, it is often from fertiliser, animal waste, septic tanks and wastewater discharges.[27]

The MAVs for nitrate and nitrite are short term due to the acute risk to health of vulnerable groups (babies and pregnant women). This differs from the MAV for most other chemicals where the health risk is assessed based on a lifetime of exposure.

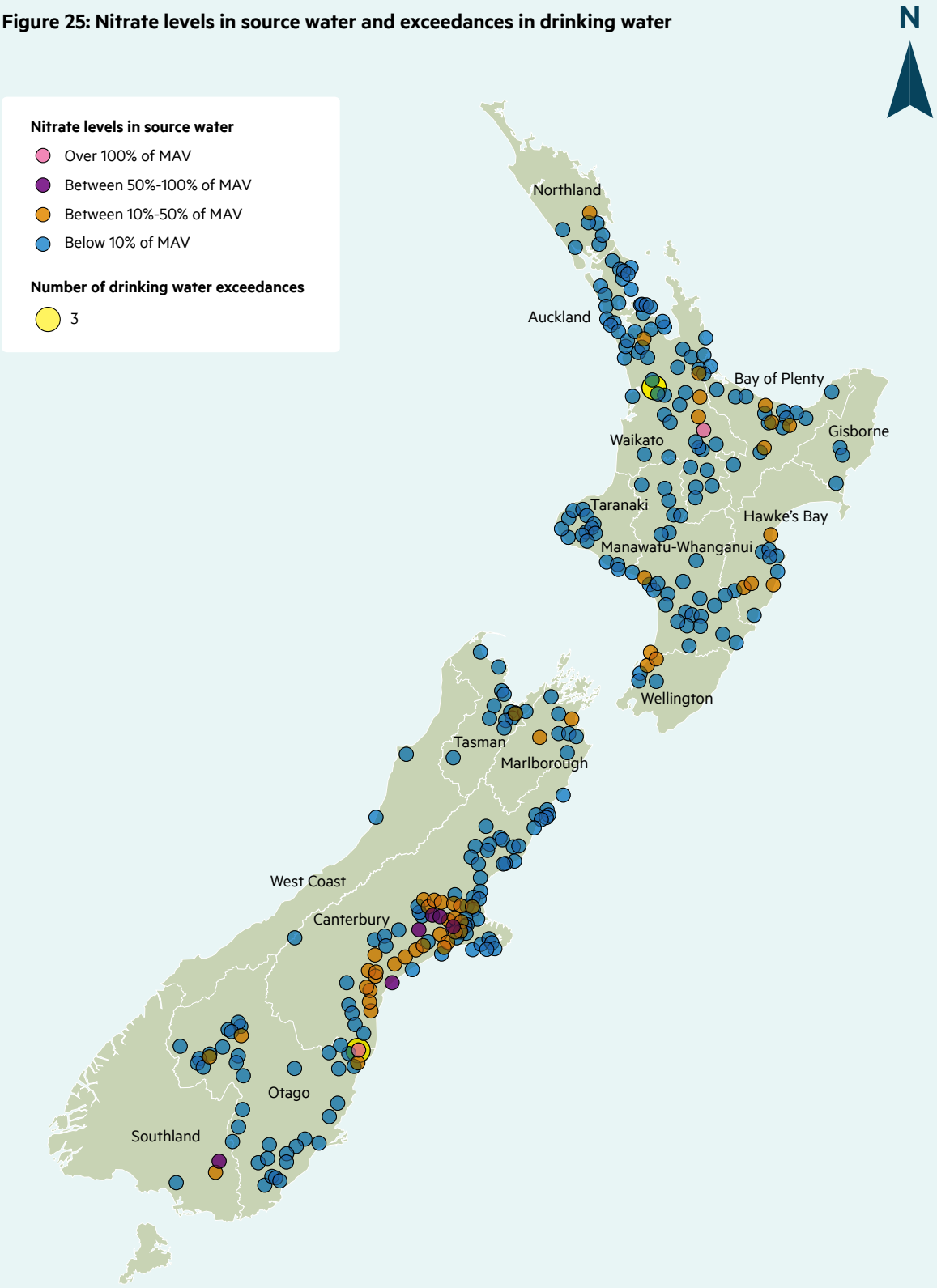
There is concern that nitrate levels in source water in some parts of New Zealand are increasing, primarily in rural areas. This issue is difficult to manage, as nitrate is difficult and expensive to remove from water. Suppliers must take immediate action to protect public health if the MAV for nitrate is exceeded. Due to the difficulty in removing nitrate, action will generally be required when source water reaches the MAV.

As discussed in the "Drinking Water Safety" section earlier in this report, we received four notifications of nitrate MAV exceedances this year in treated water. Two of these were for Waimate District Council's Lower Waihao supply and two were for Te Kowhai School, a rural school. There were no nitrates exceedances in registered supplies in 2023.

In total, 7,328 nitrate samples results were reported in 2024 for source water, an increase of approximately 86% from 2023. Amongst the 358 (up from 262 in 2023) supplies that reported source water nitrate test results, seven supplies reported at least one result between 50%-100% of the MAV, and two supplies reported samples above the MAV. This is an increase from 2023 when there were no source water samples for registered supplies above the MAV for nitrate. However, the results also show a higher percentage of samples in 2024 where nitrate was below the detectable level.

27 See NitrateWatch - GNS Science | Te Pū Ao

Figure 25: Nitrate levels in source water and exceedances in drinking water



Elevated nitrate levels in the Lower Waihao rural supply

In October 2024, Waimate District Council proactively notified us of rising nitrate levels in its Lower Waihao supply. This is a rural supply with a shallow bore source serving a population of around 700. The council was monitoring nitrate levels in the source closely following a previous incident in 2022.

In December 2024, we were advised by the council that nitrate levels in the source water for the Lower Waihao supply were above the MAV for drinking water of 50 mg/L as NO_3. The council issued a 'do not drink' notice to consumers and provided an alternate supply of tankered water. It has introduced blending using water from the Waitaki River to reduce nitrate concentrations in the short term and is considering long-term options for the supply.

We worked closely with the council, Environment Canterbury and the National Public Health Service to coordinate messaging and responses. This included encouraging domestic self-supplies with bore sources to test their water for nitrates.

Continuous monitoring of source water

Continuous monitoring provides drinking water suppliers with up-to-date information on their supplies which can be highly beneficial when conditions change rapidly and affect treatment processes. It is important that supplies with sources at higher risk of rapid change are monitored regularly to enable rapid adjustments to treatment processes and timely investigation of unusual results. The Rules require large water supplies using source waters at a higher risk of contamination to continuously monitor the conductivity, pH and turbidity of raw water arriving at the treatment plant.

According to reporting, 238 large supplies are continuously monitoring their source water, with the majority of the sources being deep bores. This is more than the 162 supplies in 2023 but is a similar distribution, indicating that suppliers with deep bores continue to actively monitor their groundwater. It then follows that the next largest proportion is river, stream and creek sources as these are required to continuously monitor to meet source water monitoring rules. As outlined in the Network Environmental Performance Report 2023/24 while the majority of our drinking water is sourced from surface water bodies, there are more groundwater abstraction points and this should be considered when comparing the number of groundwater sources.

Figure 26: Sources where source water is continuously monitored 2023 vs 2024

	Lake	River, Stream, Creek	Spring	Groundwater (Well or Bore) (<10m deep)	Groundwater (Well or Bore) (10-30m deep)	Groundwater (Well or Bore) (>30m deep)
2023	26	89	11	14	54	260
2024	38 ↑	133 ↑	16 ↑	32 ↑	101 ↑	313 ↑

Part three:
Drinking water supplier performance

In this part, we look at how suppliers are performing against their requirements in the Drinking Water Quality Assurance Rules (the Rules). In the latter part of this section, we look at supplier and sector capability.

Our expectation is that all suppliers meet the minimum requirements set out in the Rules

This section discusses how suppliers are performing against their requirements in the Rules. This is the second year that suppliers have been required to report against the Rules.[28] **This information is self-reported by suppliers. We do not verify suppliers' reports to us on their compliance with the Rules.**[29]

Overall, there has been an improvement in both the quality and completeness of reporting for the 2024 calendar year. However, this year's report is still affected by lower rates of reporting among many government, community and private suppliers. Our expectation is that all suppliers meet the requirements set out in the Rules to provide demonstrably safer drinking water. While some of these requirements are still new for suppliers, many of them (like protozoa and bacteria treatment for supplies serving over 500 people) have been in place for many years.

The focus of our analysis in this section is on council supplies due to available data. Our priority for government, community and private suppliers is to increase rates of reporting.

Additional detailed data on the performance of individual councils and government supplies can be found in the Appendix to this report.

Rules categories assessed

This report looks at rules that demonstrate how suppliers are meeting their duty to take a multi-barrier approach to drinking water safety, and to identify hazards and manage risks. This provides a high-level overview of individual supplies provision of important barriers to improve drinking water safety. The Appendix to this report gives more detail on the methodology of analysis, including our validation processes.

Reporting rates by suppliers

There has been a significant improvement in council supplier reporting by the due date. Overall, we received some level of reporting for 92% of council supplies by the due date, compared to 76% in 2023. The biggest improvement was seen for rural councils, with 90% reporting by the due date, compared to 66% in 2023.

Table 9: Registered supplies required to provide Rules reporting 2023 vs 2024

Supplier category	2023		2024	
	Supplies reported on	Supplies requiring reports	Supplies reported on	Supplies requiring reports
Council	462	485	486	491
Department of Conservation	2	35	2	15
Department of Corrections	3	3	3	3
Ministry of Education	0	362	1	342
New Zealand Defence Force	0	8	7	8
Community and private	30	175	38	185
Total	**497**	**1,068**	**537**	**1,044**

28 Supplies are not required to report against the Rules if they are a water carrier service, have adopted an acceptable solution or are covered by a general exemption.

29 Due to limitations in the way that data is reported, Level 3 bacterial treatment and protozoa treatment categories are considered as representative of performance against the Rules rather than compliance. Because of these limitations, this report analyses supplier performance against the Rules rather than compliance. We discuss these limitations in the Appendix to this report in our analysis of supplier performance. Suppliers are responsible for ensuring the information they provided is complete and accurate. All suppliers should know whether they are complying with the Rules.

We did not receive any reports for four council supplies, a reduction in non-reporting from 23 council supplies in 2023. These supplies are listed in the Appendix to this report.

Overall, 51% of suppliers submitted some level of reporting for their supplies, an increase from 47% in 2023.

We received mixed levels of reporting from the government supplies we expected to receive reports for. The Department of Corrections reported on all its supplies. There has been a significant improvement in reporting by the due date by the New Zealand Defence Force, which reported on 88% of its supplies, compared to no supplies in 2023. The Department of Conservation provided us with reports for two of its supplies (Aoraki/Mt Cook and Whakapapa, two of their largest registered supplies that are not camping grounds, serving a population of 1,360 across the two supplies).

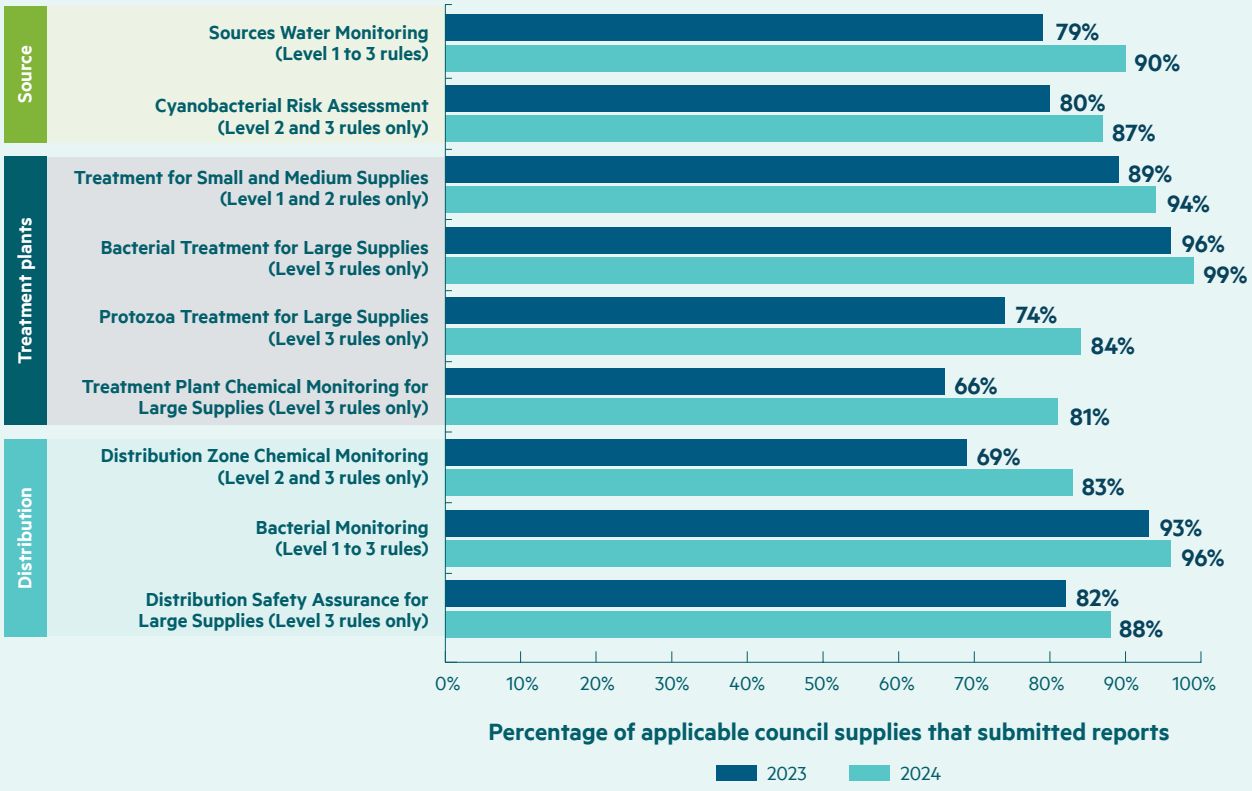
However, reporting was provided for only one of the MOE's 342 supplies required to report (Pukekohe East School, serving a population of 202 people). Our current focus is on building understanding of drinking water safety at self-supplied schools, and the need to carry out critical upgrades and maintenance work to deliver safer drinking water. We are continuing to engage with the Ministry on our expectations for continuous improvement in reporting for self-supplied schools.

We received reports for 21% of community and private supplies, a slight increase from 17% in 2023. Out of the community and private supplies that did not report, seven were large supplies (serving more than 500 people), serving a total population of approximately 15,600 people. The Appendix to this report lists these community and private supplies and the populations they serve.

We have improved our systems to make it simpler for smaller supplies to report to us. We have also made changes to the Rules for supplies serving 500 or fewer people, following consultation with the sector, to clarify monitoring and reporting requirements for these supplies. These changes came into effect on 1 January 2025 and will be reported on in future reports.

Councils have improved their reporting across all rules categories. However, there are still gaps in particular areas. For example, 99% of large council-owned supplies submitted reports under Level 3 bacterial treatment requirements but only 81% submitted against the treatment chemical monitoring requirements (Level 3). In addition, 83% of large and medium council-owned supplies reported against the relevant distribution chemical monitoring rules.

Figure 27: Council reporting rates by performance category 2023 vs 2024



Treatment performance

The Rules require suppliers to have multiple barriers in place to protect consumers from different pathogens. These pathogens include bacteria, protozoa and viruses. Suppliers must also comply with treatment rules to demonstrate that treatment barriers are operating effectively.

Treatment for small and medium supplies[30]

Councils are improving their performance against new treatment rules for small and medium supplies

Treatment rules for small and medium supplies require filtration and UV treatment which work together to provide effective barriers for both protozoa and bacteria. Medium supplies with a distribution network must also have some form of chlorination. Treatment rules include a combination of taking samples for testing, meeting limits for water quality, and meeting other treatment process requirements.

Just over half (57%) of small and medium council supplies are meeting all or almost all treatment rules in this category, compared to 32% in 2023.

Figure 28: Small and medium council supplies meeting Level 1 and Level 2 treatment rules – percentage of supplies

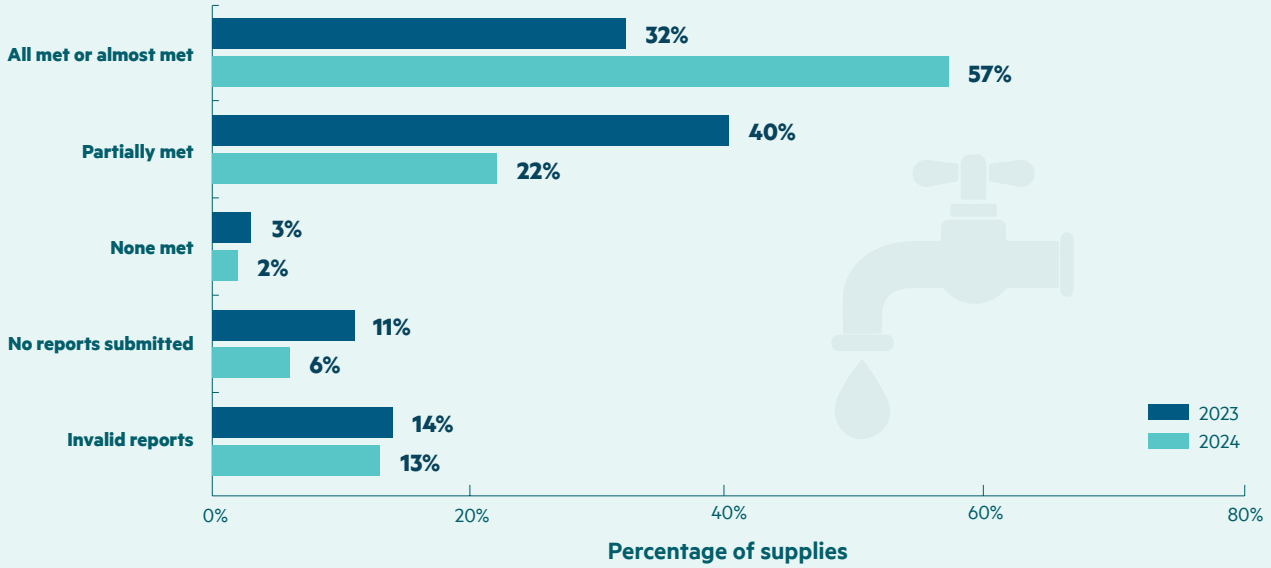
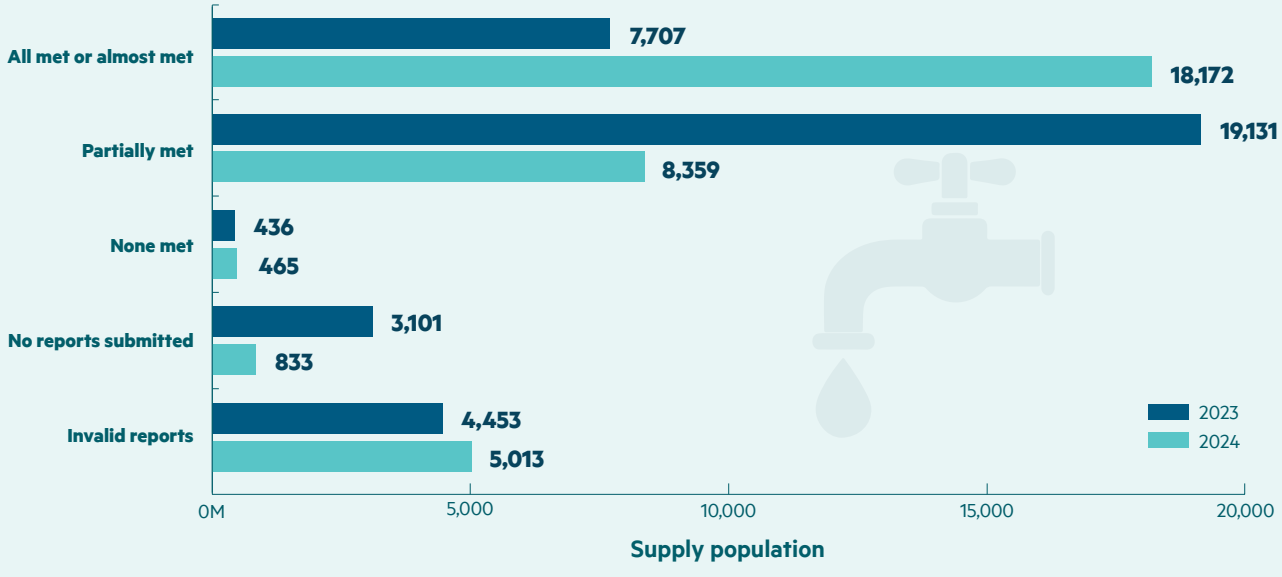


Figure 29: Small and medium council supplies meeting Level 1 and Level 2 treatment rules – population



We did not receive any reports for 6% of supplies, a decrease from 11% in 2023. These supplies serve just over 800 people. Treatment reporting requirements for small and medium supplies are still new, so we expect these performance rates to increase year on year.

30 This performance category covers T1.18, T2.1 to T2.3, T2.9 to T2.14 and T2.18 to T2.21.

Bacteria treatment performance for large supplies[31]

More large council supplies are meeting bacterial requirements

Large supplies (population over 500) must demonstrate daily that their treatment plants have operational barriers to bacteria against the Level 3 treatment rules. Different rules apply depending on what type of treatment the supply uses.

Overall, 259 large supplies were required to report on bacterial treatment performance, and 241 of these are council supplies.

More than half (61%) of large council supplies were reported as meeting or almost meeting their bacterial treatment requirements, an increase from 49% in 2023.

However, there are almost a million people being supplied drinking water from supplies that only partially met, or met none of, the rules in this performance category. The rules in this category relate to having the monitoring to confirm the bacterial barrier is operating effectively. A supply is more likely to have a significant risk of microbiological contamination without sufficient monitoring or compliant treatment. Suppliers are required to actively managing water safety risks as they work to improve their performance.

We did not receive any reports for 1% of large council supplies, a decrease from 5% in 2023.

Figure 30: Large council supplies meeting Level 3 bacteria treatment rules – percentage of supplies

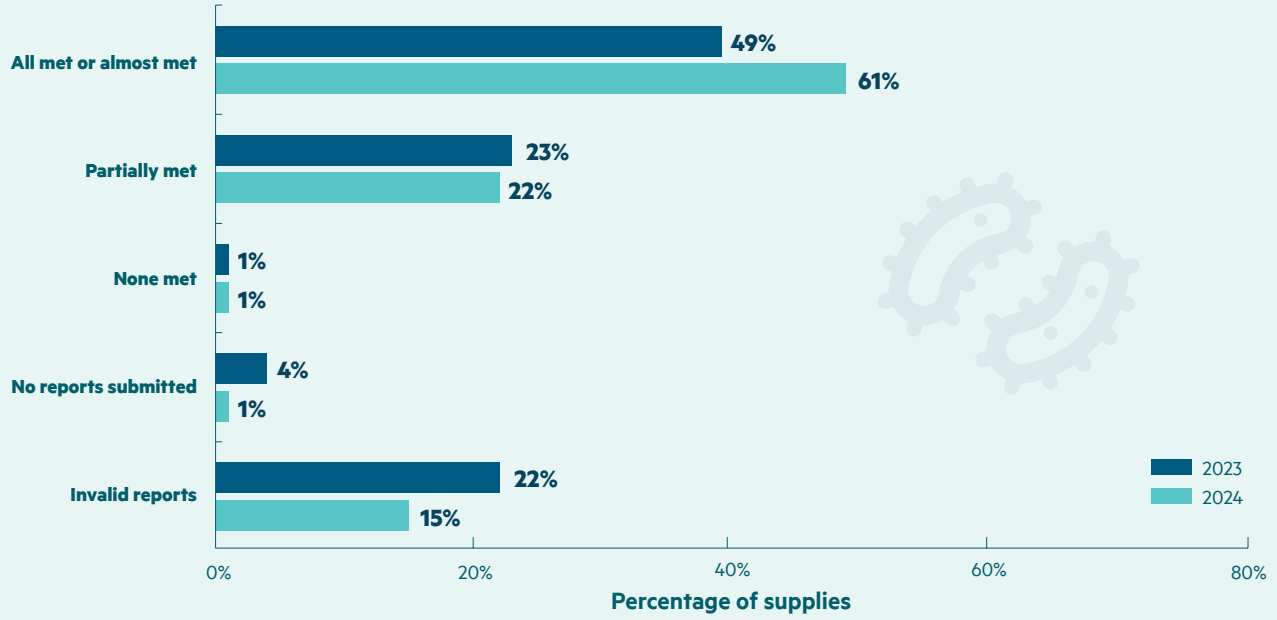
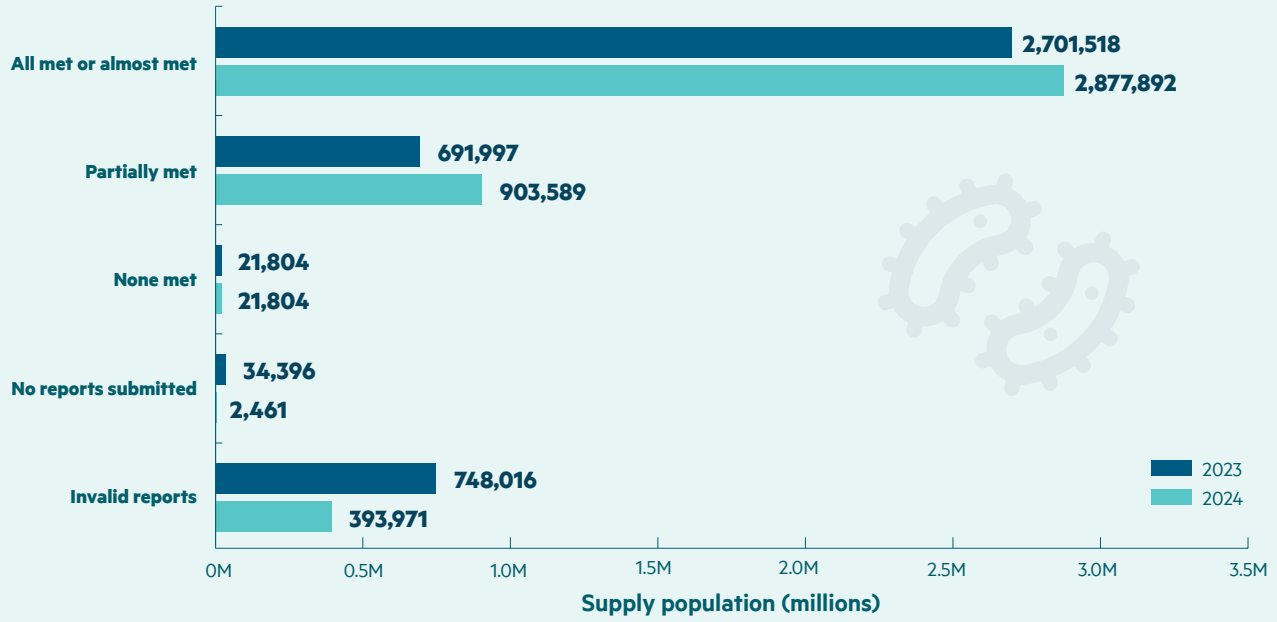


Figure 31: Large council supplies meeting Level 3 bacterial treatment rules – population



31 This performance category covers T3.1 to T3.18.

Protozoa treatment performance for large supplies[32]

More large councils are meeting requirements for protozoa barriers

Large supplies need to have a barrier to protozoa, which is most commonly achieved by one or more treatment processes. The higher the risk of protozoa contamination in a source water, the higher the amount of protozoa treatment required. The amount of protozoa treatment required is quantified by log credits. Different types of treatment achieve a different number of log credits, and multiple treatment types can be used in series to accumulate the required log credits/treatment.

Large supplies must demonstrate daily that their treatment plants have effective barriers to protozoa against the Level 3 treatment rules.

Overall, there were 269 supplies which are required to report on protozoa treatment performance for large supplies, and 256 of these are council supplies. Reporting on whether protozoa treatment requirements were achieved was still low this year but has improved from last year.

Two-thirds (67%) of council supplies were reported as meeting or almost meeting their protozoa treatment requirements, an increase from 49% in 2023.

Twelve percent of council supplies reported not meeting the protozoa requirements for their supplies, compared to 10% in 2023.

Two main reasons for not meeting protozoa requirements continue to include:

- Lacking any protozoa treatment where the supply was required to have it (see "Our Work to Address the Lack of Treatment Barriers" section below)
- Having protozoa treatment which achieved an insufficient number of log credits when compared to the source water requirement.

Figure 32: Large council supplies meeting Level 3 protozoa rules – percentage of supplies

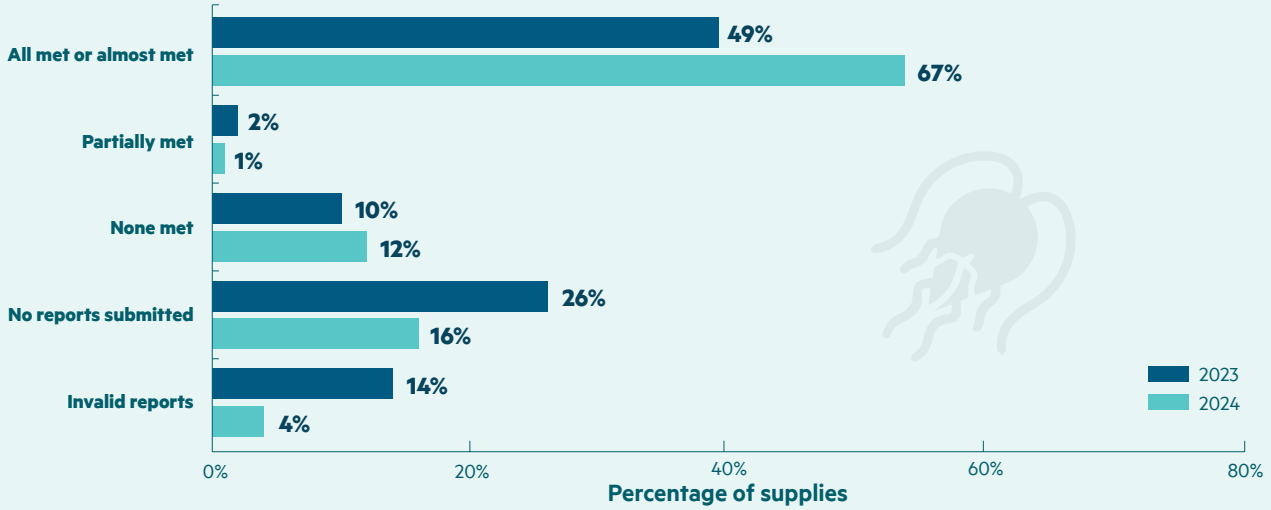
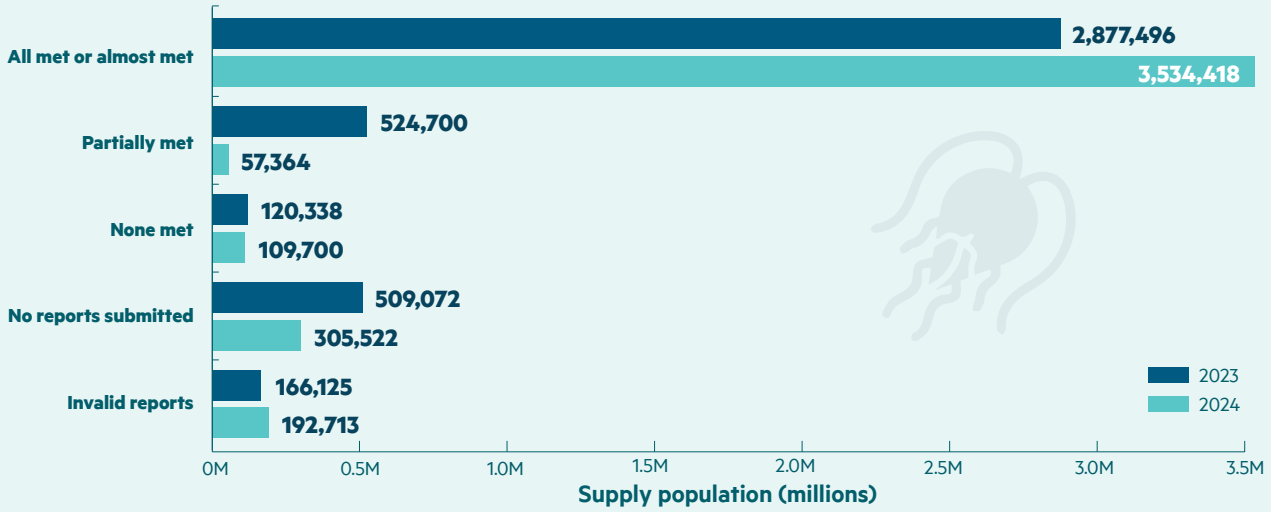


Figure 33: Large council supplies meeting Level 3 protozoa rules – population



32 This performance category covers T3.22.

Chemical monitoring for large supplies[33]

A third of large council supplies are not meeting chemical monitoring requirements

Suppliers with large supplies must monitor for chemicals which they use to treat drinking water. They must also monitor for chemicals that are elevated in their source water to ensure treatment has sufficiently removed them. The extent of monitoring is influenced by supply characteristics.

Two-thirds (69%) of council supplies were reported as meeting or almost meeting their chemical monitoring requirements, an increase from 54% in 2023.

We did not receive any reports for 16% of large council supplies, a decrease from 28% in 2023.

Reasons a supply did not meet these requirements are predominantly due to a lack of sufficient monitoring. This can be due to a lack or failure of monitoring equipment or insufficient sampling being completed to undertake necessary chemical risk assessments.

Figure 34: Large council supplies meeting Level 3 chemical monitoring rules – percentage of supplies

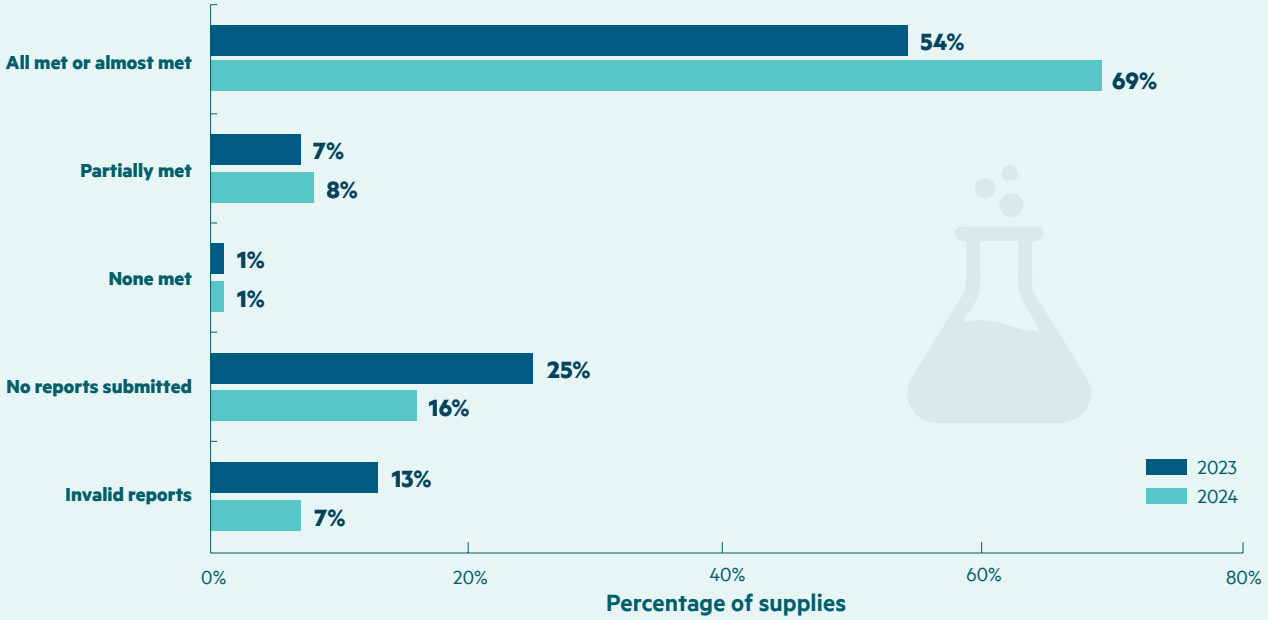
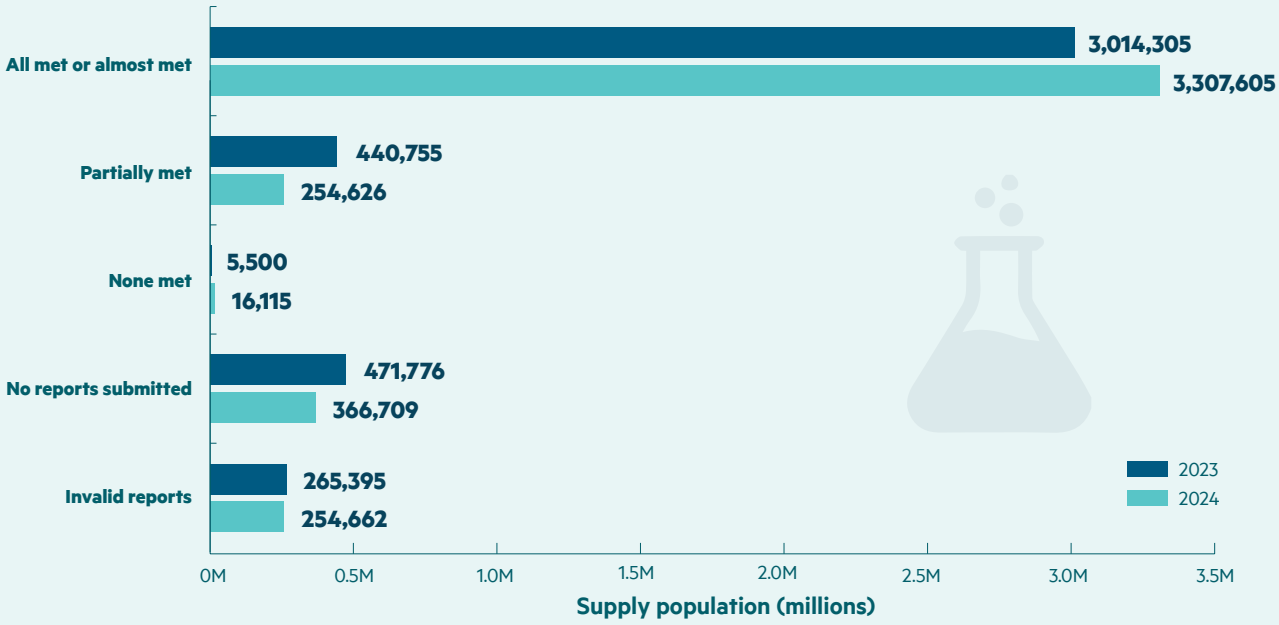


Figure 35: Large council supplies meeting Level 3 chemical monitoring rules – population



33 This performance category covers T3.92 and T3.93.

Distribution zone performance

Bacterial monitoring[34]

Council supplies have made significant improvements in their performance against bacterial monitoring rules

There has been a significant improvement in performance by councils with bacterial monitoring, with over two-thirds of (71%) of council supplies meeting all or almost all requirements, compared to less than half (47%) in 2023.

We did not receive any reports for 3% of council supplies, which is similar to last year's reporting rates (5%). These supplies are listed in the Appendix to this report.

Figure 36: Council supplies meeting bacterial monitoring rules in distribution zone – percentage of supplies

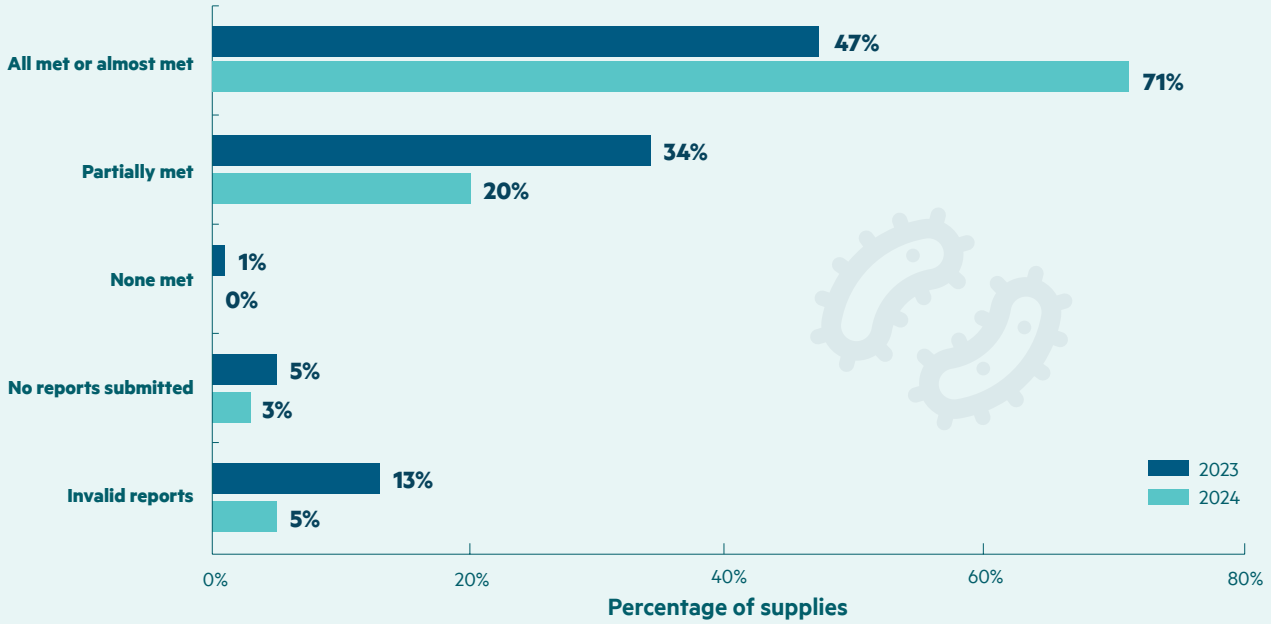
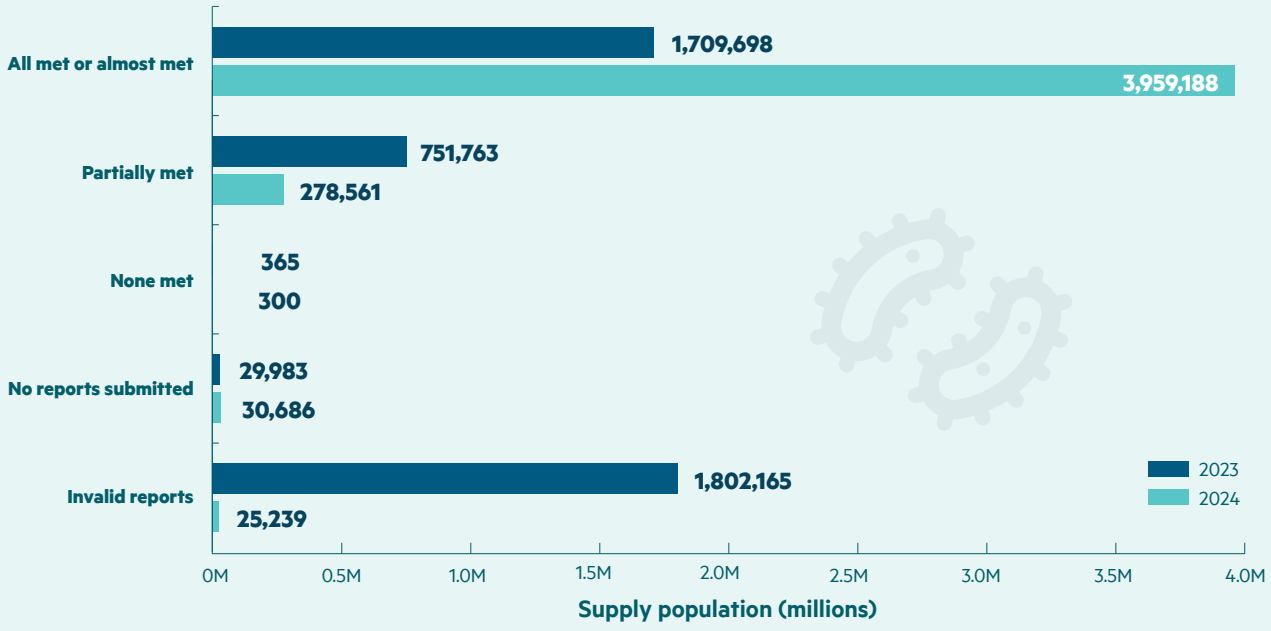


Figure 37: Council supplies meeting bacterial monitoring rules in distribution zone – population



34 This performance category covers D1.1, D2.1, D2.5, D3.19 and D3.29.

Distribution chemical monitoring[35]

More supplies are meeting chemical monitoring requirements in their distribution networks

Distribution systems can contain chemical determinands at levels above the MAV in the Standards due to issues with the distribution network or with the treatment process. Level 2 supplies must monitor for metals (such as copper and lead) which can be present in the distribution system depending on the types of materials used. Level 3 supplies must monitor similar determinands, as well as disinfection by-products which can form after treatment in distribution systems.

For many councils, these requirements are still new for their supplies. Most (73%) of medium and large council supplies are meeting all or almost all distribution chemical monitoring rules, compared to 55% in 2023. We expect these performance rates to continue to improve year-on-year.

We did not receive any reports for 14% of supplies, a slight decrease from 21% in 2023. These supplies serve approximately 174,000 people.

Figure 38: Medium and large council supplies meeting distribution chemical monitoring rules – percentage of supplies

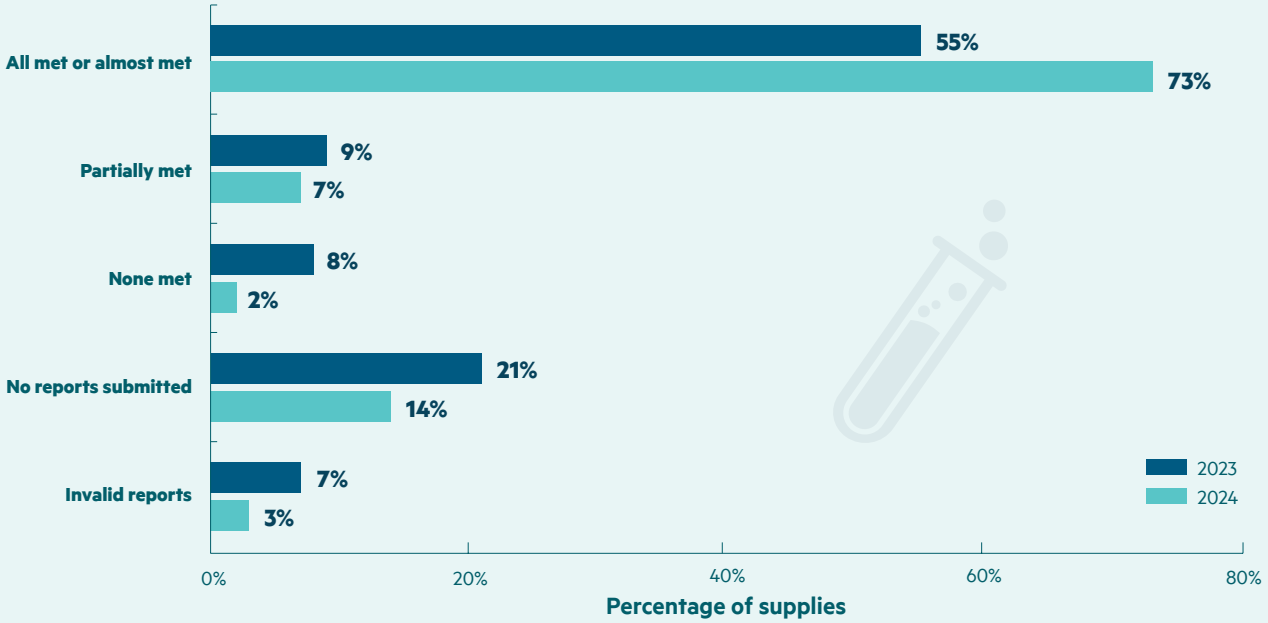
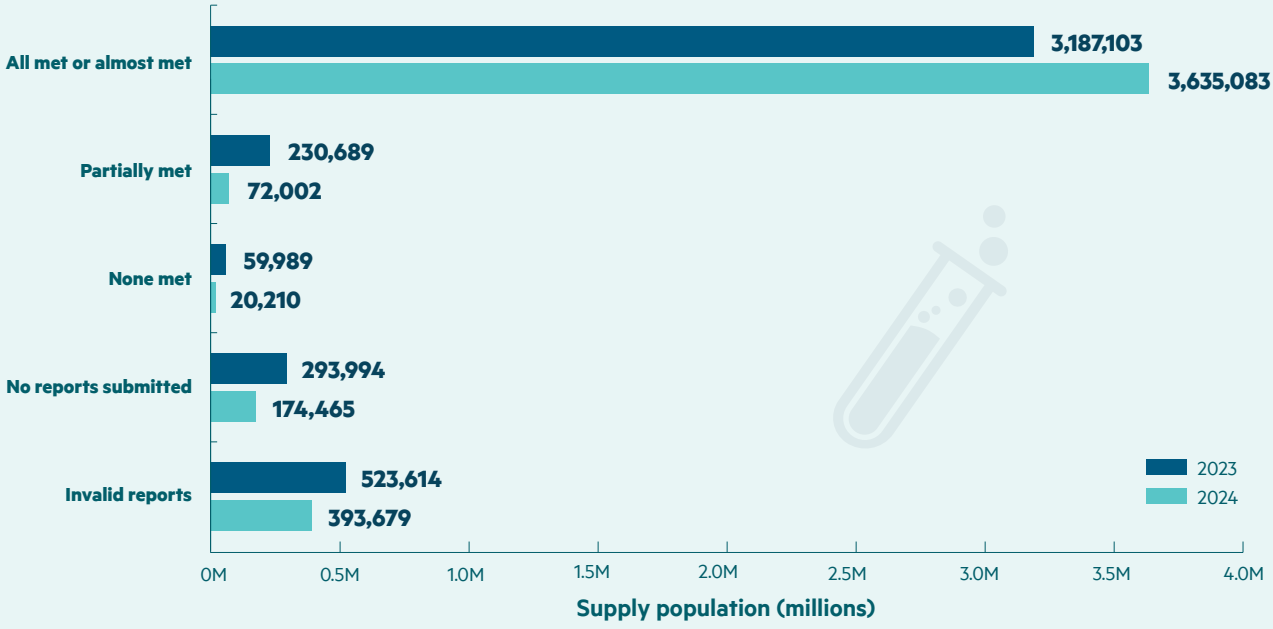


Figure 39: Medium and large council supplies meeting distribution chemical monitoring rules – population



35 This performance category covers D2.1, D3.22 and D3.24.

Distribution safety assurance[36]

Councils need to significantly improve their performance against distribution safety assurance rules

The Rules address distribution safety assurance for Level 3 supplies through specific rules for backflow prevention, distribution storage practices and hygiene procedures.

Drinking water suppliers have a duty under the Act to ensure that their supply arrangements protect against the risk of backflow (the undesired reversal of waterflow that can introduce contaminated water to the network). The Rules include a range of backflow protection requirements for Level 3 supplies. While these specific backflow prevention rules are still new, the requirement to have backflow prevention has been in place for many years.

The Rules also outline standard requirements of distribution storage practices such as having water storage management plans, ensuring storage reservoirs are secure and free from contamination, and following industry best management practices.

The Rules address aspects of hygiene procedures, such as record keeping and the development of procedures, as well as activities like disinfection of mains and tools interacting with the supply.

A total of 34% of large council supplies are meeting all requirements, compared to 22% in 2023. Reasons for non-compliance include having the necessary procedures in development or draft during 2024.

While the rules for distribution safety assurance rules are still new, we expect that all councils meet these requirements, which align with international best practice.

We did not receive any reports for 11% of large council supplies, a decrease from reporting rates in 2023 (17%). These supplies serve a population of approximately 217,705 people. We name these councils in the Appendix to this report.

Figure 40: Large council supplies meeting Level 3 distribution safety assurance rules – percentage of supplies

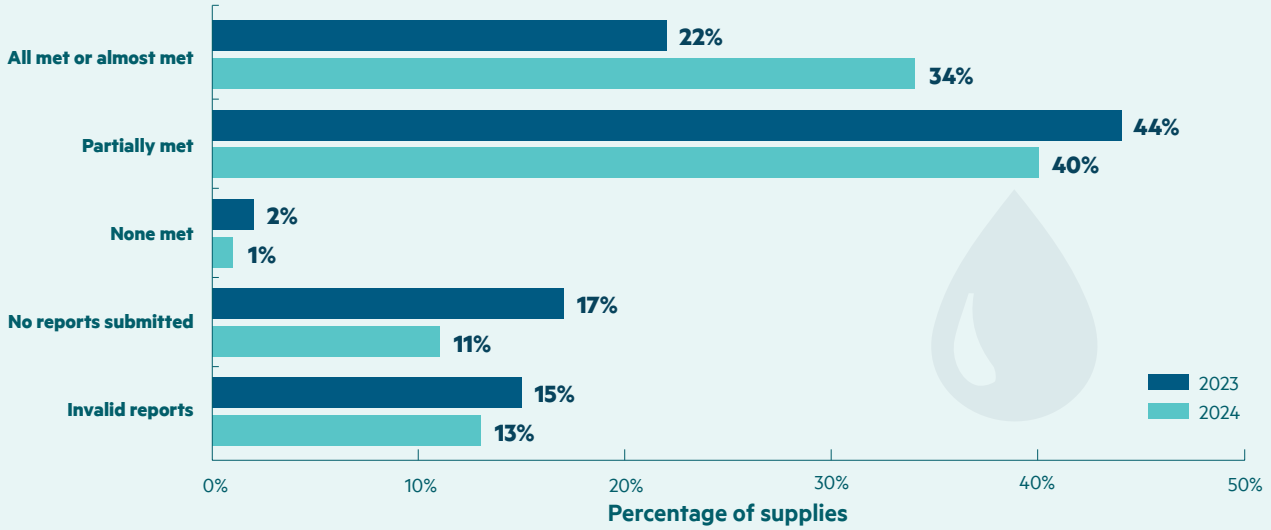
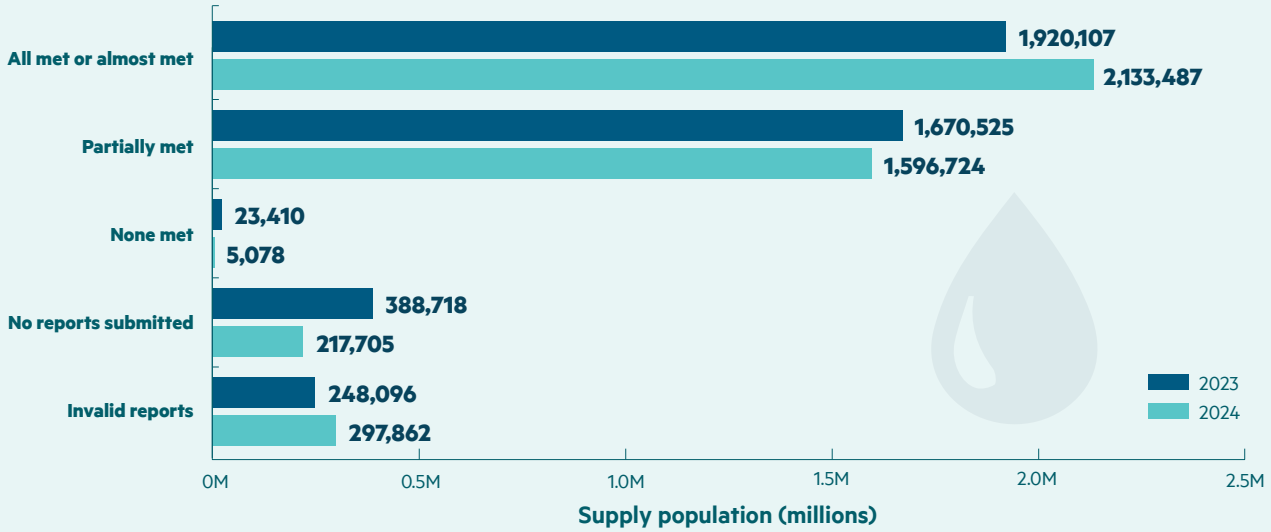


Figure 41: Large council supplies meeting Level 3 distribution safety assurance rules – population



36 This performance category covers D3.1 -D3.17. This combines the data on backflow protection and hygiene procedures, which were presented separately in the 2023 report.

Our work to address the lack of treatment barriers

More councils now have essential multi-barrier protections in place

The Authority's initial focus has been on public supplies which lack basic treatment barriers. In late 2023, we wrote to 29 councils lacking one or more essential treatment barriers against microorganisms – protozoa, bacterial or residual disinfection barriers. At the time, this involved 98 supplies serving 655,150 people. Along with source water risk management, these barriers are key components of a multi-barrier approach. We advised the councils of our expectations that they provide a funded plan and implement barriers within a reasonable timeframe. Because of the higher risk posed by surface water sources, we expected the installation of barriers for surface water sources by 31 December 2024, while councils with supplies with bore water sources are required to install necessary barriers by 31 December 2025. Councils are required to actively manage drinking water risks until necessary barriers are installed, or an acceptable alternative solution is implemented.

Most councils have made significant progress towards getting cost-effective barriers in place and improving drinking water safety. As at 31 December 2024, critical barriers are now up and running at 19 supplies, which are managed by nine councils, providing an additional 118,000 people with drinking water that is likely to be safer. Three councils have now completed installation of the required barriers across all their supplies. The majority of the remaining councils are on track to implement the required barrier(s) by the end of 2025.

We are working with mixed-use rural supplies as they identify and implement the right compliance option for their supplies. As we are currently reviewing the mixed-use rural acceptable solution, we are taking a flexible approach to deadlines for these supplies. Mixed-use rural supplies are required to appropriately manage risks until a permanent treatment option is in place.

In the Appendix to this report we list council supplies with barriers installed by December 2024, as well as those supplies who do not have the required barriers in place. This Appendix also gives more information about treatment barrier requirements for different sources and supplies.

Figure 42: Council supplies with required microbiological treatment barriers

Bacterial treatment		Protozoa barrier		Residual disinfection	
2023	2024	2023	2024	2023	2024
96%	97% ↑	79%	84% ↑	92%	94% ↑
✓ % of supplies with bacterial treatment		✓ % of supplies with protozoa barrier		✓ % of supplies with residual disinfection	
4,164,616	4,224,991 ↑	3,524,891	3,867,168 ↑	4,105,160	4,227,225 ↑
✓ Population with bacterial treatment		✓ Population with protozoa barrier		✓ Population with residual disinfection	
99%	99.85% ↑	85%	93% ↑	97%	98% ↑
✓ Percentage of population with bacterial treatment		✓ Percentage of population with protozoa barrier		✓ Percentage of population with residual disinfection	
4%	3% ↓	21%	16% ↓	8%	6% ↓
✗ % of supplies without bacterial treatment		✗ % of supplies without protozoa barrier		✗ % of supplies without residual disinfection	
27,362	6,277 ↓	601,925	297,839 ↓	146,001	88,711 ↓
✗ Population without bacterial treatment		✗ Population without protozoa barrier		✗ Population without residual disinfection	
1%	0.15% ↓	15%	7% ↓	3%	2% ↓
✗ Percentage of population without bacterial treatment		✗ Percentage of population without protozoa barrier		✗ Percentage of population without residual disinfection	

Sector capability

In this section we look at supplier and sector capability, including work by the Authority and others to address sector capability gaps.

In last year's report, we highlighted that the water industry has identified a lack of capability among suppliers to manage drinking water issues. This continues to be a concern in this year's report.[37]

The drinking water sector's ability to consistently provide an adequate supply of safe, compliant drinking water depends on multiple factors. These include:

- infrastructure and equipment that is fit for purpose
- adequate numbers of suitable personnel to facilitate effective service delivery at all times
- appropriate training, experience and/or supervision that enables staff to perform effectively
- documented procedures which clearly set out expectations and escalation pathways.

Research indicates that around 10% of water services roles at councils in New Zealand are vacant, pointing to capacity issues.[38] The age of the workforce has also been highlighted as a concern, with 11% of employees expected to reach retirement age by 2024.[39] Staffing deficiency can impact on delivered water quality by reducing the ability of staff to undertake proactive improvements, respond quickly to incidents and events, and provide adequate oversight or supervision. The Network Environmental Performance Report 2023/24 looks at information about drinking water networks, including water loss and the quality of pipes.

Incidents, events and issues

Earlier in this report, we discussed examples of incidents and events in 2024 where supplier capability was a likely contributing factor or cause. These include:

- Elevated levels of lead and copper in Horowhenua District Council's Tokomaru supply. This incident highlights the importance of training and documented procedures for samples to ensure accurate test results.
- There have been a number of *E. coli* detections which are or may be linked to poor sampling procedures. The capability factors which contributed to these occurrences include infrastructure deficit (e.g. sampling points are poorly designed and constructed, and a lack of training and procedures meaning that improper techniques were used). This results in a high number of notifications, and a hesitancy by some suppliers to consider the sample results legitimate, potentially putting public health at risk if the sample does represent the water quality in the supply.
- Chemical dosing issues for some council supplies. While root cause analysis was not undertaken in all cases the gaps in skills, training or resources which contribute to these events are likely to include poor infrastructure. This includes lack of continuous monitoring, automatic dosing and alarms, and low staffing levels increasing response time.

Capability and Rules performance

As discussed earlier in this section, more suppliers are reporting on their requirements in the Rules. Councils have significantly improved their reporting against the Rules by the due date, increasing from 76% in 2023 to 92% in 2024. There were also high levels of reporting from two government suppliers – the Department of Corrections and the New Zealand Defence Force.

We did not receive reports for six council supplies (a decrease from 23 in 2023). We are actively working with three of these supplies who are on long-term consumer advisories as they lack one or more essential treatment barriers. Although councils are improving their performance against the Rules, many councils are reporting not meeting the minimum requirements under them.

Reporting rates continue to be low for community and private supplies. In the "Community and Private Suppliers" section, we discuss our work to understand the challenges facing community and private supplies.

37 Sector capability has also previously been highlighted in reports produced by other agencies. For example: Water New Zealand, 2022 2021/2022 *National Performance Review* [Online]. See National Performance Review : Water New Zealand (Accessed 19 May 2025); Infrastructure New Zealand, 2023 *Infrastructure New Zealand Position Paper: Water Infrastructure and Services* [Online] Available at Infrastructure-NZ-Policy-Postions-Water-Infrastructure-002.pdf (Accessed 19 May 2025).

38 New Zealand Infrastructure Commission Te Waihanga, 2021 Sector State of Play: Water Discussion Document. [Online] Available at: https://media.umbraco.io/te-waihanga-30-year-strategy/hgwddiao/sector-state-of-play-water.pdf (Accessed 19 May 2025).

39 Water New Zealand (2019). 2018-2019 National Performance Review [Online]. See 2018/2019 National Performance Review Report (Accessed 19 May 2025)

Lifting sector capability

We supported capability improvements such as cyanobacteria risk assessment by running a joint workshop with Water New Zealand. We also participated in a workshop with Ngāti Toa, Te Pūkenga and Wellington Water on the establishment of a training centre to address critical workforce gaps and enhance the resilience of Wellington's infrastructure.

Waihanga Ara Rau, the Construction and Infrastructure Workforce Development Council, is currently undertaking a review of water services qualifications and standards. In October 2024, they published their investigation stage findings.[40] Initial findings concluded that 40% of industry respondents considered the Level 4 Certificate in Drinking Water Treatment is not fit for purpose and did not meet sector needs. We will include an update on the review in next year's report.

40 Waihanga Ara Rau Construction and Infrastructure Workforce Development Council. (2024). *Water Services Qualification Review Stage 1: Investigative Phase Findings* [Online]. See https://www.waihangaararau.nz/wp-content/uploads/2024/11/Waihanga-Ara-Rau-Water-Review-Stage1-Report.pdf (Accessed 19 May 2025)

Part four:
Community and private supplies

Community and private drinking water supplies are a critical but often under-recognised part of New Zealand's drinking water landscape.

Approximately 14% of people in New Zealand receive their drinking water from community and private supplies. Community and private supplies serve households, marae, papakāinga, rural communities, lifestyle blocks and small businesses in remote and semi-urban areas. They can also serve large commercial supplies and gated communities with corporate structures. Community and private supplies range from sophisticated private networks to single-source systems dependent on rainwater (roof collected), bores, or springs.

In 2022, modelling by BECA estimated the presence of between 57,000 and 121,000 community and private supplies, collectively serving more than 800,000 people. However, only 533 community and private supplies have registered with the Authority and confirmed their registration details with us.[41]

These supplies serve approximately 73,000 people.[42] This discrepancy indicates both significant under-registration and persistent challenges in reaching and supporting this diverse and dispersed group of suppliers.

The data we have indicates that the majority of registered community and private supplies serve populations of 26 or more people or are registered water carriers. Groundwater (well or bore) is the predominant source, followed by rainwater (roof collected). Some small-scale accommodation providers rely on mixed-source systems incorporating rainwater, groundwater, or council back-up connections.

The regional distribution of registered community and private supplies is not consistent. Auckland, Otago and Northland contain particularly high concentrations. Many community and smaller private supplies operate with minimal oversight and little access to professional water engineering or compliance expertise.

Table 10: Characteristics of community and private supplies

Characteristics of community and private drinking water supplies		
	2023	2024
Predominant water source type	Groundwater (Well or Bore)	Groundwater (Well or Bore)
Most common regions	Auckland, Otago, Northland	Auckland, Otago, Northland
Total registered	472	533
Registered supplies that have not lodged drinking water safety plan	138 (29%)	97 (18%)

41 The Government has proposed legislative changes that could impact when currently unregistered supplies need to be registered through the Local Government (Water Services) Bill. This includes extending the timeframe for unregistered supplies to register by an extra three years (to 2028) plus an extra two years (to 2030) to become compliant. This Bill also proposes excluding lower-risk suppliers serving 25 consumers or fewer from regulation. This means these suppliers would no longer need to register with the Authority or meet other requirements under the Act.

42 For those supplies who have not confirmed their details, critical fields such as water source type, treatment methods and operational responsibilities are often missing or incomplete.

The low proportion of community and private supplies registered with the Authority presents a significant barrier to effective regulation and support. Many unregistered community and private supplies remain invisible to formal systems. This is especially those in small predominantly Māori communities where whānau, hapū, and iwi networks manage water collectively, often without formalised governance arrangements or access to professional services. Further on in this section, we discuss how we are encouraging registration of community and private supplies.

Notifications for community and private supplies

In 2024, we received 40 laboratory notifications of *E. coli* exceedances for community and private supplies, down 30% from 2023. One supply accounted for 28% of the notifications received for community and private supplies in 2024. A long-term boil water advisory has been in place at this supply since April 2024.

We also received 11 laboratory notifications of chemical MAV exceedances for community and private supplies in 2024, down 52% from 2023.

These numbers could indicate that community and private supplies are not regularly testing for bacterial and chemical contamination, creating heightened exposure to microbial and chemical risks.

In 2024, we received 39 laboratory notifications of *E. coli* exceedances and seven laboratory notifications of chemical MAV exceedances for unregistered community and private supplies.

Challenges and barriers for community and small private suppliers

One of the defining challenges associated with community and private drinking water supplies is the wide variation in infrastructure, funding, management capability and understanding of regulatory responsibilities. Many community and smaller private supplies rely on untreated or minimally treated water sources, including rainwater (roof collected) shallow bores and surface water.

While these systems often function adequately under normal conditions, they are particularly vulnerable to contamination during extreme weather events or periods of poor maintenance. Many community and smaller private suppliers also have significant operational capacity constraints as well as broad systemic barriers.

Insights from Te Ihorangi pilot programme

In response to the need for direct, culturally grounded engagement with community and private suppliers, the Authority launched the Te Ihorangi pilot programme in 2024. This initiative was designed to provide outreach, education, and practical support through regional workshops held on marae and in local communities. The first pilot was delivered in Te Tai Rāwhiti – East Coast, a region with high concentrations of unregistered supplies, elevated climate risk profiles and strong iwi-led governance structures.

In Te Tai Rāwhiti – East Coast, five workshops were carried out in October 2024, which reached 71 participants representing 39 of the 48 marae in the region.

Despite the high level of engagement, it was evident that most attendees were unfamiliar with the requirements for registration, or the health risks associated with untreated water. Water testing carried out on-site revealed that only eight of the 22 samples collected "met the Standards", a sobering indicator of the risks facing many of these communities. Rainwater systems, in particular, showed signs of contamination following recent storms.

The Authority's Te Ihorangi workshops revealed that over 70% of participants preferred hard-copy materials or verbal explanations and demonstrations. This indicates that digital exclusion may be an issue for community and private suppliers, particularly in remote areas with limited internet access. This reinforces the importance of our outreach approach incorporating guidance designed for local champions and community groups who can then in turn influence the many. In next year's report, we will discuss our pilot in Te Tai Tokerau – Northland, which took place in March 2025.

Our engagement also highlighted that community and private supplies often lack basic treatment equipment such as first-flush diverters, filtration units, or UV disinfection systems. Even when such systems are installed, maintenance may be irregular due to a lack of training or access to spare parts. In some instances, contamination is exacerbated by nearby agricultural activity, stormwater runoff, or poor catchment protection. The absence of basic treatment systems such as filtration, chlorination, or UV disinfection is common, and routine monitoring is rarely performed. This creates heightened exposure to microbial and chemical risks.

Our engagement conducted as part of the Te Ihorangi pilot, coupled with data, has confirmed the existence of entrenched systemic barriers facing some community and private drinking water suppliers. These barriers are not merely technical or financial, but are rooted in broader issues of accessibility, and historical underinvestment in infrastructure.

Pathways to safe drinking water

In recognition of the considerable challenges faced by some community and private water suppliers, the Authority has taken a proactive approach to compliance, one that is grounded in partnership, proportionality and respect for the unique contexts of these diverse supplies. The Authority has sought to create multiple, practical options (like acceptable solutions) that help suppliers meet their legal duties in ways that work for their specific situations. Recognising the first requirement for suitable information and guidance, the Authority is looking to improve available guidance materials so that community supplies better understand the importance of compliance requirements.

Other initiatives to improve drinking water infrastructure and providing training for private rural supplies and marae include the Rural Drinking Water Programme and the Marae Drinking Water Infrastructure Fund.[43] This funding represents a significant step toward providing access to safe and reliable drinking water across rural New Zealand. By investing in infrastructure upgrades, training and ongoing maintenance, the Rural Drinking Water Programme and the Marae Drinking Water Infrastructure Fund aim to ensure that rural marae, kōhanga reo, papakāinga and other private supplies meet the Standards. The full subscription of both funds highlights the need and strong community demand for safe water solutions. In the long term, these investments are expected to improve community and private supplies compliance.

Finally, our outreach and capability building of community and private supplies will reflect the context of these communities. Community and private supplies are often acutely exposed to extreme weather events, droughts and infrastructure shocks. Embedding resilience planning into our capability building activities will ensure that these communities are not only compliant, but also prepared for the challenges of a changing environment.

43 See: Marae Drinking Water | National Infrastructure Funding and Financing | New Zealand.

Part five:
Our performance

In this part, we look at the performance of our functions and discuss the extent to which the Water Services Act 2021 is meeting its main purpose.

The Act requires that we report on the performance of our functions, including our performance to achieve the objectives and targets set out in our CME Strategy. An in-depth evaluation of our performance against the CME Strategy can be found in the Appendix to this report.

Compliance action

We use a range of regulatory tools under the Act proportionate to the risk – from providing educational material and guidance to taking enforcement action.

Each type of supply differs in complexity, scale, risk and management needs. In our work with suppliers, especially community and private suppliers, we aim to provide a range of compliance options for them to consider which allow them to comply with their duties to meet Standards and to supply safe and sufficient drinking water.

We support the development of supplier knowledge and capability through research and education. We do this by publishing practical guidance, hosting educational events, and providing visibility of treatment and risk management requirements. We also provide acceptable solutions as a consolidated compliance pathway for smaller remote supplies.

Sometimes we need to use our powers when requirements are not being followed. When this occurs, we use our powers in a proportionate and considered way, including having regard to cost-benefit considerations, accounting for both the risk of harm and the actions and circumstances of the supplier.

Our regulatory tools and powers under the Act include the ability to carry out investigations, issue directions, issue warnings and serve compliance orders. An option available to suppliers when non-compliance involves certain offences is to acknowledge the situation and commit to specific actions under an enforceable undertaking.

In 2024, we issued one direction and one written warning. We also monitored progress against a direction and compliance order that we issued in 2023.

Clutha supplies

We have continued to work closely with Clutha District Council as it addresses issues across its supplies.

In March 2023, we issued a direction to the council and the previous operator of the supplies in response to aluminium levels exceeding the MAV across five of the council's supplies. The direction required the council to investigate and determine the cause of elevated aluminium levels, prepare and implement an extensive sampling plan, communicate with affected consumers and prepare a remedial action plan.

Since then, the council has carried out extensive monitoring for aluminium. The council has taken steps to reduce aluminium levels in the drinking water it supplies, including improving the operation of its manually controlled aluminium coagulant process. It is in the process of updating DWSPs for the supplies included in the direction.

There are still ongoing aluminium MAV exceedances for some of the supplies included in the direction – North Bruce Rural, Moa Flat, Waitahuna Rural. These are at lower concentrations compared to 2023. North Bruce Rural, Moa Flat and Waitahuna Rural supplies remain on long-term informational advisory for aluminium exceedances, as well as long-term boil water advisories due to the lack of effective treatment barriers. There have also been aluminium exceedances for council supplies not included in the direction.

In February 2025, we determined that the council met the requirements of the direction.

In November 2023, we served a compliance order on the Milton supply after a review of the DWSP for the supply highlighted that it did not comply with the Act or the Rules in a range of ways. The order set out what is needed from the council to become compliant and assure us they are providing safe drinking water to the consumers of the Milton supply.

The council has carried out a programme of work to meet the requirements of the compliance order. The work included removing high-risk waste recycling from their recycle stream, installing equipment to monitor the recycled waste stream, installing chlorine monitoring at their reservoir, amending the drinking water safety plan for the Milton supply, and developing a plan to address non-compliance with the Rules.

In January 2025, the council met the remaining requirements of the compliance order.

Tararua District Council

In the "Drinking Water Safety" section earlier in this report, we discussed the direction and warning notice we issued following a series of incidents where dead possums were found in a treated drinking water reservoir for the Woodville supply.

Conclusion

We have more data on the performance of the water sector compared to last year, largely due to a significant improvement in Rules reporting from council supplies. This allows us to better understand the extent of suppliers' compliance with the Rules and whether they are taking an effective multi-barrier approach to drinking water safety.

We are currently reviewing the Rules for large supplies, as well as the current acceptable solutions, to ensure requirements are proportionate to the risks and clearly understood by suppliers. We have renewed and updated our strategic framework. We are also updating our CME Strategy to communicate to the sector our regulatory priorities over the next three years. These actions are taken to improve the effectiveness of the Act and therefore ensure safe drinking water.

The data and insights provided in this report are important to provide transparency about the performance of the water sector, which in turn helps us to assess the performance of the regulatory system.

Comprehensive reporting on our functions can be found in our latest Annual Report: Annual-Report-2024.pdf

Meeting the purpose of the Act

The Act provides us with a range of regulatory tools and powers to meet the purpose of the Act, from setting requirements, monitoring compliance with those requirements, and acting where appropriate where suppliers are not meeting their obligations under the Act and the Rules.[44]

We are increasingly using these regulatory tools and powers in our third year of working with the Act. In 2024, our focus was on ensuring that councils and government suppliers have basic treatment barriers in place to ensure that drinking water does not present a significant risk to health. As a result, 119,000 New Zealanders have gained access to safer drinking water. Councils have acknowledged the value of the Authority in improving the safety and quality of drinking water for consumers.

44 The main purpose of the Act is to ensure that suppliers provide safe drinking water to consumers. This is achieved through providing a drinking water regulatory framework, a source water risk management framework and mechanisms to enable the regulation of drinking water to be proportionate to the scale, complexity and risk profile of each drinking water supply. See s 3(1) of the Act for the full purpose.

Glossary

Technical terms

Term	Definition
Abstraction point	The location at which source water is abstracted for use in a drinking water supply e.g. the location at which water is abstracted from a river, stream, lake, or aquifer.
Acceptable solution	Prescribed requirements that a water supplier can adopt to meet some of the legislative requirements set out in the Water Services Act 2021.
Accredited laboratory	A scientific facility equipped to test source water, raw water and drinking water. Registered drinking water suppliers must use an accredited laboratory. Accreditation is managed through International Accreditation New Zealand (IANZ).
Act, the Act	The Water Services Act 2021.
Aesthetic values	Maximum or minimum values for substances or characteristics of drinking water that relate to its acceptability to consumers, such as appearance, taste, or odour.
Boil water advisory or boil water notice	A notice issued by a drinking water supplier when the drinking water supply contains or could contain microorganisms, such as viruses, bacteria and protozoa, that could make consumers sick. Water for drinking, preparing food (including infant formula) and brushing teeth must be boiled or have some other treatment (e.g. bleach) before use.
Catchment	An area of land that water collects in and moves through. This is often collected into streams and rivers through a valley but can also apply to groundwater.
CFU	Colony-forming unit (CFU) is a measure of viable microorganisms in a sample. Bacterial samples are normally reported as CFU/100ml or MPN/100ml.
Consumer	A person who consumes or uses drinking water supplied by a drinking water supplier.
Consumer advisory	A notice issued by a water supplier when the drinking water supply is not safe to drink in its current state. There are different types of consumer advisories for different situations (see boil water notice, do not drink notice or do not use notice).
Determinand	A substance or characteristic that is determined or estimated in drinking water.
Domestic self-supply	A stand-alone domestic dwelling that has its own supply of drinking water.
Do not drink advisory or do not drink notice	A notice issued by a water supplier when the drinking water supply contains harmful chemicals and toxins. In this case boiling water will not make it safe.
Do not use advisory or do not use notice	A notice issued when the water is, or could be, contaminated in way that any contact (e.g. with the skin, lungs or eyes) may be unsafe. These types of notices are rare.
Drinking Water Quality Assurance Rules (the Rules)	Rules that set out what drinking water suppliers need to do to comply with key parts of the Drinking Water Standards and the Water Services Act.
Drinking water safety plan or DWSP	A risk management tool that outlines how suppliers aim to ensure a safe, reliable and resilient supply of drinking water (refer to s 31 of the Water Services Act for a full list of what a DWSP must cover).
Drinking Water Standards (the Standards)	The Water Services (Drinking Water Standards for New Zealand) Regulations 2022, which sets the MAVs for a range of determinands that can affect the safety of drinking water.
Drinking water supplier	A person who supplies drinking water through a drinking water supply, which includes the owner and operator of a drinking water supply (refer to the Water Services Act 2021, s 8 for a full definition), but does not include a domestic self-supplier.

Term	Definition
Drinking water supply	Infrastructure and processes used to abstract, store, treat, transmit or transport drinking water for supply to consumers or another drinking water supplier. Does not include temporary or unplanned drinking water supplies or domestic self-supplies (refer to the Water Services Act 2021, s 9 for a full definition).
Escherichia coli (E. coli)	A bacteria species used as an indicator of faecal contamination of water. The presence of *E. coli* in a water sample almost certainly indicates pathogens harmful to human health are present.
Informational notice	A consumer advisory used to provide information where there is not an imminent risk to public health (e.g. where there are interruptions or restrictions to the supply of water and some chemical exceedances).
Maximum Acceptable Value or MAV	The Drinking Water Standards set limits for the concentration of determinands in drinking water. The limits are referred to as Maximum Acceptable Values (MAVs). The MAVs for any determinand must not be exceeded at any time.
Microbiological organism	Living organisms too small for the naked eye to see. This includes bacteria, viruses, protozoa and algae, collectively known as microbes.
Monitoring	Sampling and analysis of drinking water to test for compliance with the Drinking Water Standards or process control by detecting changes in the concentrations of its constituent determinands or deviations of these from target values.
MPN	Most probable number (MPN) is a statistical method used to estimate the number of viable microorganisms in a sample. Bacterial samples as generally reported as MPN/100ml or CFU/100ml.
Non-compliant	When a drinking water supply has not met legislative requirements. Refers specifically to non-compliance with Drinking Water Standards in the context of s 22 of the Act.
Notifications	When suppliers and accredited laboratories notify the Authority if any tests undertaken as part of their monitoring requirements show non-compliance with the Drinking Water Standards or Drinking Water Quality Assurance Rules.
Registered supply	A drinking water supply registered in accordance with the requirements of Part 2, Subpart 7 of the Act.
Residual disinfection	A disinfectant, typically chlorine, remaining in or added to drinking water after it leaves a treatment plant to act as a barrier to recontamination in a distribution system.
Safe drinking water	Water that is unlikely to cause a serious risk of death, injury or illness (refer to the Water Services Act 2021, s 7 for a full definition).
Source water	Water body where water is abstracted for use in a drinking water supply. Sources include rivers, streams, lakes, aquifers and collected rainwater.
Toby, water	A water shut-off valve between a private connection and the public network, often considered the point of supply from a reticulated network.
Unregistered supply	A drinking water supply that is operating but not registered in accordance with the requirements of Part 2, Subpart 7 of the Act.
Unverified supply	Suppliers that are registered but have not confirmed their details and are not included on the public register of drinking water supplies.
Water carriers	A drinking water supplier that transports drinking water (other than by reticulation) for the purpose of supplying it to consumers or another drinking water supplier.
Water services sector	Refers to any organisation or agents involved with the regulation, provision or management of water supply, trunk sewers, local reticulation, sewage treatment and stormwater assets.

Common chemical determinands

Chemical	Description
Aluminium	Aluminium is typically dosed into raw water to help coagulate particles in water so that they can be removed by sedimentation and filtration processes. Optimised treatment plants that dose aluminium into the raw water typically leave only a small amount of aluminium residual in the treated water (usually less than 0.1 mg/L). At 0.1 mg/L, aluminium is estimated by the WHO to contribute to only 4% of overall exposure to aluminium, the majority of aluminium being present in food. Also, a teaspoon of antacid can contain 4,000 times the amount of aluminium than a litre of drinking water from a well-controlled treatment plant.
Arsenic	Arsenic in drinking water can originate from industrial activity or be naturally occurring. Water that has been exposed to volcanic rock and sulfide mineral deposits can contain high levels of arsenic. Water suppliers that use sources in volcanic areas or who take groundwater must take action to reduce levels of arsenic to below the MAV in their drinking water. Suppliers do not have to notify us of exceedances of the MAV in source water, but if they do find elevated levels in source water, they must test for the chemical in their drinking water to ensure it is removed. Some arsenic can be removed by filtration alone, but other forms of arsenic must be removed by a more complex oxidation and filtration step.
Chlorate	Chlorate is a compound that is generally only found in drinking water where solutions of hypochlorite are used to maintain a residual disinfectant. Chlorate forms in these solutions as hypochlorite solutions age. The formation of chlorate can increase when solutions are highly concentrated, when solutions are warmer, and the longer a solution is stored, whether in transit or in a storage facility. There are many assurance measures that suppliers can take to ensure their hypochlorite solutions do not contain elevated levels of chlorate, and we expect suppliers to be implementing good practices when they choose to use hypochlorite solutions.
Chlorine	Many suppliers dose chlorine for one of two reasons, as a primary disinfectant to kill bacteria pathogens or as a residual disinfectant to ensure they maintain the quality of their treated water as it transits their network to consumers. Suppliers are required to notify us when chlorine levels exceed 5 mg/L. This level of chlorine would be akin to drinking water from a well-maintained spa. Some people with sensitive skin conditions can experience issues when coming into contact with water chlorinated to such high levels. It is important that suppliers don't dose over this level of chlorine as it can lead to acute illness and even injury. An optimised and well-maintained drinking water supply can maintain a level of chlorine between 0.2 mg/L and 1 mg/L. Water within this range of chlorine levels also tastes much better than with higher levels of chlorine.
Lead	It is possible for lead found in drinking water to originate in the source water, but it is far more commonly due to taps and other plumbing materials that are found in drinking-water plumbing in most houses. Lead can leach from poor quality taps, brass fittings and fixtures, copper pipes with lead-containing solder, pure lead pipes, and other lead containing plumbing materials in short periods of time. Lead is one of the few determinands where poor sampling technique or poor-quality plumbing materials at a drinking water sampling site can contribute to it appearing like there is lead in the mains supply, when really it was from the tap or pipes between the tap and mains that the sample was taken from. Generally, plastic, newer copper pipes and stainless steel do not leach lead, particularly when flushed thoroughly. We expect suppliers who are required to sample for lead in their distribution networks to understand these concepts, and ensure their sampling points do not contain lead materials and their sampling process accounts for good practice when taking samples which will be analysed for lead.
Manganese	Manganese can cause a number of issues when it comes to operating a drinking water supply. Manganese can cause aesthetic issues with the supply, which do not result in any increased risk to public health. Manganese has a MAV so it can be a public health risk if not removed from source waters. Manganese can be removed by an oxidation and filtration step, amongst other processes. Manganese can be found in surface waters, particularly lakes and reservoirs that are stratified, and in groundwaters exposed to deposits rich in manganese.
Nitrate	Nitrate (NO_3) and nitrite (NO_2) are forms of nitrogen in the environment, both natural and human made. Large amounts of nitrate in drinking water can be harmful to a person's health because it can change into nitrite in the human body. Low levels of nitrate in drinking water may be naturally occurring and sources of nitrogen is a vital for many aquatic organisms. When nitrate is found at higher levels in drinking water, it is often from fertilisers, livestock waste and failing septic tanks, drainfields and drywells. The Ministry of Health is the policy agency for nitrates in drinking water and they are maintaining a watching brief on relevant international research and regulation.

Common barrier processes

Barrier	Description
Source protection and monitoring	Source water protection can reduce the level of protozoa treatment required. An implemented source water risk management plan (SWRMP) can reduce the risk to raw water and ensure treatment is effective for the quality of the source water. This may include implementation of preventative measures such as riparian zones around water bodies free from livestock grazing, ensuring discharges upstream of drinking water treatment plants are operationally effective, and ensuring groundwater is abstracted through sanitary bores.
Coagulation, flocculation and sedimentation	These processes are commonly used in surface water sources and when optimised enhance filtration barriers. It may also be used to reduce the colour of the water.
Oxidation	Oxidation may be combined with other barriers, such as filtration, to remove chemicals like arsenic and manganese from water. It may also be used to make the water more aesthetically pleasing.
Filtration	Filtration removes physical particles from water. This includes protozoa, like cryptosporidium and giardia, as well as chemicals that may be present like arsenic and manganese particles. Filtration can be an essential step for the effectiveness of other treatments, including ultraviolet (UV) treatment and chlorination.
Ultraviolet (UV) treatment	UV treatment uses ultraviolet light of a particular wavelength (254 nanometres) to disinfect water of bacteria, protozoa and, to a lesser extent, viruses. On contact, UV damages the genetic code of a microbiological organism, preventing pathogens from reproducing.
Ozone treatment	Ozone is a powerful disinfectant that is effective against all pathogens that present a risk to drinking water. It is also effective at lowering cyanotoxins and many other chemical compounds.
Chlorination (primary disinfection)	Adding chlorine kills most bacteria and viruses in a process known as primary disinfection.
Chlorination (residual disinfection)	Chlorine can continue to protect water in the pipes between the treatment plant and the tap, at a lower concentration than is typically applied for primary disinfection. Monitoring residual chlorine levels in distribution networks can also help to find other problems (e.g. low chlorine levels can be a sign of contamination or other issues.

Kupu Māori

Term	Definition
Aotearoa	New Zealand.
Hapū	Kinship group, tribe.
Hinekōrako	Our regulatory and intelligence system. This name was gifted to Taumata Arowai by Te Atiawa and means a rainbow made with moonlight.
Iwi	Extended kinship group, tribe.
Mana	Prestige, authority, control, power.
Mana whenua	Customary authority exercised by an iwi or hapu in an identified area.
Mauri	Life force.
Tangata	People, persons, human beings.
Tangata whenua	People of the land. In relation to a particular area means the iwi, or hapu, that holds mana whenua over that area.
Te Mana o te Wai	At its core, Te Mana o te Wai is about restoring and preserving the balance and wellbeing between the wellbeing of water, the environment, and our communities.
Te Puna	The Māori advisory group for Taumata Arowai, established by s 14 of the Taumata Arowai – the Water Services Regulator Act 2020.
Wai	Water.
Whakatauākī	Proverbs or significant sayings that give some insight into a traditional Māori world.

Appendix

Compliance Monitoring and Enforcement Strategy

The Compliance Monitoring and Enforcement (CME) Strategy 2022-25 has areas of focus and a plan over three years to develop products and services that will assist the water services sector to meet the requirements of the Act or the Authority to undertake its role as regulator. Progress on the plan is provided in the table below.

As required by the Act, we are updating the CME Strategy to communicate to the sector our regulatory priorities over the next three years. The new CME Strategy will benefit from the last three years of information the Authority has received from suppliers and accredited laboratories. The updated CME Strategy will be published in July 2025.

Focus area	Year 2 (July 23 – June 24)	Year 3 (July 24 – June 25)	Comment for 2024
Build the regulatory system and set expectations			
Give effect to Te Mana o te Wai	• Review and update source water risk management guidance to reflect deeper understanding and expectations of Te Mana o te Wai has been paused. • Produce and publish best practice guidance for giving effect to Te Mana o te Wai has been paused.	• Review and update source water risk management guidance to reflect deeper understanding and expectations of Te Mana o te Wai has been paused. • Build Te Mana o te Wai into compliance monitoring activities for the Authority, including developing audit criteria for drinking water suppliers has been paused.	• In line with the Government's rebalancing of Te Mana o te Wai, we are considering our organisational approach.
Drinking water supplier guidance and information	• Review and update of guidance is ongoing. • Information sharing for suppliers and local government entities is in progress. • Guidance for drinking water suppliers to meet their obligations under the Drinking Water Quality Assurance Rules and how to apply the new Drinking Water Standards is ongoing. • Continuing to develop guidance based on knowledge of the sector from engagement activities (e.g. acceptable solution options, monitoring and testing requirements, renewal of registration details). • Good practice expectations review is continuing.	• Review and update of guidance is ongoing. • Issuing discussion documents on proposed authorisation framework for drinking water suppliers – particular focus on local authority and council-controlled organisations to be authorised drinking water suppliers – awaiting clarity on possible legislative changes to timeframe and scope of authorisations. • Good practice expectations review is continuing.	• Rules for supplies serving 500 or fewer people were revised at the end of 2024 (came into force 1 January 2025). • Initial guidance and webinar on the revised Rules has been provided to water suppliers. • Further guidance for suppliers on how to meet their obligations under the revised Rules is being developed. • Examples of good practice have been included in guidance on testing requirements. • A team has been established to focus on delivering more guidance to the sector.

Focus area	Year 2 (July 23 – June 24)	Year 3 (July 24 – June 25)	Comment for 2024
Marae/ Papakāinga engagement	• Continue to register marae/ kāinga supplies in Hinekōrako. • Publish fit-for-purpose marae/ kāinga specific guidance for supply of safe drinking water – a programme of work is in progress.	• Review of guidance based on previous year's experiences and improving performance/ capability is in progress. • Developing solutions for suppliers that reflect tikanga of mana whenua (whānau/ hapū/iwi) is ongoing.	• Partnered with Te Runanganui o Ngāti Porou to engage and upskill local drinking water suppliers in Te Tairāwhiti (East Coast) on safe drinking water by holding three community hui on local marae to showcase emergency management processes, acceptable solutions, registering a supply, infrastructure maintenance for papakāinga/kura/marae and domestic households. • Continuing to provide advice and guidance to marae/ papakāinga who have tested positive for *E. coli*.
Unregistered supplies: (marae/ papakāinga; rural; small population supplies)	• Design, develop and test proposed regulatory requirements has been paused. • Publish good practice guidance for small community supplies has been paused.	• Publish regulations and guidance for registration of unregistered supplies has been paused.	• During Te Ihorangi Tairawhiti engagement, the Authority provided substantial advice and guidance on how to register a supply to representatives of marae/ papakāinga/small supplies who attended this community hui. One marae reached out to begin the registration process.
Develop regulatory instruments: (regulations, rules; standards; notices)	• Complaints regulations have not been started. • Infringement regulations are awaiting clarity on possible legislation changes. • Acceptable solutions as required based on engagement with sector groups – review of current acceptable solutions was in progress. • Update of Drinking Water Network Environmental Performance Measures was in progress.	• Review regulatory system needs in anticipation of entities was in progress. • Developing regulations to support authorisation of council-controlled organisations and local authority drinking water supplies was not started. • Update of Drinking Water Network Environmental Performance Measures was in progress. • Information, format, and content, sharing rules was in progress.	• Published guidance and policy position to clarify supplier responsibilities for end-point treatment systems under an acceptable solution. • Updates to the acceptable solutions were initiated in 2024 and will be implemented in 2025. • Update to the drinking water and wastewater network environmental performance came into effect. • Updates to the Rules for small and medium sized supplies were completed and came into effect on 1 January 2025.
Transition registered drinking water supplies	• Continue the process of transferring registered supplies serving populations of fewer than 500 people was completed as far as possible. • Renewal of council-controlled organisations and large registered supplies was completed.	• Renewal of all registered supplies was completed as far as possible, but registration cannot be renewed if a DWSP has not been submitted.	• We continue to engage with suppliers around their requirements to lodge a DWSP.

Focus area	Year 2 (July 23 – June 24)	Year 3 (July 24 – June 25)	Comment for 2024
Monitoring performance			
Review and audit of drinking water safety plans and supplier performance	• Carry out review of DWSP in accordance with the review methodology is ongoing. • Review of plans as required in response to safety concerns is ongoing. • Implement audit programme and carry out audit activity in accordance with the programme is not being progressed at this time.	• Carry out review of DWSP in accordance with the review methodology is ongoing. • Review of plans as required in response to safety concerns is ongoing. • Implement audit programme and carry out audit activity in accordance with the programme has been paused.	• DWSP review methodology was reviewed and amended to reflect what was learnt in the first year of undertaking reviews. • Focus moved to the risks with greatest influence on the safety of drinking water and ensuring the DWSP clearly showed a multi-barrier approach to drinking water treatment.
Receive and monitor notifications of non-compliance	• Receive and respond to notifications is ongoing. • Review of notification system is in progress.	• Receive and respond to notifications is ongoing. • Review of notification system was completed.	• Review of notifications and incident procedure was in progress.
Supplier water quality monitoring data reporting	• Registered suppliers start monitoring and reporting results as specified in the Water Quality Assurance Rules and Drinking Water Network Environmental Performances Measures has been in progress. • Reporting as required by exemption condition is ongoing.	• Registered suppliers' report monitoring results as specified in the Drinking Water Quality Assurance Rules and Drinking Water Network Environmental Performances Measures has been in progress. • Reporting as required by exemption condition is ongoing.	• Developed a data model and validation process to ensure suppliers could see what we would be reporting about their supplies and had sufficient opportunity to correct their reporting. • Worked with councils to ensure they were aware of what we were reporting about them. • Continued to develop and improve the data model for 2024, and identified multiple improvement opportunities.
Drinking water incidents & emergencies			
The Four Rs of Civil Defence and Emergency Management **Declaring emergencies**	• Internal training and capability maintenance is ongoing. • Carry out annual drinking water emergency exercise is completed. • Regional and national coordination activities has been completed. • Debriefing supplier responses to emergencies to inform continuous improvement is ongoing. • Assess DWSP response procedures has been completed.	• Internal training and capability maintenance is ongoing. • Carry out annual drinking water emergency exercise is planned for late 2025. • Regional and national coordination activities. • Debriefing supplier responses to emergencies to inform continuous improvement is ongoing. • Assess DWSP response procedures is ongoing.	• Participated in the National Exercise Programme Exercise Ru Whenua in June/July 2024. • Knowledge of CIMS course attended by two kaimahi. • Response and Recovery Leadership programme Part 1 completed by one kaimahi. • Ongoing contribution to the development of the National Catastrophic Handbook. • Internal debrief undertaken for the Waikato River arsenic incident. • Maturity Assessment completed to assess emergency management capabilities. • DWSP reviews included reviewing emergency response procedures.

Focus area	Year 2 (July 23 – June 24)	Year 3 (July 24 – June 25)	Comment for 2024
Targeted interventions & enforcement activities			
Exemptions	• Receive and process exemption applications has been ongoing. Enforce non-compliance with exemption conditions has been ongoing.	• Receive and process exemption applications has been ongoing. • Enforce non-compliance with exemption conditions has been ongoing.	• As of 31 December 2024, one application for residual disinfection exemption was in progress, one was granted (Rakaia Huts – Selwyn District Council) and five exemptions were not granted. • As of 31 December 2024, one application for general exemption was in progress, and two applications were granted (Torrent Bay Township (2023) and Department of Conservation (2024)).
Statutory directions/ Remedial actions	• Exercise statutory decision making and issue directions and require remedial actions as appropriate has been ongoing. • Assurance review of statutory decisions has been ongoing.	• Exercise statutory decision making and issue directions and require remedial actions as appropriate has been ongoing. • Assurance review of statutory decisions has been ongoing.	• An assurance approach is in effect which includes review or preparation of proposed instruments by Legal and advice on associated decisions and sign off by Head of Operations. • Operational policies, procedures and training for staff continue to be developed and updated as required.
Enforceable undertakings	• Implement enforceable undertaking framework for drinking water suppliers has been completed.	• Accept enforceable undertakings as business-as usual regulatory function is ongoing.	• We have received inquiries from drinking water suppliers about enforceable undertakings but to date no applications have been received.
Higher-level enforcement activity	• Implementation of an infringements regime was paused while awaiting clarity on possible legislation changes.	• Prosecutions and s 83 appointments as required.	• A written warning was issued to an employee of the Tararua District Council following an investigation into a possum contamination event at the Woodville West treated drinking water reservoir. A direction was also issued to this Council for the same incident. • No prosecutions have occurred, and no s 83 appointments were made in 2024.[45]

45 Under s 83 of the Act, the Authority may impose statutory management on suppliers.

Methodology of Rules Performance Analysis

The reports from suppliers on the Drinking Water Quality Assurance Rules (the Rules) are a complex and nuanced set of data. We have made our best attempts to reflect the data in a way that simply, fairly and accurately portrays suppliers' self-reported performance against the Rules. Due to limitations in the way the data is reported, we cannot report on compliance of suppliers, but we can report on the indicative performance of suppliers based on their levels of compliance with specific sets of rules.

This section outlines the sets of rules used in performance categories and the performance statements assigned based on analysis of these categories. The validation checks and assumptions applied during the analysis are explained, as are the calculations used to produce the performance statements.

The performance statements that are produced by this methodology are based on the supplies' aggregate performance rate. The performance statement categories are:

- 100% reported requirements met: All met
- 95%-99% reported requirements met: Almost met
- 1%-94% reported requirements met: Partially met
- 0% reported requirements met: None met.

A failure to meet the Rules does not always equate to unsafe water being supplied. It is more likely that a failure indicates there is increased risk for the supply that must be managed, or that a supplier lacks the ability to monitor the water quality effectively to ensure the safety of the drinking water. Determining whether the risk from a failure to meet the rules is enough to make the water unsafe is the duty of the supplier. If the water is, or may be, unsafe the supplier is required to notify the Authority separately to Rules reporting.

Data sources

Suppliers report compliance against individual rules via the online platforms Lutra or WaterOutlook, or an Excel template. We will continue our work with suppliers to ensure this reporting is done consistently across the country to improve data quality. To improve data quality with smaller supplies, a webform has been developed for 2025 reporting that is intended to improve reporting data quality.

There are two kinds of rules being reported against that are included in Rules Performance Analysis:

1. Monitoring rules are based on monitoring water quality to determine if the Drinking Water Standards for New Zealand 2022 (the Standards) are being met using grab samples, continuous monitoring equipment or other methods. These rules tend to have samples submitted alongside compliance with the rule, and for most supplies are reported throughout the year at regular intervals.
2. Assurance rules outline activities a supplier needs to undertake that contribute to the provision of safe drinking water (e.g. preparing and implementing a backflow prevention programme or ensuring continuous analysers are calibrated according to manufacturer instructions). These rules tend to have only a compliance statement of TRUE or FALSE for the year.

We used submissions on both types of rules in our analysis across the categories. All reports were due 28 February 2025 for the 2024 calendar year. Extensions were granted until 17 March 2025 in certain circumstances.

Suppliers cannot withdraw and edit reporting submissions, but they are able to resubmit reports. Therefore, where a rule was reported against more than once, the most recent valid report was used assuming that is the corrected version. Where a supplier has requested data to be withdrawn from consideration, this has been handled by manual exclusion.

Supply and component IDs included in the rules reported are matched with corresponding data in Hinekōrako to connect registration details such as supply, supplier and component attributes.

Validations

We do not make assumptions about data that is not reported by suppliers, and nor do we currently audit reporting data. However, we conduct several validation steps to exclude data from performance analysis if it appears to have been reported incorrectly. If a reported rule does not pass the validation process, then it is not considered in the performance analysis. Validation checks in this process are:

- Invalid supply ID – supply ID does not exist in Hinekōrako and therefore cannot determine supply the report relates to
- Invalid rule ID – rule has been reported against a rule ID that does not exist, therefore we cannot determine the parameters of the rule to consider compliance
- Invalid supply component – rule has been reported against a supply component that cannot be identified in Hinekōrako, or the rule has been reported against an incorrect component (e.g. a source rule is reported against a treatment plant component)

- Invalid rule compliance – rule has been reported as non-compliant but no non-compliant periods have been provided or vice-versa. For source rules we only take into account the report of compliance and do not use the non-compliant periods field
- Invalid rule duplicated – specific to excel reports, where a report contains multiple compliance statements against the same rule ID.

We have addressed some issues, like rules which are ambiguous and need further clarification, in our update of the Rules for supplies that serve 500 people or less. These changes came into effect on 1 January 2025 and will be reported on in next year's report. We will address other issues in the next update of the Rules. In the meantime, we have published specific rule guidance and rule clarifications to reduce ambiguity and signal our interpretation for each rule.

Assumptions

In combination with the validation steps, we made the following assumptions in our analysis of rules reports:

1. Extensions to the submission deadline were granted for both 2024 and 2023 data.
    a. While annual reporting for the 2024 calendar year was due 28 February 2025, all reports received for reporting periods in 2024 that were received by 17 March 2025 were used in the calculation of the report.
    b. We granted an extension to suppliers where it was considered appropriate due to issues with reporting software. This was usually a one-week extension to the initial deadline of 28 February 2025 to 7 March 2025, but was longer in some extenuating circumstances. All suppliers who submitted prior to any agreed extension are counted as reporting by the deadline for the 2024 reporting period.
    c. We have included comparative data for 2023 in this year's report. All 2023 reports that were received prior to 31 March 2024 are counted as reporting by the deadline for the 2023 reporting period.
2. Suppliers can correct their reports at any time, but the Drinking Water Regulation Report 2024 (DWRR) is an analysis of data at a fixed time.
    a. We use the most recent reports on rules to calculate performance. This allows suppliers to correct any mistakes by simply providing another report for a rule.
    b. Suppliers can correct their 2024 reports at any time, though this will not be reflected in the DWRR 2024.
    c. Reports from suppliers who submitted or corrected 2023 reporting are accounted for in this year's report in year-on-year comparisons. This is in part because of a change to performance category definitions this year requiring the 2023 analysis to be updated for accurate comparisons in the DWRR.
3. The compliance reports we received are reported by suppliers and their nominated contacts only. We do not verify or audit this data as it is the responsibility of the supplier to comply with the Rules and report accurately.
4. Only applicable rules are considered in the performance categories.
    a. Only rules applicable to each category, as determined by our technical staff, were used to calculate performance. A list of rules used to calculate performance for each category is given below. Some rules have multiple requirements. Each requirement, what we refer to as a rule ID, is reported individually and treated with equal weighting within each category.
    b. Certain rules are conditional. These rules were either not used in the analysis, or the conditions were incorporated into the analysis. For example, for roof water sources we ensured that only reporting on rules relevant to roof water sources were used in analysis.
    c. Some categories only apply to the supplies following certain rule levels, so not all supplies will be analysed for every performance category. If a supply population indicates a compliance or performance category does not apply to that supply and the supplier did not provide a report on any rule in this category, it is labelled as not applicable and omitted for analysis from this category.
5. Some reports are not complete, but we do not make assumptions about data that is not reported by suppliers. As long as one applicable rule in a performance category is reported on correctly for each supply component, performance is assessed and the performance statement is calculated using only the submitted reports.
    a. For example, one supplier may only report their supply complied with five rules, but 10 rules were required to be reported in a category. This supply would be shown as 'all met' with 100% performance for their reported requirements as we cannot make assumptions on the missing data.
    b. Another supply may report their supply complied with nine rules and did not comply with one rule. This supply would be reported as requirements being 'partially met' with 90% performance.
6. Equal weighting is applied to each report and each supply component (source, treatment plant, or distribution zone) analysed in a category and averaged.

Considering these assumptions, it's important to note that:

- A supply may be shown as meeting requirements, but it may be missing reports against some rules which could have changed the performance. Therefore, comparative analysis of supplies is not recommended at this time. In the future we plan to incorporate report completeness into our analysis, as well as work with suppliers to provide complete reports.
- We acknowledge that weighting each component's performance to the volume sourced, produced and consumed by each component would be more representative of performance. However, we do not have enough information to perform this calculation in context of the Rules.

Performance statement calculation

1. Prior to the performance calculation, the supply performance in any given category is checked against the following tests:
    a. If the category does not apply (e.g. general exemption or not applicable to supplies of that size) the supply is given a performance statement 'Not applicable'.
    b. If a supply has not reported against any of the rules in a given category that applies to them the supply is given a performance statement 'No reports found.'
    c. If any of the reports in a performance category have not passed the validity tests described previously, the supply is given a performance statement 'not assessed'.
2. If a supply has provided valid reporting against an applicable category, we calculate aggregate compliance for all the rules in a category.
3. There are a range of compliance periods for rules ranging from one day to a year. To ensure consistency across rule IDs in a performance category we convert compliance periods and reports of non-compliant periods into days.
    a. For example, a supply reports there were two non-compliant periods for a rule with a monthly compliance period. This was converted to 61 non-compliant days in the 366 days reported (as 2024 was a leap year). This provides the same percentage of compliance for the rule but it is then able to be aggregated with other rules in the category.
4. There are some cases that require a slightly different approach. These cases are:
    a. When a rule does not have a compliance period (i.e. the source monitoring rules)
    b. Where supplies report against a period that is less than the compliance period (e.g. reporting for a single month against a rule with an annual compliance)
    c. When supplies report more non-compliant periods than would be possible (i.e. reporting 366 non-compliant months in a period spanning 12 months).

    In these cases, we ignore the non-compliant periods reported and use the stated rule compliance of TRUE or FALSE. If the compliance is reported as FALSE the rule ID is taken to be 0% compliant for the period reported. There is a risk that we are understating compliance if a supply has misinterpreted the rules, and we will continue to work with suppliers to improve report completeness and accuracy.
5. The aggregate compliance for all rules in a category is then calculated by the following:

$$Performance\ Rate_{\ x} = 1 - \frac{\sum i \ \in s\ Non\ Compliant\ Periods\ in\ Days_{\ i}}{\sum i \ \in s\ Days\ in\ Reporting\ Period_{\ i}}$$

    Where S is the set of rules in the performance category.

    This provides an overall compliance rate from 0%-100% weighted according to the number of days reported. This aggregate compliance calculation factors in when a supply reports compliance for a set of rules that only applied for a small part of the year (e.g. operating a source only during water restrictions in summer).
6. Finally, the supply performance value is converted to a description for each category and represents an average performance for the whole supply. For each category, we report on the number of council supplies which met their requirements with the following groupings:
    - 100% reported requirements met: All met
    - 95%-99% reported requirements met: Almost met
    - 1%-94% reported requirements met: Partially met
    - 0% reported requirements met: None met.

Recent improvements

We made improvements to the Hinekōrako portal in early 2025 to improve the quality of rules reporting by suppliers. The new feature provides suppliers with a supply summary table that is populated with performance data for their latest rules reporting. This enabled suppliers to download and review their latest rules reporting, giving them the opportunity to rectify issues that would present incorrectly in the supply performance categorisation.

With this improvement to the reporting portal, feedback was being provided directly to suppliers automatically, and we were able to work with suppliers that had difficulty submitting reports and improve reporting rates compared to last year.

We have reviewed reporting requirements for suppliers serving less than 500 people to reduce regulatory burden. These revised rules came into effect on 1 January 2025. We will continue to work to improve our systems and processes to incorporate additional validation checks for reporting against rules. This will likely help to reduce the reporting administrative burden on suppliers. We are currently reviewing reporting requirements for supplies serving more than 500 people to understand whether they may be reduced. Any changes to reporting requirements would require a revision to secondary legislation (i.e. the Rules, including public consultation).

Future reports

We are aware of key improvements to the data collection process that will improve the insights and value of future reports.

First, we produce an indicator of supply performance instead of assessing compliance due to a limitation in data collection. While suppliers following Level 3 rules record their daily compliance against rules such as those in bacterial and protozoal treatment categories, we do not collect the data necessary to accurately calculate the specific days supplies are non-compliant. The bacterial and protozoal rules have multiple options to meet requirements, where one treatment barrier is non-compliant one day another may be able to provide sufficient treatment to meet compliance. Without compliance periods being reported with dates, we may underestimate or overestimate compliance, depending on which days and components in a supply are non-compliant for a given period.

Also, where there are multiple components in a supply (such as treatment plants or distribution zones), our methodology gives equal weight to each component within the supply. We do not weight performance for population served or volume of drinking water produced. This means a non-compliance at a treatment plant serving a million people is considered in the same way as a treatment plant serving 100 people.

In future reports we intend to look at supplier compliance and treatment performance while factoring in the nuance of effective barriers and scale of a supply component in the overall supply. Improvements in the analysis to produce these include improvements to our reporting tools, reviewing the requirements of the rules and gathering feedback from suppliers. Potential improvements include:

- consider how to integrate population weighting into our analysis of a supply's compliance or treatment performance
- consider whether protozoa and bacteria barriers are operating effectively, factoring in where multiple barriers are provided and dates of non-compliant periods
- analyse whether suppliers are reporting their sample results, verifying that these align with the requirements of the Rules, and further analysis of drinking water quality in New Zealand
- analysing whether suppliers are testing for additional determinands above the requirements of the Rules based on their source water risk management plan (SWRMP)
- improve our systems to check the completeness and correctness of each report.

2024 Rules performance categories

Table 11: Rules included in each performance category

	Source water monitoring	Cyanobacteria risk assessment	Treatment for small and medium supplies	Bacteria treatment for large supplies	Protozoa treatment for large supplies	Treatment chemical monitoring for large supplies	Bacterial monitoring	Distribution chemical monitoring	Distribution safety assurance
Level 1 Rules	S1.1 S1.2	None	T1.8	Not assessed	Not assessed	Not assessed	D1.1	Not assessed	None
Level 2 Rules	S2.1 S2.2	S2.4	T2.1 – T2.3 T2.9 – T2.14 T2.18 – T2.21	Not assessed	Not assessed	Not assessed	D2.1 D2.5	D2.1	None
Level 3 Rules	S3.3	S3.7	None	T3.1 to T3.18	T3.22	T3.92 T3.93	D3.19 D3.29	D3.22 D3.24	D3.1 – D3.17

Laboratory notifications of *E. coli* detections by supply

The risk associated with *E. coli* detections will vary depending on individual circumstances of the supply, such as affected population size, the sampling location, whether the cause of the *E. coli* detection has been identified, the levels of free available chlorine in the system, and the effectiveness and timeliness of the supplier's response.

E. coli detections also do not mean that the entire population served by the supply is at risk. For example, the Watercare Services Ltd notification related to a sample taken from a distribution system serving a population of 50,000 people, and did not affect the entire population served by the supply.

Laboratory notifications of *E. coli* MAV detections are discussed in more detail in the "Drinking Water Safety" section of this report.

Table 12: Council supplies with laboratory notifications of *E. coli* detections

Supplier name	Supply name	Number of notifications	Supply population
Ashburton District Council	Montalto	1	90
Auckland Council	Whatipu, Huia	1	50
Clutha District Council	Waitahuna Rural	15	922
Clutha District Council	Stirling	1	743
Clutha District Council	Milton	1	2,929
Hastings District Council	Waipatiki	1	20
Horowhenua District Council	Foxton and Foxton Beach	1	1,900
Kāpiti Coast District Council	Otaki	1	7,700
Mackenzie District Council	Allandale	1	200
Ōtorohanga District Council	Taupaki	2	20
Rangitikei District Council	Ratana	1	337
Rotorua Lakes Council	Rotorua Central	1	44,000
Ruapehu District Council	Taumarunui	1	4,870
South Taranaki District Council	Patea	1	1,310
Tasman District Council	Upper Takaka	1	50
Taupō District Council	Whakamaru Settlers Hall	1	25
Thames Coromandel District Council	Pauanui	1	750
Waitaki District Council	Waihemo	1	1,357
Waitaki District Council	Otematata	1	195
Waitaki District Council	Oamaru	1	15,713
Waitaki District Council	Kurow	1	330
Waitaki District Council	Bushy Creek	4	29
Waitaki District Council	Awamoko	1	399
Watercare Services Ltd (Auckland)	Wellsford/Te Hana	1	2,114
Watercare Services Ltd (Auckland)	Auckland	1	1,373,739
Wellington Water	Wellington Region Bulk Water	1	350,000
Westland District Council	Franz Josef	2	2,611
Total: 19	**27**	**46**	**1,812,403**

Table 13: Government supplies with laboratory notifications of *E. coli* detections

Supplier name	Supply name	Number of notifications	Supply population
Department of Conservation	French Pass Camp	1	48
Department of Conservation	Hans Bay – Lake Kaniere Camp Ground	4	160
Ministry of Education	Ahipara School	1	215
Ministry of Education	Apiti School	1	30
Ministry of Education	Aranga School	3	40
Ministry of Education	Awanui School	1	99
Ministry of Education	Awhitu District School	1	140
Ministry of Education	Ballance School	1	30
Ministry of Education	Broadwood Area School	1	140
Ministry of Education	Brookby School	1	106
Ministry of Education	Colyton School	1	105
Ministry of Education	Hatea-A-Rangi	1	80
Ministry of Education	He Puna Ruku Matauranga o Whangaruru	3	52
Ministry of Education	Hira School	1	80
Ministry of Education	Horeke School	3	35
Ministry of Education	Huirangi School	1	120
Ministry of Education	Kahutara School	1	107
Ministry of Education	Kairanga School	2	180
Ministry of Education	Kaitoke School (Claris)	3	53
Ministry of Education	Karaka School	1	203
Ministry of Education	Linkwater School	4	50
Ministry of Education	Macraes Moonlight School	1	30
Ministry of Education	Makahu School	1	13
Ministry of Education	Makauri School	1	170
Ministry of Education	Mangamuka School	1	45
Ministry of Education	Mangawhai Beach School	3	630
Ministry of Education	Maraetai Beach School	1	290
Ministry of Education	Matakohe School	3	60
Ministry of Education	Mokoia Primary School	2	40
Ministry of Education	Motu School	1	15
Ministry of Education	Muriwai School	2	39
Ministry of Education	Ngamatapouri School	1	11
Ministry of Education	Ngata Memorial College	5	126
Ministry of Education	Ngataki School	1	40
Ministry of Education	Ohinewai School	1	111
Ministry of Education	Okiwi School	4	20

Supplier name	Supply name	Number of notifications	Supply population
Ministry of Education	Opiki School	8	140
Ministry of Education	Oroua Downs School	1	100
Ministry of Education	Otaua School	4	140
Ministry of Education	Ouruhia Model School	2	103
Ministry of Education	Pamapuria School	1	180
Ministry of Education	Paparimu School	2	50
Ministry of Education	Pitt Island School	1	9
Ministry of Education	Pokuru School	2	150
Ministry of Education	Pukeokahu School	1	15
Ministry of Education	Putere School	1	15
Ministry of Education	Putorino School	1	20
Ministry of Education	Rere School	1	32
Ministry of Education	Springdale School	1	60
Ministry of Education	Tangiteroria School	1	60
Ministry of Education	Tapu School	2	20
Ministry of Education	Tautoro School	4	165
Ministry of Education	Te Kura a Iwi o Pawarenga	1	17
Ministry of Education	Te Kura Kaupapa Maori o Mangatuna	1	30
Ministry of Education	Te Kura Kaupapa Maori o Te Waiu o Ngati Porou	2	125
Ministry of Education	Te Kura Kaupapa Maori o Tokomaru	1	40
Ministry of Education	Te Kura O Ngaati Hauaa	1	120
Ministry of Education	Te Kura o Ngapuke	1	70
Ministry of Education	Te Paina School	2	90
Ministry of Education	Te Waha O Rerekohu Area School	11	110
Ministry of Education	Tikitiki School	1	40
Ministry of Education	Tinopai School	1	50
Ministry of Education	TKKM o Huiarau	1	80
Ministry of Education	TKKM o Tapere-Nui-A-Whatonga	1	40
Ministry of Education	Totara North School	4	50
Ministry of Education	Umawera School	2	30
Ministry of Education	Waimauku School	1	800
Ministry of Education	Wainui School	1	235
Ministry of Education	Waitaria Bay School	1	30
Ministry of Education	Walton School	1	120
Ministry of Education	Whakarongo School	1	499
Ministry of Education	Whangara School	1	133
Ministry of Education	Whitikahu School	1	80
Total: 2	**73**	**134**	**7,761**

Table 14: Community and private supplies with laboratory notifications of *E. coli* detections

Supplier name	Supply name	Number of notifications	Supply population
Artesian & Solway Water Limited	Rapid Water Delivery Limited T/A Artesian & Solway Water	1	N/A*
Beachlands Network Ltd	Beachlands Networks	1	410
Devich Road Limited	Devich Road Limited	2	N/A*
Duncan Bay Residents Association Incorporated	Duncan Bay	1	22
Fonterra Waitoa	Waitoa	1	500
Hautope Water Scheme Incorporated	Hautope Water Scheme	1	50
Lauder Water Co Limited	Lauder	1	32
Living Springs Trust	Living Springs	2	39
Mackay Subdivision Water Supply Association	Mackay Subdivision, Waihou	4	75
Matakana Water Limited	Matakana Water Ltd	1	N/A*
Matihetihe Marae	Matihetihe Marae	2	98
Ngai Tupoto ki Motukaraka Trust	Manawatawa	1	N/A*
Para Para Water Supply Society	Para Para	11	68
Strath Clyde Water Limited	Strath Clyde Water Limited	1	145
Tatua Co-operative Dairy Company Limited	Tatua Co-operative Dairy Co Ltd	1	420
Te Puru Community Charitable Trust	Te Puru Park Leisure Centre	2	100
Temple Basin Ski Club Incorporated	Temple Basin Skifield	1	20
Tui Ridge Park Ltd	Tui Ridge Park	1	100
Tukurua Water Supply Society Incorporated	Tukurua	2	100
Waiheke Aquifers Limited	Waiheke Aquifers Ltd	1	N/A*
Waitomo Holdings Limited	Waitomo Caves	1	500
XS Services Ltd	KW Shareholders Ltd trading as XS Services	1	N/A*
Total: 22	**22**	**40**	**2,679**

*These supplies are water carrier services or water carrier supplies. Water carriers do not have distribution zones, and therefore do not have a registered population.

Supplier notifications of *E. coli* detections with no laboratory notification

The tables below list the four supplies where we received notification from a supplier of an *E. coli* detection, but the laboratory failed to meet its duty under the Act to notify the Authority.

Table 15: Supplier notifications of *E. coli* detections where there was no laboratory notifications

Supplier name	Supply name	Number of notifications	Supply population
Clutha District Council	Tapanui	1	760
Clutha District Council	Tuapeka West	1	276
Stratford District Council	Stratford	1	6,773
Ministry of Education	Otewa School	1	90
Total: 4	**4**	**4**	**7,889**

Laboratory notifications of chemical MAV exceedances by supply

Table 16: Council supplies with laboratory notifications of chemical MAV exceedances

Supplier name	Supply name	Supply population	Number of notifications	Determinand
Auckland Council	Atiu Creek Regional Park	400	5	Disinfection by-product
Auckland Council	Rangihoua/Onetangi Sports Park	400	1	Disinfection by-product
Auckland Council	Tawharanui Regional Park	400	2	Disinfection by-product
Auckland Council	Whakanewha Regional Park	400	1	Disinfection by-product
Central Otago District Council	Omakau/Ophir	352	2	Aluminium
Chatham Islands Council	Kaingaroa, Chatham Is.	60	5	Disinfection by-product
Chatham Islands Council	Waitangi, Chatham Is.	170	1	Disinfection by-product
Clutha District Council	Lawrence	430	8	Aluminium
Clutha District Council	Lawrence	430	2	Chlorine
Clutha District Council	Milton	2,929	1	Chlorine
Clutha District Council	Milton	2,929	1	Disinfection by-product
Clutha District Council	Moa Flat	534	10	Aluminium
Clutha District Council	North Bruce Rural	708	64	Aluminium
Clutha District Council	North Bruce Rural	708	2	Disinfection by-product
Clutha District Council	Richardson Rural	1,016	4	Aluminium
Clutha District Council	Stirling	743	4	Aluminium
Clutha District Council	Tapanui	760	5	Aluminium
Clutha District Council	Tuapeka West	276	1	Aluminium
Clutha District Council	Tuapeka West	276	9	Chlorine
Clutha District Council	Waitahuna Rural	922	24	Aluminium
Clutha District Council	Waitahuna Rural	922	1	Chlorine
Clutha District Council	Waitahuna Rural	922	24	Disinfection by-product
Far North District Council	Kawakawa/Moerewa	3,500	2	Lead
Gisborne District Council	Whatatutu	200	17	Disinfection by-product
Gisborne District Council	Whatatutu	200	1	Manganese
Hamilton City Council	Hamilton	185,300	7	Arsenic
Hastings District Council	Waipatiki	20	46	Disinfection by-product
Hastings District Council	Waipatu	30	1	Disinfection by-product
Hastings District Council	Whirinaki, Hawkes Bay	784	11	Disinfection by-product
Hastings District Council	Whirinaki, Hawkes Bay	784	1	Chlorine
Hauraki District Council	Kerepehi/Waitakaruru	6,337	9	Disinfection by-product
Horowhenua District Council	Tokomaru	550	3	Copper
Horowhenua District Council	Tokomaru	550	15	Lead
Matamata Piako District Council	Te Aroha	3,838	5	Lead
Queenstown Lakes District Council	Queenstown	44,708	1	Lead
Rangitikei District Council	Marton	4,764	4	Disinfection by-product
Ruapehu District Council	Ohura	160	1	Disinfection by-product
Southland District Council	Ohai/Nightcaps	667	1	Disinfection by-product

Supplier name	Supply name	Supply population	Number of notifications	Determinand
South Waikato District Council	Lichfield	50	1	Disinfection by-product
Tararua District Council	Akitio	113	1	Disinfection by-product
Tararua District Council	Norsewood	200	5	Disinfection by-product
Tararua District Council	Norsewood	200	6	Manganese
Tasman District Council	Dovedale Rural	660	1	Disinfection by-product
Taupō District Council	Kinloch	2,738	8	Arsenic
Taupō District Council	Motuoapa	518	5	Arsenic
Taupō District Council	Omori/Kuratau/Pukawa	1,148	4	Arsenic
Thames Coromandel District Council	Coromandel	1,718	12	Disinfection by-product
Thames Coromandel District Council	Onemana	167	1	Disinfection by-product
Thames Coromandel District Council	Whangamata	4,686	1	Disinfection by-product
Timaru District Council	Downlands	4,550	1	Lead
Waikato District Council	Huntly-Ngaruawahia	17,500	4	Arsenic
Waimate District Council	Lower Waihao Rural	700	2	Nitrate, short term
Waipā District Council	Pukerimu Rural	4,045	1	Arsenic
Waitaki District Council	Kurow	330	1	Lead
Waitaki District Council	Waihemo	1,357	1	Lead
Watercare Services Ltd (Auckland)	Auckland	1,373,739	1	Arsenic
Westland District Council	Fox Glacier	252	1	Aluminum
Westland District Council	Fox Glacier	252	4	Disinfection by-product
Whakatāne District Council	Murupara	1,674	1	Disinfection by-product
Whakatāne District Council	Rangitaiki Plains	2,897	1	Arsenic
Total: 28	**49**	**1,679,000**	**365**	

Table 17: Government supplies with laboratory notifications of chemical MAV exceedances

Supplier name	Supply name	Supply population	Number of notifications	Determinand
Ministry of Education	Colville School	44	1	Lead
Ministry of Education	Piripiri School	10	1	Lead
Ministry of Education	Te Kowhai School	340	2	Nitrate, short term
Ministry of Education	Upper Atiamuri School	72	1	Arsenic
Total: 1	**4**	**466**	**5**	

Table 18: Community and private supplies with laboratory notifications of chemical MAV exceedances

Supplier name	Supply name	Supply population	Number of notifications	Determinand
Brunswick Park 1	Brunswick Park 1	111	2	Arsenic
Brunswick Park 1	Brunswick Park 1	111	1	Manganese
Dry Hills Services Limited	Dry Hills Services Ltd	100	1	Manganese
Gibbston Valley Wines Limited	Gibbston Valley	450	4	Disinfection by-product
St Ignatius Catholic School	St Ignatius Catholic School	800	3	Disinfection by-product
Total: 4	**5**	**1,461**	**11**	

Suppliers that did not notify us of any MAV exceedances

The table below lists the 17 suppliers that did not notify us at all in 2024 for one or more of their supplies where a MAV had been exceeded. The exceedances were notified to us by the laboratory. The Act requires supplies to notify the Authority promptly so that we know that any potential risks to public health are being appropriately addressed.

Table 19: Suppliers that did not notify us of a MAV exceedance for one or more of their supplies

Supplier name	Name of supplies	Supply population
Chatham Islands Council	Waitangi, Chatham Islands	170
Devich Road Limited	Devich Road Limited	N/A
Dry Hills Services Limited	Dry Hill Services Limited	100
Department of Conservation	French Pass Camp	48
	Hans Bay – Lake Kaniere Camp Ground	160
Far North District Council	Kawakawa/ Moerewa	3,500
Kāpiti Coast District Council	Otaki	7,700
Matakana Water Limited	Matakana Water Ltd	N/A
Matihetihe Marae	Matihetihe Marae	98
Ministry of Education	Colyton School	105
	Makauri School	170
	Mangamuka School	45
	Maraetai Beach School	290
	Ngataki School	40
	Oroua Downs School	100
	Pitt Island School	9
	Pukeokahu School	15
	Springdale School	60
	Tapu School	20
	Te Kowhai School	340
	Te Kura o Ngaati Hauaa	120
	Tikitiki School	40
	Tinopai School	50
	TKKM o Huiarau	80
	Whangara School	133
	Whitikahu School	80
Temple Basin Ski Club Incorporated	Temple Basin Skifield	20
Te Puru Community Charitable Trust	Te Pura Park Leisure Centre	100
Tui Ridge Park Ltd	Tui Ridge Park	100
Tukurua Water Supply Society Incorporated	Tukurua	100
Waitomo Holding Limited	Waitomo Caves	500
Watercare Services Ltd (Auckland)	Wellsford/Te Hana	2,114
Whakatāne District Council	Murupara	1,674
XS Services Ltd	KW Shareholders Ltd trading as XS Services	N/A
Total: 18	**35**	**17,921**

Supplier notifications of chemical MAV exceedances with no laboratory notification

The tables below list the three supplies where we received a notification from the supplier of a chemical MAV exceedance, but the laboratory failed to meet its duty under the Act to notify the Authority.

Table 20: Supplier notifications of chemical exceedances where there was no laboratory notification

Supplier name	Supply name	Supply population	Number of notifications	Determinand
Delta Lake Limited	Delta Lake Subdivision	125	3	Arsenic, Manganese & Chlorine
Department of Corrections	Kaitoke	650	1	Chlorine
New Zealand Defence Force	Waiouru Military Camp	2,800	1	Disinfection by-product
Total: 3	**3**	**3,575**	**5**	

Long-term consumer advisories – council supplies with long-term advisories that have been active for over three years

Table 21: Council supplies with long-term advisories that have been active for over three years

Supplier name	Supply name	Supply population	Duration (in years)
Ashburton District Council	Montalto	90	7
Auckland Council	Whatipu, Huia	50	11
Buller District Council	Little Wanganui	65	3
Buller District Council	Mokihinui	100	3
Buller District Council	Waimangaroa	300	8
Hurunui District Council	Hurunui #1	681	9
Hurunui District Council	Kaiwara	129	8
Matamata Piako District Council	Te Aroha[46]	3,838	32
Ōtorohanga District Council	Huirimu	120	4
Ōtorohanga District Council	Kahorekau	130	4
Ōtorohanga District Council	Taupaki	20	4
Southland District Council	Eastern Bush/Otahu Flat RWS	180	10
Tasman District Council	Dovedale Rural	660	6
Thames Coromandel District Council	Matatoki	150	7
Thames Coromandel District Council	Puriri	150	7
Thames Coromandel District Council	Thames Valley	200	7
Waimate District Council	Waihaorunga Rural	99	3
Wairoa District Council	Mahanga Beach	50	8
Waitaki District Council	Bushy Creek	29	10
Waitaki District Council	Ohau Alpine Village	36	10
Total: 20	**20**	**7,077**	**164**

46 This affects nine rural properties connected to the raw water main.

Source water monitoring

Cyanobacteria risk categorisation

The table below shows the outcome of councils' cyanobacteria risk assessment of their sources (by source type).

Table 22: Council sources of drinking water and their cyanobacteria risk

Source type	No risk	Low	Medium	High	Unknown	Total sources
Groundwater (Well or Bore) (<10m deep)	0	50	14	1	5	70
Groundwater (Well or Bore) (10-30m deep)	16	126	17	0	7	166
Groundwater (Well or Bore) (>30m deep)	235	166	4	1	14	420
Groundwater (Well or Bore) depth unknown	0	6	2	0	0	8
Lake	0	8	23	12	6	49
Rainwater (Roof collected)	1	34	0	0	20	55
River, Stream, Creek	0	88	105	24	23	240
Spring	0	39	2	0	2	43
Total sources	**252**	**517**	**167**	**38**	**77**	**1,051**

E. coli

The two graphs below show the levels of *E. coli* (in CFU/100 ml or MPN/100ml) found in source water sample results in 2023 and 2024.

Figure 43: Levels of *E. coli* in source water samples shown as a percentage of samples for each source water type – 2023

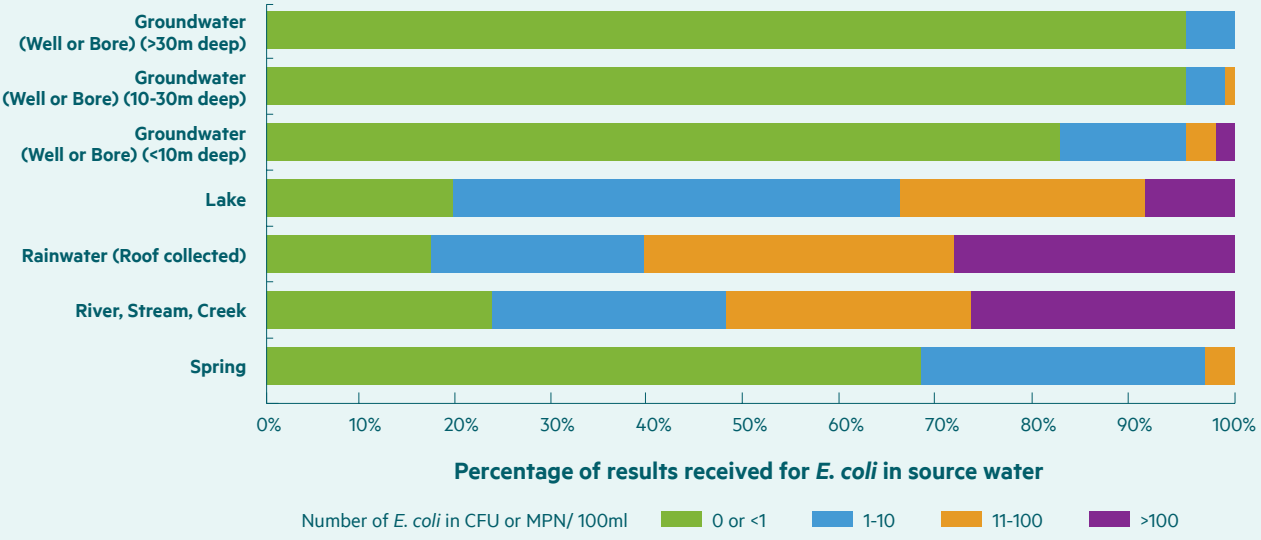
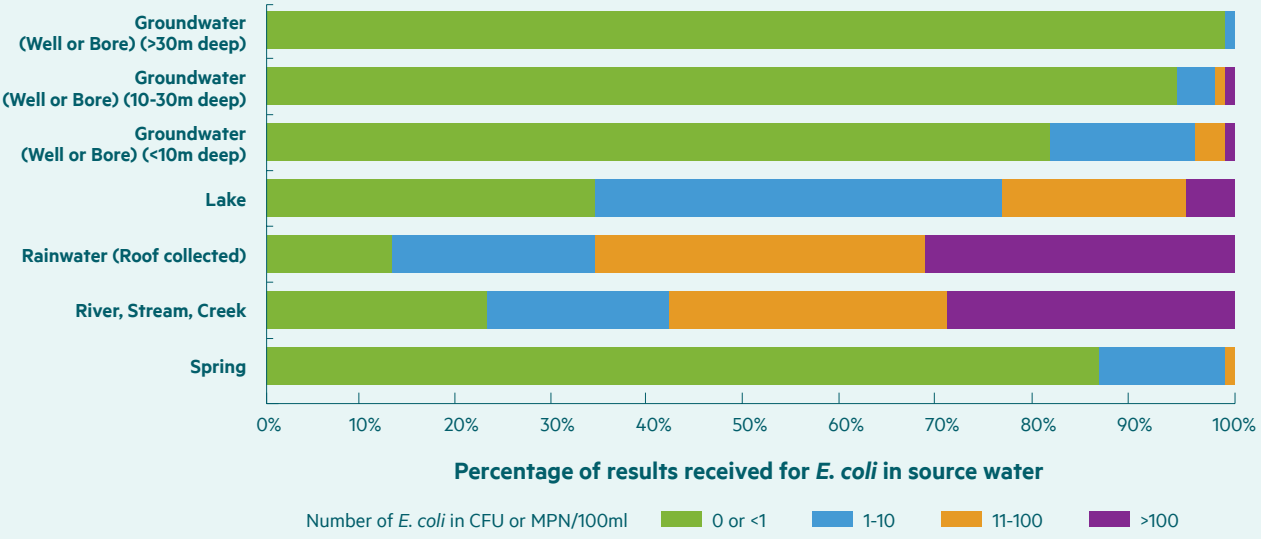


Figure 44: Levels of *E. coli* in source water samples shown as a percentage of samples for each source water type – 2024



The two tables below show a summary of the number of *E. coli* sample results by source water type and the level of those results.

Table 23: Summary of *E. coli* results from different source types received from registered supplies in 2023

Source water type	0 or <1	1 to 10	11 to 100	Over 100	Total
Groundwater (Well or Bore) (>30m deep)	8,956	470	15	3	**9,444**
Groundwater (Well or Bore) (10-30m deep)	908	38	6	2	**954**
Groundwater (Well or Bore) (<10m deep)	471	72	20	11	**574**
Spring	219	96	10	1	**326**
River, Stream, Creek	765	805	831	893	**3,294**
Lake	163	385	214	79	**841**
Rainwater (Roof collected)	56	70	103	95	**324**
All	**11,538**	**1,936**	**1,199**	**1,084**	**15,757**

Table 24: Summary of *E. coli* results from different source types received from registered supplies in 2024

Source water type	0 or <1	1 to 10	11 to 100	Over 100	Total
Groundwater (Well or Bore) (>30m deep)	12,086	74	27	5	**12,192**
Groundwater (Well or Bore) (10-30m deep)	2,428	91	16	13	**2,548**
Groundwater (Well or Bore) (<10m deep)	692	132	25	5	**854**
Spring	446	66	7	2	**521**
River, Stream, Creek	963	815	1,213	1,255	**4,246**
Lake	341	420	195	54	**1,010**
Rainwater (Roof collected)	141	69	112	107	**330**
All	**16,998**	**1,667**	**1,595**	**1,441**	**21,701**

Arsenic

The two graphs below show the level of arsenic in source water sample results for 2023 and 2024.

Figure 45: Arsenic levels in source water samples – 2023

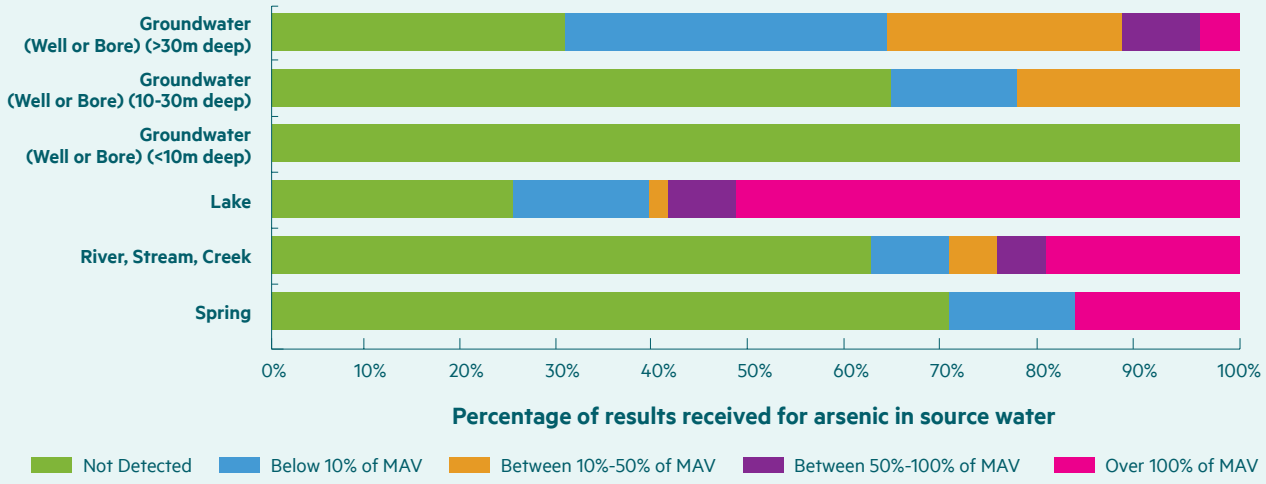
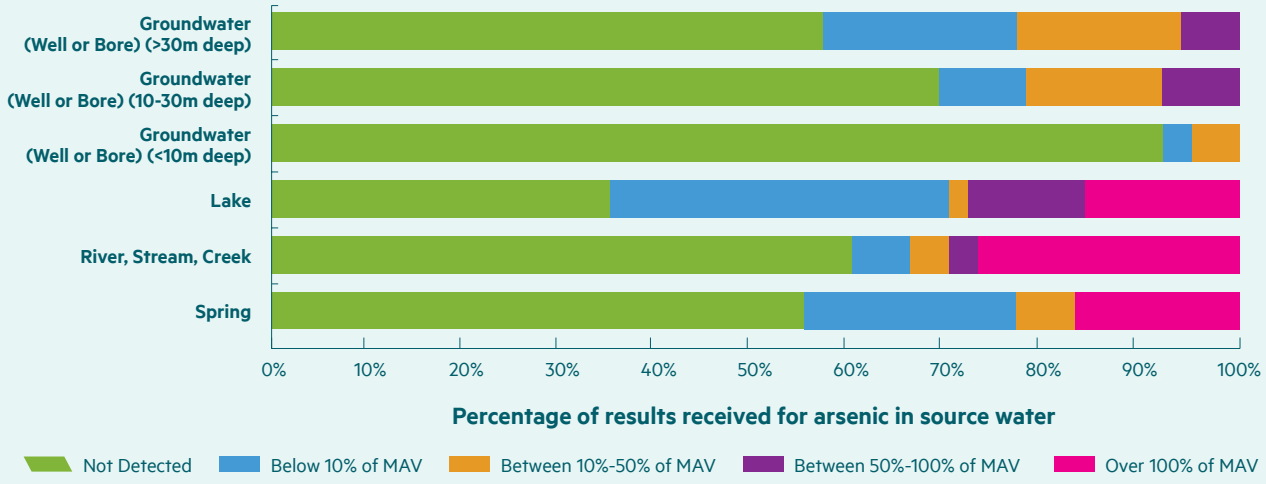


Figure 46: Arsenic levels in source water samples – 2024



Nitrate

The two graphs below show the level of nitrate in source water sample results for 2023 and 2024.

Figure 47: Nitrate levels in source water samples – 2023

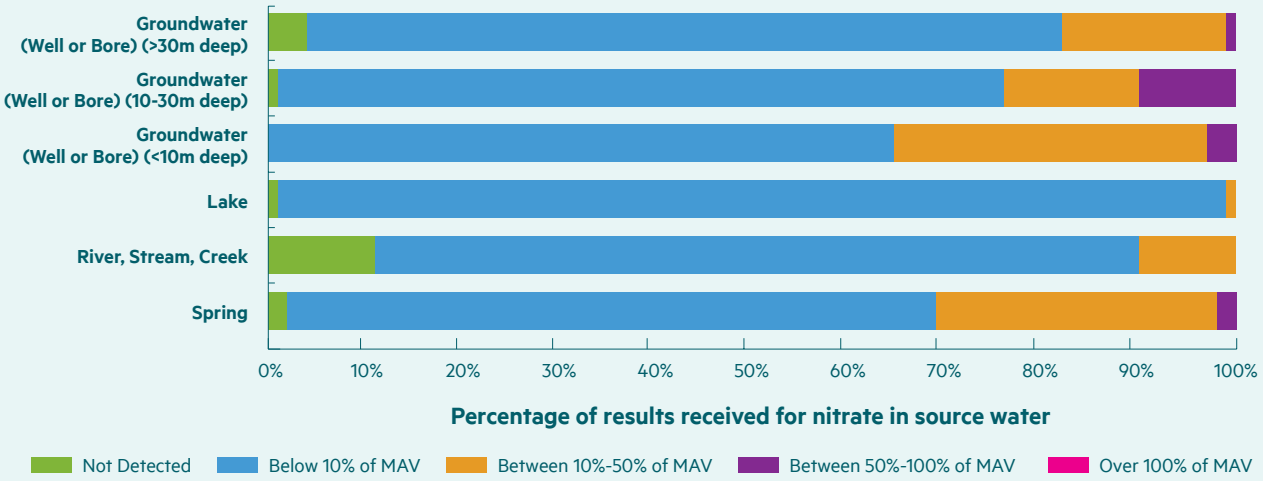
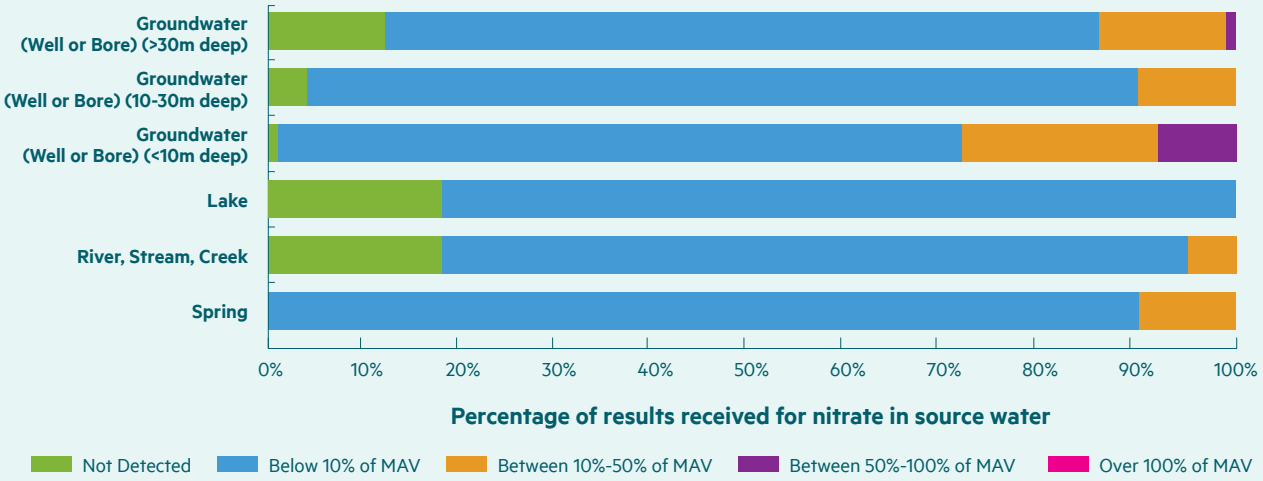


Figure 48: Nitrate levels in source water samples – 2024



Drinking water supplier performance

Table 25: Council supplies that did not provide Rules reporting

Supplier name	Supply name	Supply population
Tauranga City Council	Pyes Pa Memorial Park	100
Tauranga City Council	McLaren Falls Park	80
Wairoa District Council	Mahanga Beach	50
Waitaki District Council	Ohau Alpine Village	36
Total	**4**	**266**

Large community and private supplies that did not report on the Rules

Table 26: Large community and private supplies that did not provide Rules reporting

Supplier name	Supply name	Supply population
Christ's College	Christs College	800
Hawke's Bay District Health Board	Hawke's Bay Hospital[47]	2,000
NZSki	Remarkables Ski Area	1,000
NZSki	Coronet Peak Ski Field	1,000
Opaki Water Supply Association	Opaki Water Supply Association Incorporated	1,800
Pure Turoa Ltd	Turoa Ski Area	4,500
Ruapehu Alpine Lifts Ltd	Whakapapa Ski Area	4,500
Total	**7**	**15,600**

47 Hawke's Bay Hospital was deregistered in January 2025. This supply connected to the Havelock North supply in 2016.

Council supplies that did not report on bacterial monitoring rules for distribution zones

Table 27: Council supplies that did not report on bacterial monitoring rules for distribution zones

Supplier name	Supply name	Supply population
Kaikōura District Council	Peketa Village	100
Kaikōura District Council	Kaikōura	2,500
Manawatu District Council	Ohakea	2,155
Manawatu District Council	Waituna West	226
Masterton District Council	Masterton	20,000
Masterton District Council	Tinui	120
Queenstown Lakes District Council	Corbridge Downs	58
Tauranga City Council	McLaren Falls Park	80
Wairoa District Council	Mahanga Beach	50
Wairoa District Council	Tuai Village	300
Waitaki District Council	Ohau Alpine Village	36
Waitaki District Council	Bushy Creek	29
Waitomo District Council	Piopio	470
Waitomo District Council	Te Kuiti	4,612
Total	**14**	**30,736**

Large council supplies that did not report on distribution safety assurance performance category

Table 28: Large council supplies that did not report on distribution safety assurance performance category

Supplier name	Supply name	Supply population
Far North District Council	Kaitaia	5,400
Far North District Council	Kawakawa/Moerewa	3,500
Far North District Council	Kerikeri	6,700
Far North District Council	Kaikohe	4,200
Far North District Council	Okaihau	800
Far North District Council	Opononi Omapere	900
Far North District Council	Omanaia Rawene	780
Far North District Council	Paihia	4,000
Horowhenua District Council	Foxton and Foxton Beach	1,900
Horowhenua District Council	Tokomaru	550
Horowhenua District Council	Shannon	1,436
Horowhenua District Council	Levin	22,000
Kawerau District Council	Kawerau	7,721
Mackenzie District Council	Twizel	2,500
Mackenzie District Council	Tekapo	600
Mackenzie District Council	Fairlie	1,100
Marlborough District Council	Awatere	1,333
Masterton District Council	Masterton	20,000
Napier City Council	Napier	62,150
Rotorua Lakes Council	Reporoa	1,500
Rotorua Lakes Council	Rotorua East	13,000
Rotorua Lakes Council	Rotorua Central	44,000
Rotorua Lakes Council	Rotoiti	1,000
Rotorua Lakes Council	Hamurana/Kaharoa	2,500
Rotorua Lakes Council	Ngongotaha	5,000
Rotorua Lakes Council	Mamaku	1,000
Waitaki District Council	Lower Waitaki, Rural	778
Waitaki District Council	Waihemo	1,357
Total	**28**	**217,705**

Council multi-barrier status

Treatment plants which receive groundwater of high quality (i.e. class 1 sources must have bacterial treatment of some form but do not require a protozoa barrier).

All other treatment plants which receive groundwater which does not meet the requirements of class 1 source water and all other sources of water must have protozoa and bacteria treatment barriers.

Medium and large supplies must also meet minimum requirements in the Rules for residual disinfection where reticulation exists. Small supplies with reticulation do not have any minimum requirements for residual disinfection in the Rules.

Supplies serving populations of up to 25 people are not required to have any barriers. However, these supplies may need to consider installing treatment of some form to meet their duty to provide safe drinking water.

Table 29: Council supplies that have put in place treatment barriers by 31 December 2024[48]

Council	Supply	Population	Required barriers
Auckland Council	Tawharanui Regional Park	400	Protozoa
Hurunui District Council	Blythe	42	Protozoa
	Cheviot	888	Protozoa
	Lower Waitohi	315	Protozoa
	Waiau Rural	435	Protozoa
	Parnassus Rural	210	Protozoa
Marlborough District Council	Renwick	2,418	Protozoa
Queenstown Lakes District Council	Glenorchy	1,336	Protozoa
	Queenstown	44,708	Protozoa
	Wanaka	26,228	Protozoa
Taupō District Council	Waihaha Rural Area	78	Protozoa
Waimakariri District Council	Kaiapoi	14,285	Protozoa
	Oxford Rural 1	1,093	Protozoa
	Oxford Urban – Rural 2	3,128	Protozoa
	Rangiora	19,615	Protozoa
	Waikuku Beach	1,200	Protozoa
Waitaki District Council	Omarama	270	Protozoa
Westland District Council	Fox Glacier	252	Residual disinfection
Whakatāne District	Murupara	1,674	Bacterial and residual disinfection
Total	**19**	**118,575**	

48 In late 2023, we wrote to 29 councils who lacked one or more essential treatment barriers against microorganisms – protozoa, bacterial or residual disinfection barriers. We previously wrote to these councils asking that they update their information to ensure it was accurate and up to date. This table lists those council supplies where the required treatment barriers have since been installed, as at 31 December 2024. It does not include council supplies that have subsequently been deregistered or had their information corrected in Hinekōrako.

Table 30: Council supplies that lacked one or more microbiological treatment barriers as of 31 December 2024

Council	Supply	Population	Required barriers	Status
Buller District Council	Little Wanganui	65	Bacterial, protozoa, residual disinfection	Long-term plan deferral. Funded plans due 30 June 2025.
	Waimangaroa	300	Bacterial, protozoa, residual disinfection	
	Mokihinui	100	Bacterial, protozoa	
	Punakaiki	230	Residual disinfection	
Central Otago District Council	Cromwell	7,443	Protozoa	Long-term plan deferral. Funded plans due 30 June 2025.
	Patearoa	158	Protozoa	
	Ranfurly	723	Protozoa	
Christchurch City Council	Christchurch	147,453	Protozoa	Implementing funded plan.
	Wainui	138	Protozoa	
Clutha District Council	Tuapeka West	276	Protozoa	Implementing funded plan with delays.
Gore District Council	Gore	7,448	Protozoa	Implementing funded plan.
Hurunui District Council	Balmoral Rural	273	Protozoa	Exploring alternate pathway to drinking water safety.
	Hurunui #1	681	Protozoa	Implementing funded plan.
	Kaiwara	129	Protozoa	Implementing funded plan with delays.
Manawatu District Council	Halcombe-Stanway	554	Protozoa	Implementing funded plan.
Marlborough District Council	Awatere	1,333	Protozoa, residual disinfection	Exploring alternate pathways to drinking water safety.
	Blenheim	26,835	Residual disinfection	Implementing funded plan.
	Havelock	588	Protozoa	Implementing funded plan with delays.
	Riverlands Industrial	740	Bacterial, protozoa, residual disinfection.	Unclear plan.
Masterton District Council	Wainuioru Rural	184	Bacterial, protozoa, residual disinfection	Exploring alternate pathways to drinking water safety.
Palmerston North City Council	Palmerston North City	72,284	Residual disinfection	Implementing funded plan.
Ōtorohanga District Council	Huirimu	120	Protozoa	Considering deregistration.
	Kahorekau	130	Protozoa	Considering deregistration.
Queenstown Lakes District Council	Luggate	1,141	Protozoa	Implementing funded plan.
Ruapehu District Council	Owhango	200	Protozoa	Implementing funded plan.
Southland District Council	Eastern Bush/Otahu Flat RWS	180	Protozoa	Exploring alternate pathways to drinking water safety.

Council	Supply	Population	Required barriers	Status
Tasman District Council	Dovedale Rural	663	Protozoa	Exploring alternate pathways to drinking water safety.
	Eighty Eight Valley Rural	450	Bacterial, protozoa	
	Motueka	3,177	Bacterial, protozoa, residual disinfection	Implementing funded plan with delays.
	Redwood Valley 1	211	Protozoa	
	Redwood Valley 2	726	Protozoa	
Taupō District Council	Centennial Drive	188	Protozoa	Implementing funded plan.
	Hatepe Village	118	Protozoa	Implementing funded plan.
	Kinloch	2,738	Protozoa	Implementing funded plan with delays.
	Motuoapa	518	Protozoa	
	Omori/Kuratau/Pukawa	1,148	Protozoa	
	Tirohanga Valley Community	451	Protozoa	
	Whakamoenga Point	66	Protozoa	Implementing funded plan with delays.
	Whareroa	193	Protozoa	Implementing funded plan.
Thames Coromandel District Council	Matatoki	150	Bacterial, protozoa, residual disinfection	Implementing funded plan with delays.
	Puriri	150	Bacterial, protozoa, residual disinfection	
	Thames Valley	200	Bacterial, residual disinfection	
Waimakariri District Council	Ohoka	350	Protozoa	Implementing funded plan.
	West Eyreton	1,010	Protozoa	
Waimate District Council	Cannington/Motukaika Rural	962	Protozoa	Long-term plan deferral. Funded plans due 30 June 2025. Exploring alternate pathways to drinking water safety.
	Hook/ Waituna Rural	99	Protozoa	
	Waihaorunga Rural	344	Protozoa	
	Waikakahi Rural	90	Protozoa	
Wairoa District Council	Mahanga Beach	50	Bacterial, protozoa	Considering deregistration.
	Tuai Village	300	Residual disinfection	Exploring alternate pathways to drinking water safety.
Waitaki District Council	Bushy Creek	29	Bacterial, protozoa	Exploring alternate pathways to drinking water safety.
	Kauru Hill	197	Protozoa	
	Ohau Alpine Village	36	Bacterial, protozoa	
	Stoneburn	86	Protozoa	
	Tokarahi/Livingstone	573	Protozoa	
	Windsor	137	Protozoa	
Total population		**285,116**		

Summary of drinking water supplies in New Zealand

We have published a list of each drinking water supply covered in this report on our website. This list provides a summary at a supply level of most of the information provided by suppliers and accredited laboratories that we have analysed in this report. This includes data relating to:

- Drinking water safety plans (DWSPs).
- Supplier and laboratory notifications.
- Short-term and long-term consumer advisories.
- Bacteria and protozoa barriers.
- Rules performance.
- Source water monitoring.

View: taumataarowai.govt.nz/water-services-insights-and-performance/

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