Submission

Proposed Drinking Water Compliance Rules for Taumata Arowai under the Water Services Act 2021:

- Drinking Water Standards
- Drinking Water Quality Assurance Rules
- Drinking Water Aesthetic Values
- Drinking Water Acceptable Solution for Roof Water Supplies
- Drinking Water Acceptable Solution for Spring & Bore Water Supplies
- Drinking Water Acceptable Solution for Rural Agricultural Water Supplies
- Drinking Water Network Environment Performance Measures

March 2022

Waipa DISTRICT COUNCIL

PROPOSED DRINKING WATER COMPLIANCE RULES FOR TAUMATA AROWAI UNDER THE WATER SERVICES ACT 2021

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By: Waipā District Council

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Introduction

1. Waipā District Council (the Council) welcomes the opportunity to provide comment on the proposed Drinking Water Compliance Rules that relate to Taumata Arowai's regulatory role under the Water Services Act 2021.

General Comments

1. This submission is that we are in support of the general intent of the documents for improving drinking water being supplied safely in Aotearoa, but have concerns around some elements of the proposals.

2. Waipā District Council recognises the importance of a stronger regulatory framework and regime following the Havelock North Contamination Incident. However, there are concerns with some of the proposed regulatory measures around the cost of complying with the proposed changes, particularly small and rural supplies, and the unintended consequences on Councils and communities should small suppliers be unable to comply.

3. Waipā District Council supports the review of the Drinking Water Standards and believes that the proposed Maximum Acceptable Values (MAVs) will support the objective of ensuring that drinking water suppliers provide safe drinking water to consumers. However, clarifications is sought on some of the measures and possibility for collaborative testing in combined water catchments.

4. Waipā District Council supports the Aesthetic Values, but not in their entirety. Some of the proposed values are subjective and outside of the control of a water supplier. Waipā District Council is concerned water suppliers could become overwhelmed with customer complaints should these measures not be clearly defined.

5. Waipā District Council supports the intent of the Quality Assurance Rules, however further clarification is required so that these are not interpreted differently by suppliers. The use of examples would be beneficial, particularly considering the complex nature some water suppliers have for their supply types.

6. Waipā District Council supports the intent of the proposed Network Environmental Performance Measures, providing transparency across the waters sector. However, there is concern as to the timeframes for implementation of some of the measures for water suppliers and the possibility of redundant reporting measures put in place when reform entities are formed. Additionally, there is no guidance as to how the measures will be taken to ensure standardised reporting across the sector.

7. Waipā District Council supports the intent of the Drinking Water Acceptable Solution packages, but not in their entirety. The resources, skills, knowledge and budget to be utilised in order to comply with requirements is not insignificant and mechanisms to how these supplies can be supported should be considered before placing regulations on them. Of consideration is the support Councils can give to these schemes as they have the knowledge and in-house expertise to assist and bring the schemes up to compliance level. A funding mechanism should be considered to enable this process and to prevent an influx of schemes wishing to exit their supply due to non-compliance and transfer to Council.

8. There are considerable shortages in skills and resources available within the sector and the proposed regulatory changes will put extra strain on this. A strategic approach to training and bringing new people into the sector will need to be incorporated into the mandate of Taumata Arowai.
9. Waipā District Council strongly supports the principles of Te Mana o te Wai.

KEY OBSERVATIONS

Drinking Water Standards

1. Waipā District Council agrees with the process used by Taumata Arowai to the review the maximum acceptable values (MAVs) for drinking water standards and alignment of MAVs with guideline values set by the World Health Organisation. Further refinement of these MAVs by New Zealand experts and technical reference groups to reflect the New Zealand context is also supported.
2. Moving to these Drinking Water Standards from Drinking Water Standards for New Zealand 2005 (revised 2018) is supported, but not in its entirety. Clarification is required on some MAVs, such as if they are to be total or dissolved metals or total or free available chlorine and are discussed in more detail in the '*Taumata Arowai Questions'* section.
3. The inclusion of a MAV for Anatoxins as a group and lowering of the MAV for Cylindrospermopsins is supported.
4. Further clarification is required as to whether flushed or non-flushed samples are to be taken and if there is a difference depending on the determinands.
5. Waipā District Council suggests a collaborative approach to testing for radiological parameters. This testing is expensive, and levels would not change drastically in water catchments that feed multiple suppliers, that is, the Waikato River. Therefore, a rotation system could be employed so that suppliers from that catchment take turns with testing, with open/pooled sharing of results.
6. The Drinking Water Standards set out that all consumers on a supply should receive water that meets the standards from treatment to the tap, and at all points in a water system after treatment, however 'water system' is not defined in the Standards. The Water Services Act 2021 (section 13) defines 'point of supply'. Waipā District Council recommends a clear definition is provided that aligns with the Water Services Act.

Drinking Water Aesthetic Values

1. Some of the determinands are outside of the control of water suppliers, that is temperature. It therefore wouldn't be appropriate for it to be included for consumers to assess against, as there would be a strong possibility of overloading suppliers with complaints.

2. The aesthetic properties table has the general requirement that taste and odour should be acceptable to most consumers. There is however no definition or guidance as to what 'most' consumers would be considered acceptable and is left open to subjectivity.

3. A large number of these determinands will not be routinely tested for in NZ and there is no guidance to assist suppliers with this. Will the full suite of testing for aesthetic determinands only be required when the source of odour and taste cannot be determined? Or will a broad range screen be required at all times?

4. Waipā District Council suggests combining the Aesthetic values into one document with the Drinking Water Standards to reduce the number of documents suppliers need to follow. They can be delineated by different tables.

Drinking Water Quality Assurance Rules

1. Waipā District Council generally supports the water supply categories based on populations and type of supply to ensure safe drinking water based on supply, scale and risk. However, there is a concern around the level of expertise and interpretation required for determining the application of rules to the different categories. This could be more problematic with smaller supplies that do not have that expertise and also increases their financial burden with the increased levels of compliance.

2. There is a level of ambiguity in the Quality Assurance rules for application of compliance rules to supply categories. For example, a registered small supply could have its supply category and associated rules, however if this supply is part of a larger supplier serving more than 10,000 people (in total) then this registered supply could be interpreted to have to meet the level 3 rules with much more stringent compliance rules. Clarification is needed as New Zealand water suppliers have varying mixed models and supply types; therefore examples and pictorials would be beneficial in this area.

3. There is no direction in the consultation document on when an acceptable solution would need to be applied (especially for small water supplies). Waipā District Council recommends that further clarification is provided by Taumata Arowai around the application of the rules versus Acceptable Solutions, particularly where there is overlap. The proposed rules appear subjective and are unclear as to what would trigger the use of an acceptable solution and where the Building Act applies.

4. The module application of 'self-supplied buildings' could look towards a more risk-based approach rather than be reliant on population size. There is concern that if rules are too stringent this could force movement of these supplies to their Council Water Supplier, placing additional pressure on them. Further clarification is also required on what constitutes a 'self-supplied building' with a suitable example.

5. Sample transportation rules specified in G4 are problematic due to the practicality of their application. Transportation of samples ≤6°C would include freezing temperature of 0°C, rendering water samples non-viable for microbiological analysis. Further concerns to these rules are detailed in the '*Taumata Arowai Questions'* section.

6. The implementation of all the compliance rules set out may be challenging for some suppliers in terms of costs, resources and supplier demand. Waipā District Council suggests a tiered implementation / transition plan for the Quality Assurance rules, similar to that outlined in the '*Network Environmental Performance Measures'*. This tiered approach may also consider possible wider reform actions towards moving to larger entities and whether the implementation of certain processes and reporting by a water supplier could become redundant.

Drinking Water Acceptable Solutions

1. Waipā District Council supports the intent of the Drinking Water Acceptable Solution packages, but not in their entirety. There is concern as to the support given to these supplies as expertise and knowledge of people running the supplies could be limited and lead to non-compliance. The solutions outlined require a level of interpretation and knowledge of hardware/kit to install leading to a broad array of installs. Pressure for compliance without support could lead suppliers to exit their schemes and move to more un-safe drinking water sources that are not covered under the regulatory regime or an influx of schemes being handed to Councils with no funding mechanism for the required upgrades.
2. Waipā District Council is concerned around the auditing requirements for such schemes resulting in an onerous solution not too different from following the Quality Assurance Rules. This again highlights the need for in-house expertise that will not always be available within these supplies. While auditing is important to ensure continual supply of safe drinking water, a mechanism needs to be created to assist scheme holders with auditing requirements.
3. Complete information on the pipe network of these supplies will be challenging and missing data difficult to determine. Therefore, is the requirement for this to be contained in the operation and maintenance manual feasible and what tools can be provided to support suppliers in establishing this information?

Roof Water Supplies

4. It is stipulated that this acceptable solution can only be used if not located within a supply area of a reticulated water supply. Clarification is required here as to the distance from a reticulated supply whereby an acceptable solution is permissible.
5. Waipā District Council supports the roof water system and end point treatment system requirements; however clarification / guidance is required as to the sizing of the first flush diverter so this is approached in a standardised manner. Also of note is the 96 hours untreated water storage required. Waipā District Council has concerns that this sizing may place a large financial burden on the supplier that is over and beyond what is actually required.

Spring and Bore Water Supplies

6. Waipā District Council suggests a centralised database for the recording of source water information. This will ensure efficient flow of information from both suppliers and Regional Council. A centralised database would also be able to track data trends and inform water suppliers of potential localised impacts or significant changes rather than a lagged approach. Many of these supplies will not have

the in-house knowledge and expertise to recognise changes in water quality and a centralised database could be a valuable tool to assist such suppliers.

7. The stock exclusion zone of 5 metres is contradictory to the 3 meters in the Stock Exclusion Zone 2020, this will cause confusion to suppliers for where different rules apply.
8. The testing requirements require a level of interpretation that requires knowledge in water quality and are open to ambiguity. An example of this is Iron being test and 'must not be at a level that will form precipitate when oxidised by chlorine', this will be confusing for suppliers and requires more guidance.

Rural Agricultural Water Supplies

9. More guidance is required around the design, configuration, and installation of a treatment system. Understanding what systems are 'good' should not be left to interpretation, and a standardised set of equipment choices should be stipulated to guide suppliers. Without guidance proliferation of inefficient systems could develop with the strong risk of non-compliance.
10. The testing requirements need a level of interpretation and in-depth knowledge in water quality and is open to ambiguity. An example of this is Iron being tested and 'must not be at a level that will form precipitate when oxidised by chlorine', this will be confusing for suppliers and requires more guidance.

Drinking Water Network Environmental Performance Measures

1. Waipā District Council supports the intent of the proposed Network Environmental Performance Measures, providing transparency across the waters sector. However, there is concern as to the timeframes for implementation of some of the measures for water suppliers. Additionally, there is no guidance as to how the measures will be taken to ensure standardised reporting across the sector. There needs to be clear / concise descriptions as to how the measures are to be recorded or calculated to ensure minimal interpretation that would lead to inconsistent measurement / reporting across the sector.
2. The National Transition Unit (NTU), in conjunction with local establishment entities, will be undertaking work to set up new efficient data capture and reporting systems that will operate under the new entities. If the expectation is to expand on the current level of reporting (including increased data confidence), this could result in Councils needing to invest resources and funding to develop new data capture and reporting processes, which may then become redundant once transition to the new entities occurs.

Document and Intent Recommendations

1. Real-life case studies should be undertaken to understand:
    a. The full costs and complexities to comply with the proposed changes.
    b. Practicality of timeframes required to comply.
    c. Potential wider impacts on communities.

2. Waipā District Council is willing to support the development of these case studies. Utilising work already undertaken could reduce the time and resources required to run the case studies. This will require some funding support.

TAUMATA AROWAI QUESTIONS

Drinking Water Standards

1. *Do you agree that the process used to review the MAVs for drinking water standards was appropriate?*
   Yes

2. *Do you agree that the proposed MAVs will support the objective of ensuring that drinking water suppliers provide safe drinking water to consumers?*
   Yes

3. *If you want to provide any additional feedback on any MAV please provide this here.*
   - As there is limited raw water quality data available in New Zealand, is there an expectation that all determinands will need to be analysed to ensure they aren't present in the final water at levels of concern?
   - It would be easier to have one list of determinands that covers both health and aesthetic parameters rather than as two separate documents. They can be presented in separate tables and specified within the same document.
   - Has consideration been given to how the temperature and timeframe compliance requirements for microbial samples to reach an accredited lab from remote rural areas can be achieved?
   - For determinands like Cu, Pb and Zn is the MAV related to a flushed or non-flushed sample?
   - Will both flushed and non-flushed samples need to be taken?
   - For determinands such as Fe and Mn is that total, dissolved, particulate that the MAV relates to?
   - Does asbestos need to be included in the list of determinands given New Zealand's aged pipe network?
   - Can a rotation system across Councils be employed, that is, the Waikato River has many abstractors along its length and it would not be expected that levels would change much from Taupo down. This could help reduce monitoring costs.
   - Why is Beta radiation from Potassium excluded from the MAV?
   - Will there be guidance on depth of sampling and where to sample from? Cyanobacteria are notorious for occupying different depths depending on the weather and wave action and can also be blown into higher concentrations around coves and bays.
   - Is there a requirement for algal cell counts and chlorophyll (a) data to be collected also?

- Is there enough laboratory capacity / expertise to undertake PFAews and refractory organics in New Zealand?
- What are the consequences for non-compliance if the treatment process cannot remove the organics, that is, no carbon based treatments or R/O.

4. *If you want to provide any feedback on transition issues from the Drinking-water Standards for New Zealand 2005 (revised 2018) to the proposed Drinking Water Standards, please provide this here:*
   - The cost of sampling and analysis along with reporting will increase significantly, especially for non-Council rural supplies. What assistance will be offered to these supplies?

Drinking Water Quality Aesthetic Values Rules

5. *Do you agree that the proposed range for determinands will be acceptable to consumers regarding appearance, taste and odour?*
   - Yes, but not in its entirety. Some of the determinands are outside of the control of water suppliers, such as temperature.
   - What is deemed to be acceptable to most consumers? Is this greater than 50% or more?
   - Will it be a requirement to capture data on the nature of taste and odour complaints, that is, chlorine, earthy, fishy, metallic, soapy etc?
   - A large number of these determinands will not be routinely tested for in New Zealand. Is it the intention that testing will only be required for the full range when the root cause of taste and odour cannot be identified (e.g., chlorine taste and odour). Or will broad range screening of supplies be required to determine if they are within acceptable ranges. Will they eventually become MAVS?
   - Are acceptable ranges for a flushed sample or first draw?
   - Are the metals total, soluble or particulate levels?
   - What are the consequences for suppliers if taste and odour issues are down to internal plumbing and the pH is within range, that is, earthing issues etc on copper pipes.?
   - A lot of smaller supplies and treatment plants do not have pH control and if they did, it could compromise disinfection processes over and above that noted in the document on chlorine levels versus chlorine taste and odour complaints.
   - Is pH to be measured on-site?
   - Why is Geosmin and 2-Methylisoborneol (2-MIB) not on the list?
   - There appears to be a lack of measuring any by-products from chemical disinfection (e.g., Poly-electrolytes) and how to handle/test for these.

6. *Comment on chlorine, iron, temperature, turbidity, colour.*

   <u>Chlorine:</u>
   - Is Cl_2 to be measured as Total Chlorine, FAC or some other variant?
   - Will this be an on-site measurement from a flushed sample?
   - Should the chlorine aesthetics be broken down further to include the more foul smelling compounds such as Trichloramine?

Iron:

- Are the metals total, soluble or particulate levels?

Temperature:

- This cannot be controlled by the supplier therefore should it be in the standards?

Colour:

- Very supportive that this measure has come in.
- Is there a reason for using TCU over Hazen and or UV254 measurement?

7. *Additional feedback on acceptable ranges.*
    - If measuring total hardness, then total alkalinity should also be included as a sub-set as the ratio of the two can influence formation of scum.
    - Low pH commentary relates to plumbosolvency, this is a health not aesthetic issue.

8. *Feedback on transition issues to the proposed DW Aesthetic Values.*
    - Will there be a requirement for Taste and Odour panels to be set up by water suppliers?
    - Will there be a requirement for measurements at all plants so that odours and aesthetics can be picked up before they reach the consumer?
    - Who will have precedence over decisions on Aesthetics once the Customer Regulator is formed?

Drinking Water Quality Assurance Rules

9. *Do you agree that the proposed Drinking Water Quality Assurance Rules support the objective of ensuring that drinking water suppliers provide safe drinking water to consumers?*
    - Yes, but not in its entirety.
    - Compliance for new analytes and complying with QA rules should be phased in much like the network performance measures.
    - The question of affordability and achievability across all supplier types needs to be addressed as does the consequence of suppliers exiting the industry.
10. *Do you agree that the water supply categories are appropriate?*

Yes, but not in its entirety.

- >500 population seems to be a low number to ascribe to a large water supplier. Is there a basis or rationale behind this number?
- More definition is required in S1.3 around the minimum and maximum numbers. It should also include clarification on the 10,000-population statement later in the document that seems to indicate that a water supplier with multiple sources / treatment plant serving more than 10,000 people in total automatically has all individual supplies assigned S3T3D3 status.
- For varying population size, how is this to be determined? It is difficult to verify numbers in tourist areas and whether they are day visitors, temporary permanent residents and whether they are using water sourced in town or at a camp site / other supply type. Further guidance required.

- Self-supplied building drinking water supplies requires more up-front information rather than having to delve into the document to find it. If it is a single building, is it really an on demand networked supply, or does it fall into one of the other categories, that is, roof water supply etc?
- More definition is required plus an example of what a self-supplied building is would be useful.
- Planned Temporary Event – if this is a one-day event would the rules still apply? Could an organiser opt to supply bottled water? Is there a minimum number of attendees at a PTE below which the event is exempt?
- Water carrier services and community drinking water stations seem to be subsets of each other; can these be combined or simplified in some way?
- If a public tap is chlorinated and then dechlorinated on a network supply, it is not classed as a community drinking water station – what is it classed as – a network supply?
- The final paragraph of section 1.3 needs to be included in the trickle feed definition. It is also confusing and a risky approach. A large treatment plant rurally located could have a trickle fed area ahead of the main urban area; the rules as stated seem to indicate the urban area will fall under trickle feed rules also.
- Equally, later in the document there is an option for a Trickle Feed Supply to classify themselves as a rural agricultural supply – what will this be based on?
- Emergency water supplies – why aren't these covered in this document for completeness?

11. *Do you agree that the general drinking water quality assurance rules associated with a Planned Event Temporary Drinking Water Supply should be recorded in the Rules as reflected in the consultation document? The alternative is that the drinking water quality assurance rules would be detailed as a condition on each permit.*

    Yes – but not in its entirety.
    - A planned temporary event in theory will be fed from one or more of the other water supply categories and the rules from that applied to the event.

12. *Do you agree with the proposed Drinking Water Quality Assurance Rules being structured in this manner?*

    Yes, but not in its entirety.
    - A diagram showing the structure and linkages between supplier type, rule codes and complexity levels should be included here for clarity further into the document.
    - The rule modules seem to indicate that population size is the driving force behind the module rule type required. As this is aimed at public health protection is this for the person, or the population?
    - There are some very small supplies that have very high-risk sources that require more stringent rules. Are the rules meant as a default start position and could be amended based on risk rather than choice of the water supplier?

- Self-supplied drinking water supplies has two categories in the table <50 and >50. How does this link into / get separated out from: the rural agricultural supply requirement for "Any treatment system must serve no more than 30 people (within a single dwelling or building)"?
- In general, the document is aimed at simplifying compliance and aiding the look up for certain supply types. In totality the document is complex and can be confusing even to experienced industry practitioners.

13. *Do you agree with the allocation of modules to On Demand Network Drinking Water Supplier – Very Small Drinking Water Supplies (namely G + S1 + T1 + D1)?*

    Yes, but not in its entirety.
    - In general, a risk-based approach should be taken for each supply. The treatment train from source to tap must remove or reduce contaminants of concern to acceptable levels. The modules can be a default position to start off, pending the results of raw water analysis that is alluded to later in the document.

14. *Do you agree with the allocation of modules to On Demand Network Drinking Water Supplier – Small Drinking Water Supplies (namely G + S2 + T2 + D2)?*

    Yes, but not in its entirety.
    - In general, a risk-based approach should be taken for each supply. The treatment train from source to tap must remove or reduce contaminants of concern to acceptable levels. The modules can be a default position to start off, pending the results of raw water analysis that is alluded to later in the document.

15. *Do you agree with the allocation of modules to On Demand Network Drinking Water Supplier – Large Drinking Water Supplies (namely G + S3 + T3 + D3)?*

    Yes, but not in its entirety.
    - In general, a risk-based approach should be taken for each supply. The treatment train from source to tap must remove or reduce contaminants of concern to acceptable levels. The modules can be a default position to start off, pending the results of raw water analysis that is alluded to later in the document.

16. *Do you agree with the allocation of modules to On Demand Network Drinking Water Supplier – Varying Population Size Drinking Water Supplies (less than 500 people) (namely G + S2 + T2 + D2)?*

    Yes, but not in its entirety.
    - In general, a risk-based approach should be taken for each supply. The treatment train from source to tap must remove or reduce contaminants of concern to acceptable levels. The modules can be a default position to start off, pending the results of raw water analysis that is alluded to later in the document.

17. *Do you agree that On Demand Network Drinking Water Supplier – Varying Population Size Drinking Water Supplies (less than 500 people) must comply with Rule E1 in addition to modules G + S2 + T2 + D2?*

Not in their entirety – clarifications required on the following:

- How will a supplier know on day 1 that they have gone above the population requirement?
- How will they be able to immediately comply with the rule changes?
- If a large Planned Temporary Event is held in the supply area, does that automatically invoke rule E1 also?

18. *Do you agree with the allocation of modules to On Demand Network Drinking Water Supplier – Varying Population Size Drinking Water Supplies (more than 500 people) (namely G + S3 + T3 + D3)?*

    Not in their entirety - clarifications required on the following:

    - How will a supplier know on day one that they have gone above the population requirement?
    - How will they be able to immediately comply with the rule changes?
    - If a large Planned Temporary Event is held in the supply area, does that automatically invoke rule E1 also?

19. *Do you agree that On Demand Network Drinking Water Supplier – Varying Population Size Drinking Water Supplies (more than 500 people) that the distribution system monitoring requirements must increase according to the frequencies set out in the D3 rules for the periods that the population is increased above the base population?*

    Not in their entirety - clarifications required on the following:

    - How will a supplier know on day one that they have gone above the population requirement?
    - How will they be able to immediately comply with the rule changes?
    - If a large Planned Temporary Event is held in the supply area, does that automatically invoke rule E1 also?

20. *Do you agree with the allocation of modules to Trickle Feed Water Supplies (namely G + S2 + T2 + D2)?*

    Yes but not in its entirety - a risk based approach needs to be taken.

21. *Do you agree that Trickle Feed Water Supplies (must comply with Rule F1 in addition to modules G + S2 + T2 + D2?*

    Yes – noting:

    - There is a potential challenge based on the requirement elsewhere for a calmed inlet and floating off take from tanks.
    - Alternatives such as backflow prevention could be utilised.
    - Retrofitting existing tanks can be difficult and expensive.

22. *Do you agree with the allocation of modules to Self-Supplied Building Drinking Water Supplies (suppliers serving less than 50 people) (namely G + S1 + T1)?*

    Not in its entirety, a risk-based approach should be taken.

- What if the source water was heavily contaminated?

23. *Do you agree with the allocation of modules to Self-Supplied Building Drinking Water Supplies (suppliers serving between 50 and 500 people) (namely G + S2 + T2)?*

    Not in its entirety, a risk-based approach should be taken.
    - What if the source water was heavily contaminated?

24. *Do you agree with the allocation of modules to Water Carrier Services (namely G + WC)?*

    Yes – if the carrier is supplying water from a fully treated (urban) supply.
    Otherwise, a risk-based approach based on source water and treatment systems employed.

25. *Do you agree with the allocation of modules to Planned Event Temporary Drinking Water Supplies (namely G + PTE)?*

    Yes, however will depend on the source water – risk-based approach should be taken.

26. *Do you agree with the allocation of modules to Community Drinking Water Stations and Water Carrier Supplies (namely G + S2 + T2 (excluding the T2 rules for chlorine disinfection))?*

    Not in its entirety – a risk-based approach should be taken.
    - Why is this different from a water carrier?

27. *a) Do you agree with the proposed General Rules? (Section 10.1)*

    Not in their entirety – clarifications required on the following.
    - G1: What reporting system is to be used? There are difficulties with current systems utilised by experienced staff. How will new entrants cope with reporting requirements etc?
    - G2: What reporting system is to be used? There are difficulties with current systems utilised by experienced staff. How will new entrants cope with reporting requirements etc?
    - G3: Yes.
    - G4: No, more clarifications and adjustments needed in this area.

    <u>Bacteriological -</u> Clarifications are required of the following:
    - Should the guideline be that 'analysis begins' within 24 hours of collection? If a sample gets to a lab within 24 hours and the lab tests it 12 hours later, this will be 36 hours since collection. Would the sample still produce viable results?
    - Water samples for micro testing shouldn't be frozen, but technically ≤6ºC includes temperatures below 0ºC.
    - Is it the transport environment (i.e., the chilly bin chamber) that needs to be ≤6ºC, or the sample?
    - Does the sample need to be ≤6ºC immediately? Within a certain timeframe?

- Is there an expectation the transport temperature is to be monitored to ensure the temperature is ≤6ºC at all times, using for example a data logger? If it needs to be ≤6ºC when received at the lab, this needs to be stated.
- What if a sample is from a location five minutes away and the water temperature was 20ºC? How is this going to be dealt with?

- G5: No - it would be better to set out a standard for analysers in a system similar to that required for UV units.

Defaulting to manufacturer specifications for calibrations is a risky move – what if the manufacturer doesn't specify calibration at all? What if they specify a really pointless type, frequency, or range of calibration?

If a supplier buys a cheap and poor-quality chlorine meter that comes with limited instructions, and they don't mention calibrations at all, that will technically comply with this rule; conversely if a highly technical meter with advanced calibration instructions was bought and every single point was not met would this mean then that technically they would not comply?

- G6: No, not in its entirety.

Further clarification on this is required:

- Does this include mowing around the treatment plant, cleaning etc?
- What about cadets and junior staff in training?

- G7: Yes.
- G8: No - it would be better to set out a standard for analysers in a system similar to that required for UV units.
- G9 & G10: No - the new standards require a lot of raw, treated and reticulation monitoring. Some of these parameters are important for disinfection and process control, that is, critical control points. These should have short data capture intervals. Some of the others aren't so critical and do not require the same level of vigour.
- Table 4 Reporting timeframes: Yes, as a starting point.
  This should be a risk-based approach, for example Total Coliforms should be based on a significant number change as this may be a precursor to an event that requires action, or investigation by or on behalf of Taumata Arowai.
  The reporting frequency must be cognisant of the size and complexity of the water supplier.
  Additional resources and assistance are envisaged as being required for smaller private and or community suppliers. What assistance will be given to these?
- Table 5 Reporting Parameters: Why is there no FAC reporting requirement on a D1 system if chlorine is used in treatment / an exemption required for non-chlorinated systems?

b) Do you agree with the proposed Source Water Rules for the S1 module? (Section 10.2).

Not in their entirety:

- S1.3: How will T&O related to cyanotoxins be known / determined?
- S1.4: Planktonic cyanobacteria can be influenced by wind and wave patterns; they can be concentrated in bays just outside of the 50m and inspections should occur where they commonly accumulate.

Why not use the same rules for sampling point as in S2.8?
In what timeframe should the samples be taken?
Is there a bigger health and public safety risk from stopping the abstraction of water if tests aren't undertaken?

- Table 7: Why has winter been chosen for the chemical analysis suite for roof water? Summer would be more logical as higher temperatures and less rainfall would likely indicate the highest concentrations.
    - Why is Benzo (a) Pyrene not included here but is in a D2 roof system?
    - *c) Do you agree with the proposed Treatment Rules for the T1 module? (Section 10.3).*
    - Not in their entirety:
- T1.1: What is the definition of "intermittently elevated turbidity".
- T1.2: Why has 5-micron first filter been required rather than say 20-micron if the second filter is 1 Micron? See also rule T2.5 that specifies cartridge filters must have a pore size of 1 micron absolute, no specification is there for 5 micron.
- T1.6: Validated or certified UV units? 10.6.3 for a T2 system says UV units must meet one of the usual standards - should this also be a requirement for T1?

d) Do you agree with the proposed Distribution System Rules for the D1 module? (section 10.4, p. 31)
Not in their entirety:

- Table 8: Why is there no upper limit on Total Coliforms?

Why is footnote 12 not a rule for D1, but is a rule in D2 (>50% MAV)?
e) Do you agree with the proposed Source Water Rules for the S2 module? (Section 10.5, p 32-33)
Not in their entirety:

- Table 10: Clarification required as to whether Radiological samples are required in year one and then every five years or say year five and every five years.
- Table 11: Why has winter been chosen for the chemical analysis suite for roof water? Summer would be more logical as higher temperatures and less rainfall would likely indicate the highest concentrations.

f) Do you agree with the proposed Treatment Rules for the T2 module? (Section 10.6, p 34-38)
Not in their entirety:

- Some rules for a T2 system seem to be less onerous than a T1 system (See comments for T1).
- What response time is required for a) the UV alarm to be generated, b) attendance at site to rectify faults?
- T2.10- Is there a bigger health / safety risk from the plant shutting down if it just fails to meet the UV dose? How long will the system need to operate below the dose before the plant shut down?
- T2.12 - Under what flow conditions will the 30 minutes CT with chlorine be measured?
- T2.14 - given rule T2.12 pH may have to be measured at the customers tap and not the plant.

- T2.16 - seems to be contradictory to the above rules.
- Table 12: UV dose limits seems to contradict prior UV treatment requirements.
    - What is the rationale for the pH range?
    - If the raw water is out of that range and no pH treatment is used, will it be required in future?
- Note 16: 1 NTU is the limit for what? Raw water, settled water prior to UV or final water turbidity?

g) Do you agree with the proposed Distribution System Rules for the D2 module? (Section 10.7, p 39-40)

Not in their entirety:

- D2.6: Whilst it is logical for the sample to be flushed for certain metals, that is, Fe and Mn, non-flushed samples would be a better indicator of the potential risks associated with Pb, Cu and Zn.
  How long would the flushing of the tap be required for? Five minutes?
- D2.7: Who is responsible for arranging / paying for testing of backflow devices particularly on private property and industry?

h) Do you agree with the proposed Source Water Rules for the S3 module? (section 10.8, p.41-45)

Not in their entirety:

- 10.8.1: Is there an absolute link between the absence of E.coli and Total Coliforms with the absence of protozoa, which are less prone to environmental shock than bacteria, especially in the oocyst form?
    - What is an example of a class 4 water source? One is given for the other three classes.
- S3.4 Can guidance be given for water suppliers tasked with undertaking additional source water monitoring immediately after an extreme weather events? What is the definition of after, that is. once the rain has stopped, or when river levels return to normal? What happens if it is unsafe to travel to the site, for example a road washed out, risk of tree falls etc?
- S3.6: Further definition required on what is low, medium, or high risk. Is there a minimum level of Cyanobacteria to trigger this?
- Table 14: Weekly raw water sampling for E. Coli and Total Coliforms is excessive given the multibarrier approach required for suppliers in this category. Would mean an increase in resources and funding that seems superfluous.
- Table 15: Continuous monitoring of Conductivity, pH and Turbidity – is this as received and monitored at the plant? Rule 24 seems to indicate otherwise unless combined sources used.

i) Do you agree with the proposed Treatment Rules for the T3 module (section 10.9, p. 46-73)

Not in their entirety:

- T3.2: suggests that an on-line chlorine analyser is required at the first boundary of the first consumer's property. Who is classed as the first consumer if the

Water treatment plant has a mess facility and supplies water for consumption by staff?

- T3.3: If T3.2 is complied with, is T3.3 superfluous?
    - Assume T10 relates to chemical disinfectants regardless of UV being used?
- Table 16: Turbidity - what happens if chlorination only occurs pre-filtration with adequate flow through to achieve the C.t. and T10 requirements? Where should turbidity be monitored then?
    - Continuous Monitoring: of T10 and C.t. may be difficult to achieve especially if varying levels in the Contact tank, or in the supply reservoir if it forms part of the process measure.
- Similar comments apply to the use of Chlorine Dioxide and Ozone:
    - Chlorine Dioxide: How is total disinfectant to be measured and what units are they reported in?
- T3.13: at what point in the process does the 5 NTU apply to? Exiting the contact tank as per table 18?
    - As Ozone does not have a residual into distribution, is there also a need to dose chlorine on such systems? If not how is compliance with the 95% of 0.2mg/l FAC complied within the distribution network? This is not clear in the rules.
- Table 18: What happens if Ozone is destroyed post the exit of the contact tank?
- 10.9.2: Some filtration systems are missing off the list - disc and ceramic filters.
    - The limit of 0.5 log for secondary filtration processes does not make sense. Primary filtration may protect the next stage of filtration and reduce loading on it and improve performance, durability etc.
- Disagree with the maximum log credit rules for some membrane plants, manufacturer specifications are higher than the proposed credits.
- More guidance required around CIP washes, their frequencies and process in relation to protozoal compliance.
- T3.17: What is the reason for this rule? A raw water source can have extremely low turbidity levels for long periods of time and a 70% reduction may not be achievable / measurable.
- Table 20: The two statements seem to be contradictory of each other in relation to recycled water.
- Table 21 and 22: Clarification required on what needs to be done with the filter to waste stream. Is it not to be used in recycle? Does it need to go through any form of treatment if it is being re-used?
- T3.38: Clarification required on the statement in terms of what 1 relates to.
- Table 23: Second stage filtration seems to exclude some filtration systems, that is, membranes.
- T3.52: How can the temperature rule be complied with? What happens to the supply when the temperature goes below 6c for long periods of time?
- Table 31: Ozone may be used in conjunction with other disinfectants (Chlorine) which can lead to chlorite and chlorate formation. Should these parameters be added to the ozone list for checking?
    - Is Mn measured as soluble, or total Mn?
- T3.95: Should neither be either?

j) Do you agree with the proposed Distribution System Rules for the D3 module? (section 10.10, p. 74-81)

No: not in its entirety.

- D3.2: Seems to indicate that all customer premises need to be surveyed. If the frequency is every five years for a survey, is the compliance period still one year?
- D3.3: What are the expectations between suppliers and TLAs in terms of backflow devices and current requirements under the Building Act, especially around new builds and factories etc?
- D3.4: Who is responsible for testing of backflow devices; the water supplier or the property owner? Who will audit this; the supplier or the TLA?

k) Do you agree with the proposed Water Carrier Service Rules? (Section 10.11, p. 82-83)

Yes

l) Do you agree with the proposed Planned Temporary Events Rules for the PTE module? (Section 10.12, p.84)

Yes, with clarification:

- PTE 3 and 4: What level of filtration and disinfection is required?

28. *Do you agree with the proposed definition of Planned Temporary Drinking Water Supplies?*

    Yes

29. *Do you have any comments on the transition time required to adopt the proposed rules?*
    - These are quite complex rules and will take some time to bed in. A phased approach to compliance akin to those for the Drinking Water Network Environmental Performance approach would be good. This is especially the case for non TLA water suppliers.
    - The sampling, analysis and reporting requirements are significant and most likely have not been included in Long Term Plan or Annual Plan formation. Will this be taken into consideration by Taumata Arowai? Has any work been done around this and the additional costs to comply in year 1?
    - 3 Waters resources are already stretched across New Zealand, as are Laboratory resources. This could compromise compliance and lead to higher levels of stress than already present leading to less resource availability.
    - There seems to be a rush to implement the new legislation, and this can lead to unintended consequences including smaller suppliers exiting the market and leaving an issue for communities and Councils alike.
    - Consultation on the changes seems to be limited and many in the industry, especially smaller entities are unaware of the changes and / or do not have the resources to cope with the changes, or comment on the documents to be reviewed.
    - Taumata Arowai could widen the entities / groups consulted with and support financially, or with resources, to help ease in these changes including training for water suppliers and related contract / service industry staff.

30. *What key words should be defined in the Drinking Water Quality Assurance Rules, and do you have a proposed definition.*

    The terminology is changing with UK based nomenclature coming in, that is, distribution rather than reticulation so these name changes need to be captured and kept standardised.

Drinking Water Acceptable Solution for Roof Water Supplies

31. *Do you believe that the proposed Drinking Water Acceptable Solution for Roof Water Supplies will provide assistance to water suppliers to comply with the Water Services Act 2021?*

    Yes, in terms of defining the roof supply plus acceptable solution.
    No in terms of the resources (opex, capex and people) required to comply with the requirements.

32. *Do you agree with these proposed criteria?*

    Yes, but not in its entirety:

- There appears to be inconsistency across spring and bores, rural agricultural and roof supply requirements. This ranges from the micron level of filtration to the requirement of the UV system. Could / should these be consistent and standardised as they are effectively trying to achieve the same goal?

33. *Do you agree that the proposed roof water system requirements are appropriate?*
    Yes

34. *Do you agree that the proposed end point treatment system requirements are appropriate?*

- Yes – please clarify why 96 hours storage is required.
- Note comments on a lack of consistency for spring and bores versus rural agricultural and roof systems for micron filtration and UV systems. Should one standard set of requirement be applied?
- Many tanks do not have a calmed bottom inlet and floating offtake – will water supplier have to retrofit these?

35. *Do you agree that the proposed requirements for the operation and maintenance for the roof water supply that includes requirements for each treatment system are appropriate?*

    Yes – assistance may be required for the water supplier to fully comply.

36. *Do you agree with the source water monitoring requirements?*

    Not in their entirety

- RF2 may be difficult to comply with for remote and rural supplies. Is there a timeframe for analysis after receipt?
  Does <6°C include frozen samples?

- If a sample is taken within say 10 minutes of a lab and is at 20c, does that mean the sample has to be cooled before it can be dropped off at the lab?
- RF3: why are the samples denoted for winter when the potential concentrations will be at their lowest?

37. *Do you agree with the treated water monitoring requirements?*
    Yes
38. *Do you agree that the incident and emergency response plan requirements are appropriate?*

    Yes – assistance may be required for the water supplier to fully comply.

39. *Do you agree that the training and awareness obligations of the water supplier are appropriate?*
    Yes – though clarification on what level / type of training is required to prove competence.
40. *Do you agree that the auditing obligations of the water supplier are appropriate?*

    Yes – assistance may be required for the water supplier to fully comply.

Drinking Water Acceptable Solution for Spring and Bore Water Supplies

41. *Do you believe that the proposed Drinking Water Acceptable Solution for Spring and Bore Water Supplies will provide assistance to water suppliers to comply with the Water Services Act 2021?*

    Yes, in terms of defining the spring and bore plus acceptable solution.
    No in terms of the resources (opex, capex and people) required to comply with the requirements.
    - Some clarification is required between an on-demand system and spring and bore assignment and rural / agricultural supply.

42. *This proposed Acceptable Solution for Spring and Bore Drinking Water Supplies has been prepared based on a centralised treatment solution. Do you think the proposed Acceptable Solution would be more effective if it was based on an end-point treatment system rather than a central treatment plant?*
    - This depends on the level of treatment at the plant and the integrity of the distribution system. This includes tanks, backflow devices and potential for known and unknown cross connections and other sources of water to enter the system.
    - Cost to community is a big factor, if upgrading the plant is excessive, then point of entry devices could be considered.
43. *Do you agree with these proposed criteria?*
    Yes
44. *Do you agree that the proposed requirements before the Acceptable Solution can be adopted by a supplier are appropriate?*
    Yes – but not in its entirety:

- Clarification is required for the point at which the turbidity measure is made earlier in the document.
- Stock exclusion to 5 metres is in conflict with the Stock Exclusion Zones 2020 of 3m. The distance of 5 meters is not in line with international opinion of 10-30m where practical.
- Location within 50 meters of an effluent field etc is not agreed with. This should be on a risk-based approach taking into consideration the connectivity / porosity of the soil to the spring or bore.
- Is there an offset / distance away from the pesticide / animal effluent application can occur in proximity to the spring or bore?
  - What about downhill areas of a spring?
  - The roof supply criteria have the following:
    - 'A networked community drinking water supply is not available to the building(s) i.e., the drinking water acceptable solution does not apply to building(s) which is located within the supply area of a reticulated water supply'
    - Would it be useful to be consistent in the use of this criteria and how would it be enforced?

45. *Do you agree that the proposed requirements the bore or spring source for the drinking water supply must meet before the Acceptable Solution can be adopted are appropriate?*
    Comments as per Question 44.

46. *Do you agree that the proposed requirements the treatment system must meet before the Acceptable Solution can be adopted by a supplier are appropriate?*
    Yes – but not in its entirety:
    - There appears to be inconsistency across spring and bores, rural agricultural and roof supply requirements. This ranges from the micron level of filtration to the requirement of the UV system. Could / should these be consistent and standardised as they are effectively trying to achieve the same goal?
    - Has consideration been given to the disposal of the Hypochlorite once it is passed three months of age?
    - Has consideration been given to the strength of the hypochlorite stores as this can affect the degradation of the product?

47. *Do you agree that the proposed requirements for the operation and maintenance of the spring or bore water supply including the headworks and the treatment system are appropriate?*

    Yes, though support for non-Council suppliers should be provided to help them comply.

48. *Do you agree with the source water monitoring requirements?*
    Not in their entirety
    - SB2 may be difficult to comply with for remote and rural supplies. Is there a timeframe for analysis after receipt?
    - Does <6°C include frozen samples?

- If a sample is taken within say 10 minutes of a lab and is at 20c, does that mean the sample has to be cooled before it can be dropped off at the lab?
- SB3: is there a specific standard for the analyser to take the turbidity reading with? Is this a lab-based sample, or field based test?
- SB5: this is a bit open ended especially for non-industry trained operators. What support / guidance will be given to them?

49. *Do you agree with the treated water monitoring requirements?*

    Yes – but not in its entirety:

- SB 7, 8, 9, 14, 15: could be onerous for small and remote sites.
- The sample point may also have to be at a customer's property / in the network if the chlorine contact time is not available on site.
- What happens if there is no pH correction employed at the plant and compliance with the pH range cannot be achieved?

50. *Do you agree with the distribution system monitoring requirements?*

    Yes – but not in its entirety:

- SB17,18,19 could be onerous for small and remote sites.
- What happens if there is no pH correction employed at the plant and compliance with the pH range cannot be achieved?

51. *Do you agree that the incident and emergency response plan requirements are appropriate?*

    Yes – assistance will be required for many of the smaller suppliers.

52. *Do you agree that the training and awareness obligations of the water supplier are appropriate?*

    Yes – though clarification on what level / type of training is required to prove competence.

53. *Do you agree that the auditing obligations of the water supplier are appropriate?*

    Yes – though assistance may be required in the first instance for small scale suppliers.

Drinking Water Acceptable Solution for Rural Agricultural Water Supplies

54. *Do you believe that the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies will provide assistance to water suppliers to comply with the Water Services Act 2021?*

    Yes in terms of defining supply type plus acceptable solution.

    No in terms of the resources (opex, capex and people) required to comply with the requirements.

- Some clarification is required between and spring and bore assignment and rural / agricultural supply.

55. *Do you agree with these proposed criteria?*

    Yes, though monitoring demand split will be difficult unless properties supplied with drinking water are sub-metred.

56. *Do you agree that the proposed requirements for the use of the Drinking Water Acceptable Solution for Rural Agricultural Water Supplies are appropriate?*

Yes

57. *Do you agree that the proposed turbidity and backflow prevention device requirements are appropriate?*
    20 NTU is quite high and a risk-based approach should be taken. This is especially the case if the turbidity level from the source is usually low, then spikes after bad weather / event in the catchment.
58. *Do you agree that the proposed end point treatment system requirements are appropriate?*
    Yes – why can the tank only be topped up from roof water, what about a registered water carrier?
59. *Do you agree that the proposed end point treatment system configuration is appropriate?*
    Yes
60. *Do you agree that the proposed operations and maintenance manual requirements are appropriate?*
    Yes
61. *Do you agree that the proposed operating procedures are appropriate?*
    Yes
62. *Do you agree that the proposed inspection procedures are appropriate?*
    Yes
63. *Do you agree with the proposed maintenance, inspection, and calibration requirements?*
    Yes
64. *Do you agree with the proposed household monitoring requirements?*
    Yes
65. *Do you agree with the proposed supply monitoring requirements?*
    Not in its entirety
    - RA2: may be difficult to comply with for remote and rural supplies. Is there a timeframe for analysis after receipt?
    - Does <6°C include frozen samples?
    - If a sample is taken within say 10 minutes of a lab and is at 20c, does that mean the sample has to be cooled before it can be dropped off at the lab?
    - RA4: could be difficult to comply with for small and remote supplies, especially in bad weather.
    - How will the cross / illegal connections requirement under audit be completed to the satisfaction of TA?
66. *Do you agree that the incident and emergency response plan requirements are appropriate?*
    Yes

67. *Do you agree that the training and awareness obligations of the water supplier are appropriate?*
    Yes

68. *Do you agree that the auditing obligations of the water supplier are appropriate?*
    Yes

Drinking Water Network Environmental Performance Measures

69. *Do you agree that the scope of environmental performance should include the entire network, from source to discharge?*
    Yes, though the definition needs to change, as it seems to preclude water delivered to customers taps.

70. *Do you have any suggestions for how we could give effect to Te Mana o te Wai through the drinking water network environmental performance measures and the Network Environmental Performance Annual Report?*
    - Matauranga maori (and therefore potential environmental performance measures) is regionally specific to the iwi and hapū of the rohe. As Councils and future water entities traverse what this means for monitoring and reporting, it will be important to ensure that a 'one size fits all' approach does not dilute the aspirations of iwi. It may be that the reporting for the environmental performance measures is broken down into region / rohe in order to avoid the blanket approach.
    - Consultation, communication and partnering with iwi, hapu and the community at a local level will be critical requirement to giving effect to Te Mano o te Wai.

71. *Do you agree with the proposed outcomes and principles?*
    No, not in its entirety.
    - The timeframe for complying with some of these measures starts this year. Not all data sets for year 1 parameters are known or collected by all Councils and entities at this point in time. Not all Councils undertake the Water NZ National Performance Review and will not have the resources or data sets (e.g., asset condition) to comply within the very short timeframes required.
    - Of particular concern to Councils is the statement in the introduction on penalties being applied for not supplying information. This is reiterated in the proposed approach where penalties are again mentioned. The penalties outlined in the Water Services Act are not insignificant and can be $50,000 – $300,000 and is unacceptable for merely not providing performance measure data, some of which are new to Councils and some of which have still to be developed with iwi.
    - Targets are also mentioned, but not yet determined. Will there be penalties applied in the future for Councils not attaining targets?
    - In the next steps, public consultation is mentioned with targeted engagement to fine tune measures ahead of July 2022 (three months from the response requested of Councils on the consultation document). Who will this be with and how will changes and additions be communicated to Councils? This engagement should be in partnership with Councils so to strengthen the relationship of Council suppliers with their communities.

- Under what classification would the reform entities sit?

72. Do you agree with the insights and measures we have proposed?

Yes - At a high level.

- There is still concern around penalties and targets going forward.
- Data accuracy is a concern across all Councils with small sample sets currently being in place and extrapolated or inferred across entire networks, for example, asset condition.
- There is also concern around what data is in Council systems and what actually is in place. This is largely due to the historic and hidden nature of many of the assets that weren't accurately captured in the first place. This will need ground truthing over time and it is requested that assistance be given for Councils to undertake this work.
- Will the measures be averaged across the supply network and if so, how will this be calculated? An example here is district wide leakage is at x% but one of multiple supply systems has Y %.
- The RFI process took a lot of resources to produce for the DIA. Will there be guidance on collecting and reporting the data? Support is mentioned in the document, but not much detail on what form that will take.

73. Do you have any other comments you wish to make?

- Waipā District Council is in support of the general intent of the regulatory changes proposed. Of concern are the tight timeframes given for consultation, therefore limiting engagement from key stakeholders. To avoid unforeseen consequences, interim compliance rules or a staged approach could be used to enable feedback from water suppliers and industry to ensure a practical application applied, whilst also ensuring safe drinking water to New Zealanders.

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