

A- Drinking Water Acceptable Solution for Roof Water Supplies



Tell us a bit about yourself

Question	Possible responses
<p>Full name</p> <p>Email address - this will only be used if we need to communicate with you about your submission, or if you indicate below that you would like to be contacted in the future in relation to drinking water issues</p> <p>Note you are not required to provide your email address</p>	<p>Toni Goodlass</p> <p>toni.goodlass@napier.govt.nz</p>
<p>Are you providing feedback:</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. As an individual 2. On behalf of an organisation or group <ol style="list-style-type: none"> a. organisation or group name: Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council b. position/ title within the organisation: Regional Programme Director – Hawke's Bay Five Councils



Question	Possible responses
<p>Where do you live/reside?</p> <p>If your organisation has presence in more than one region – select ‘National’</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. Outside New Zealand 2. National 3. Northland / Te Tai Tokerau 4. Auckland / Tāmaki makau rau 5. Waikato 6. Bay of Plenty / Te Moana-a-Toi 7. Gisborne / Te Tai Rāwhiti 8. Hawke’s Bay / Te Matau-a-Māui 9. Taranaki 10. Manawatū – Whanganui 11. Wellington / Te Whanganui-a-Tara 12. Tasman / Te Tai o Aorere 13. Nelson / Whakatū 14. Marlborough / Te Taihu o tewaka 15. West Coast / Te Tai Poutini 16. Canterbury / Waitaha 17. Otago / Ōtākou 18. Southland / Murihiku
<p>Which of the below options best describes you in the context of this consultation?</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. Individual water drinker / consumer 2. Registered drinking water supplier (excl marae) – either under the Health Act 1956 or the Water Services Act 2021 3. Unregistered drinking water supplier (excl marae) 4. Other commercial user of water 5. Stakeholder representative / industry body 6. Iwi representative organisation 7. Marae 8. Health professional 9. Laboratory 10. Local authority or Council Controlled Organisation 11. Regional Council 12. Central government agency 13. Local interest group 14. Other



Question	Possible responses
<p>If you selected 'Registered water supplier (excl Marae)' – are you</p> <p>If you have multiple supplies, please select your largest supply type.</p> <p>For a definition of each supply type refer to this document – Supply type.</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. On-demand Networked Drinking Water Supplies – < 50 (Very Small Supplies). 2. On-demand Networked Drinking Water Supplies – 50 – 500 (Small Supplies). 3. On-demand Networked Drinking Water Supplies – >500 (Large Supplies). 4. On-demand Networked Drinking Water Supplies – Varying Population Size Supplies. 5. Trickle Feed Water Supplies. 6. Self-supplied Building Drinking Water Supplies. 7. Water Carrier Services. 8. Planned Event Temporary Drinking Water Supplies. 9. Community Drinking Water Stations/Water Carrier Supplies –
<p>If you selected 'Unregistered water supplier (excl Marae)' – are you</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. School 2. Café 3. Camping grounds 4. Recreational facilities 5. Community halls and other local community facilities 6. Water supplied under an easement 7. Small commercial water supply networks 8. rural drinking water networks (also providing irrigation and water for livestock) 9. Other
<p>If you selected 'Other commercial user of water' – are you</p>	<p>Specify your commercial activity (example 'food manufacturer' 'bottled water supplier' etc)</p>
<p>If you selected 'Stakeholder representative / industry body'</p>	<p>Specify your area of interest or industry</p>



Question	Possible responses
If you selected 'Marae' – are you	Select option <ol style="list-style-type: none"> 1. Registered water supplier – either under the Health Act 1956 or the Water Services Act 2021 2. Unregistered water supplier
If you selected 'Health professional' – are you	Select option <ol style="list-style-type: none"> 1. District Health Board 2. Māori health provider 3. Private health provider 4. residential care provider 5. Other
If you selected 'Laboratory' – are you	Select option <ol style="list-style-type: none"> 1. IANZ accredited drinking water laboratory 2. IANZ - Level 2 Recognised Laboratory (transitional) 3. Other IANZ accredited laboratory (non-drinking water) 4. Other – non IANZ accredited laboratory
If you selected 'Local interest group'	Specify your interest
If you would like to be contacted in the future by Taumata Arowai in relation to drinking water issues, please select the option.	Select an option <ol style="list-style-type: none"> 1. Yes, I would like to be contacted in the future by Taumata Arowai in relation to drinking water issues on the email provided above. 2. No, I do not want to be contacted in the future by Taumata Arowai in relation to drinking water issues

Publishing submissions and Official Information Act 1982 requests

Publishing your submission

We intend to proactively publish the submissions made as part of this consultation on our website, but only if we are given permission to do so.



We may publish a summary of submissions. The summary will be aggregated to a level so that individual submission cannot be identified.

Official Information Act requests

Your submission may be subject to requests made under the Official Information Act 1982 (even if it hasn't been published). We must make your submission available in response to such a request, unless we have a good reason or other administrative grounds for withholding it.

Question	Possible response
<p>Do you give us permission to proactively publish your submission?</p>	<p>(Required response)</p> <p>Select an option:</p> <ol style="list-style-type: none"> 1. Yes. You may publish this submission, including my personal details (name, organisation and email address) 2. Yes, but without details that identify me. You may publish this submission but only after removing my personal details (name, organisation, and email address) 3. No. Do not publish this submission
<p>Official Information Act requests</p> <p>Your submission may be subject to requests made under the Official Information Act (OIA), even if it hasn't been published. Your preference about the release of your submission, including your contact details, will be relevant to our decision on each request. We may be legally required to make your submission available, even if you indicate that you would prefer us not to release it</p>	<p>(Required response)</p> <p>Select an option:</p> <ol style="list-style-type: none"> 1. Yes. You may make my submission available in response to requests made under the OIA, including my personal details (name, organisation, email) 2. Yes, but without details that identify me. I would prefer that you make my submission available with my personal details removed or redacted 3. Yes, but without the information indicated below 4. No, I would prefer that you do not make my submission available in response to requests made under the OIA



Question	Possible response
<p>If you have asked us to withhold your submission, your personal details, or any other information in your submission, please outline the reasons why you would prefer that information not be made available</p> <p>Reasons for withholding might include that it's commercially sensitive or it's personal information.</p> <p>Any decision Taumata Arowai makes to withhold information requested under the OIA can be reviewed by the Ombudsman, who may instruct Taumata Arowai to release the withheld information.</p>	<p>Please specify what information in your submission you believe should be withheld, and why</p>

Summary of proposed acceptable solution – Roof water supplies

About roof water supplies

Roof water supplies are water supplies where rainwater is collected off a roof to a storage tank on a consumer's property and used for drinking water. A roof water supply typically provides water for all domestic use to one building.

This Acceptable Solution applies to situations where water is supplied to a building, or group of buildings, which share the same roof water source including community buildings such as marae, papakāinga, churches, halls, sports clubs, cafés, other businesses, etc.

Where a roof water supply only provides water for one household dwelling, it is a domestic self-supply situation, and this is not subject to the Act.

It is estimated there are between 10,000 – 30,000 roof water supplies in New Zealand, including an estimated 900 marae (excluding all single dwellings supplied by roof water).

About acceptable solutions

Section 50 of the Act allows Taumata Arowai to prepare acceptable solutions for use by water suppliers to comply with the legislative requirements of the Act. Under section 51 of the Act, a water supplier who complies with an acceptable solution that is appropriate for their water supply, must be treated as having complied with the relevant legislative requirements. The duties to supply safe drinking water and to comply with drinking water standards still apply.

An acceptable solution is not the only means of complying with legislative requirements applicable to a particular water supply.

The concept of acceptable solutions did not exist under the Health Act 1956.



An acceptable solution specifies requirements and obligations that must be followed. These cover the design, configuration, installation, operation, maintenance, testing, monitoring, record keeping, emergency management and auditing that is required.

Water suppliers who adopt an acceptable solution are not required to prepare and submit a drinking water safety plan, including a source water risk management plan. However, all water suppliers adopting an acceptable solution are still responsible for identifying and managing risks to their water supply and consumers. As such, water suppliers are encouraged to implement the broad risk management approach that informs the development of a drinking water safety plan and source water risk management plan.

Acceptable Solution – Roof water supplies

This acceptable solution provides owners and operators of roof water supplies with an approved solution for providing drinking water to consumers that achieves compliance with the Act, the New Zealand Drinking Water Standards (the Standards) and the Drinking Water Quality Assurance Rules (the Rules) prepared by Taumata Arowai.

Note: Taumata Arowai is currently consulting on the draft Standards and Rules.

The acceptable solution includes the specifications for a point of entry treatment system (being the treatment of water at the point it enters the dwelling) installed to treat the roof water.

This acceptable solution may only be used where a networked community supply is not available to the dwellings or buildings that would be supplied by the roof water supply. A roof water supply can serve one or multiple dwellings and buildings. However, all dwellings or buildings that require drinking water must be served by the roof water supply.

All dwellings and buildings served must have a compliant point of supply treatment system that can deliver the required flow rates for the fixtures and appliances in the dwellings or buildings.

The entire population served must be less than 500 people.

The acceptable solution sets out the requirements for any water supplies that are intended to augment (or top up) the roof water supply and the requirements for the treatment system.

Water suppliers considering using this acceptable solution must meet all the criteria in the acceptable solution.

The development process of the proposed acceptable solution included external technical input and review by reference groups established by Taumata Arowai to provide feedback into a range of documents that are also part of a concurrent consultation process. The reference groups included representatives from small water suppliers, Māori communities and local authorities water suppliers.



Questions	Possible response	Recommendation
<p>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?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant - Acceptable Solutions need to consider the scale and complexity of supply. The Acceptable Solution seems onerous and complex, with a long list of requirements to meet.</p> <p>It is the Councils' view that the proposed Rules and Acceptable Solutions do not reflect the original intent to provide solutions that are workable for small suppliers and are cost effective and easy to comply with.</p> <p>As drafted, they are not workable, easy to comply with and will be cost prohibitive for many private water supplies.</p> <p>They should focus on the areas of greatest risk rather than trying to eliminate all risk.</p>	<p>We refer the reader to the main body of our submission where we recommend that the Rules and Acceptable Solutions are revised to reflect what is currently attainable and gradually increase the requirements to allow the supplies to "grow" into the raised requirements.</p> <p>The advantage of this approach is that Taumata Arowai can work with the sector, in particular the private suppliers, over time to increase the understanding and the responsibilities and requirements of being a water supplier, and increase their competency as water suppliers.</p> <p>Taking private water suppliers on a journey of engagement, relationship building and raising competency, in combination with financial support for the investment required, is likely to greatly increase compliance and drinking water safety in the long term.</p> <p>This also enables the required investment in staff, infrastructure, processes and documentation to be spread over a more realistic period.</p> <p>We recommend that the Acceptable Solution should be simplified significantly to be pragmatic, cost-effective and enable compliance.</p> <p>We also suggest that the population thresholds are re-considered as a potential mechanism to be more pragmatic with implementation and in consideration of risks. E.g. what if <25 is simply require the addition of end point treatment on kitchen tap (this could then apply in building for self supply for consistency if desired), then consider simplified acceptable solutions for 25-100 very small supply, then potentially have small supply's range from 100-500 and consider if acceptable solutions still apply, and if they do then have additional barriers over the very small supply requirements.</p>

Questions	Possible response	Recommendation
<p>Section 4 of the draft drinking water acceptable solution sets the criteria that must be met for the adoption of the proposed acceptable solution:</p> <p><u>Drinking water use criteria</u></p> <ul style="list-style-type: none"> Water is supplied to a building, or group of buildings, which share the same roof water source. 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. All buildings that require drinking water, and are served by the roof water supply, must receive treated water. All water used within a building or buildings fitted with a treatment system, must be treated by that system. Water provided for outdoor water use may be untreated but must be marked as non-potable in accordance with the Building Code (schedule 1 of the Building Regulations 1992). <p><u>Water supply size criteria</u></p> <ul style="list-style-type: none"> The population served by the entire drinking water supply must be less than 500 people. There are compliant treatment systems installed such that each building is serviced with treated drinking water. <p><u>Treatment system size criteria</u></p> <ul style="list-style-type: none"> Any treatment system must be designed to meet the peak instantaneous demand for treated water. <p>Do you agree with these proposed criteria?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment to explain your answer -</p> <ul style="list-style-type: none"> This section implies that a single treatment system could be used to treat water for multiple buildings, however the requirements refer solely to end-point treatment systems. There are cases where a single treatment plant is used to provide treated roof water to multiple buildings (e.g. marae, schools). It is likely to be more expensive to install a treatment plant on every building, particularly when there is already a centralised treatment plant. Consideration needs to be given to rural buildings that are only used occasionally (e.g. woolsheds). There should be an option for these buildings to opt out of providing treated water and instead display boil water notices. 	<ul style="list-style-type: none"> Change the requirements to refer to a treatment system (rather than an end-point treatment system) throughout the document so that a centralised treatment plant is acceptable. Add a bullet point under “drinking water use criteria” to read: <ul style="list-style-type: none"> <u>Water provided to buildings which are only used occasionally (e.g. woolsheds) may be untreated but must be marked as non-potable in accordance with the Building Code.</u>
<p>Section 6 of the draft drinking water acceptable solution covers the requirements that must be met for every serviced building that receives water from a roof water supply.</p> <p>Section 6.1 covers the roof water system requirements.</p> <p>Do you agree that the proposed roof water system requirements are appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment to explain your answer -</p>	<p>○</p>
<p>Section 6 of the draft drinking water acceptable solution covers the requirements that must be met for every serviced building that receives water from a roof water supply.</p> <p>Section 6.2 covers the requirements the end point treatment system requirements.</p> <p>Do you agree that the proposed end point treatment system requirements are appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> It is unclear why the water treatment plant must be connected to a mains power supply in section 6.2. Whether the electricity is provided by mains, solar or a generator is of no consequence. To be more inclusive, the term electricity supply should be used instead. 	<ul style="list-style-type: none"> Reword to read: Each treatment system must be designed so that all electrical components are connected to mains power through a standard 3-pin 240 volt plug and can be disconnected from mains power <u>the electricity supply</u> if required

Questions	Possible response	Recommendation
<p>Section 6 of the draft drinking water acceptable solution covers the requirements that must be met for every serviced building that receives water from a roof water supply.</p> <p>Section 6.3 covers the requirements the end point treatment system configuration.</p> <p>Do you agree that the proposed end point treatment system configuration is appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> Section 6.3 requires any building using the acceptable solution to only use treated water. This is contrary to the Clause G12 Water Supplies of the Building Code, which allows the use of non-potable water sources providing backflow prevention is in place. It is unclear in section 6.3 whether the water carrier needs to meet the requirements listed in the bullet points or the draft Drinking Water Quality Assurance Rules. It is unclear why if a bore or spring is used to top up the roof water, that it would need to meet the S2 rules in the Drinking Water Quality Assurance Rules (if the acceptable solution for bores and springs is not used). If the population served is less than 50, the S1 rules would be more appropriate. It is also unclear whether the bore or spring water would need to meet the requirements of the rules all of the time or only when being used to top up the supply. The requirement to not operate the treatment system on low UVI or dose is already covered in section 6.2 (which requires automatic shutdown on low UVI or dose). The requirements to not operate the treatment system if there is a power cut or during the lamp warm up period, and for a local alarm for low UVI or dose, should be moved to section 6.2. There is no mention of the need for all storage tanks to be secure from contamination by vermin or faecal material. Vermin can be a major source of contamination and are a significant risk to water supplies. 	<ul style="list-style-type: none"> Reword to read: Any building using the roof water drinking water acceptable solution must only use treated water <u>for potable use</u> Reword to read: The water supplier is only allowed to augment (top up) the roof water with water from a registered water carrier or a bore or spring that meets the following requirements <u>while that source is in use</u>: <ul style="list-style-type: none"> Section 6.1. Requirements before the drinking water acceptable solution can be adopted from the Drinking Water Acceptable Solution for Spring and Bore Drinking Water Supplies. Section 6.2 Bore and Spring requirements from the Drinking Water Acceptable Solution for Spring and Bore Drinking Water Supplies. Or Section 10.5. S1 Source water rules from the Drinking Water Quality Assurance Rules for supplies that serve <u>fewer than 50 people</u> Section 10.5. S2 Source water rules from the Drinking Water Quality Assurance Rules <u>for supplies that serve 50 – 500 people</u> Delete the bullet points for “treatment systems must not be operated” from section 6.3 and reword the last bullet point of section 6.2 to read: <ul style="list-style-type: none"> shutdown flow automatically on a low UVI or dose reading (as per the manufacturer’s specification), <u>power outage, and during the lamp warm up period.</u> <u>The treatment system must generate a local alarm if the UVI level or dose is below that recommended by the manufacturer for effective disinfection.</u> Add a new requirement: <ul style="list-style-type: none"> <u>Every treated water storage tank is secure</u>

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<p>Section 7 of the draft drinking water acceptable solution covers the operation and maintenance for the roof water supply that includes requirements for each treatment system.</p> <p>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?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> • The standard operating procedures are overly prescriptive and in some instances contradict the requirements of the acceptable solution. Standard operating procedures should be limited to things that need to be done on a regular basis. One of the requirements in section 6.1 is that there must be no trees or other overhanging vegetation, so it makes no sense to have an SOP for trimming overhanging vegetation. There may be no trees at all anywhere nearby, in which case having an SOP for trimming overhanging vegetation would be pointless. Roof painting will only occur once every 10 years and will likely be done by a professional painter, so it is unclear what benefit an SOP would offer. Equipment will only be replaced rarely, so again it is unclear what benefit an SOP would offer. • Some of the inspection procedures listed are impractical: <ul style="list-style-type: none"> ○ Once cartridge filters are installed, it isn't possible to check the pore size of the filter. ○ How would an underground storage tank that is full of water be inspected to check that it is protected from entry of groundwater? This would only be possible if the tank was emptied first and such an inspection would likely require confined space entry unless it was undertaken by a remote operated vehicle. Either way, this is would be difficult, expensive and disruptive to the water supply. ○ Once a UV system is installed, how would a water supplier check that it is installed correctly? The experts in UV installation are the UV suppliers, not the water supplier. 	<ul style="list-style-type: none"> • Abbreviate and simplify the list of required standard operating procedures to focus on routine tasks that lower the risk to the water supply. The suggested list of SOPs is: <ul style="list-style-type: none"> ○ Operating the treatment plant ○ Replacing cartridge filters ○ Maintaining the UV unit ○ Taking water quality samples ○ Calibrating equipment • Abbreviate and simplify the list of inspection procedures to be more practical and focus on those that lower the risk to the water supply. The list of suggested inspection procedures is: <ul style="list-style-type: none"> ○ That the roof catchment, gutters, leaf screen and first flush diverter are clean and clear of debris ○ Storage tanks are secure from contamination and vermin ○ Annual testing of testable backflow prevention devices and annual checking of air gaps ○ Calibration of the UVI sensor or UV dose meter.

Questions	Possible response	Recommendation
<p>Section 8 of the draft drinking water acceptable solution covers the monitoring and testing the water supplier must undertake.</p> <p>Do you agree with the source water monitoring requirements?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> • The rules in the two tables of testing requirements (source water monitoring requirements and treated water monitoring requirements) are somewhat confused: <ul style="list-style-type: none"> ○ RF1 in the table of source water quality monitoring requirements requires all testing to be done by a laboratory which is IANZ accredited and on Taumata Arowai's register. Presumably tests on treated water that need to be undertaken by a laboratory should also be undertaken by a laboratory that meets these requirements. ○ RF2 in the table of source water quality monitoring requirements requires microbiological samples to be delivered to a laboratory within 24 hours, yet no microbiological testing of source water is required. • When a sample is taken, the water temperature will generally be significantly higher than 6 degrees Celsius and it is not practical to instantly drop the water temperature to below 6 degrees Celsius. It should be made clear that it is the container that the sample is being transported in that is to be less than 6 degrees Celsius. Consideration should also be given on how practical it is for rural private water suppliers ability to meet this criteria. • Testing of benzo[a]pyrene is only appropriate if there is a chimney on the property. 	<ul style="list-style-type: none"> • Combine the two monitoring requirements tables into a single table to avoid confusion and to simplify this section. • Amend the requirement for benzo[a]pyrene testing to be required only if there is a chimney present on the property. • Reword RF2 to read: <ul style="list-style-type: none"> All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>inside a container which has an internal</u> at a temperature of less than 6 degrees Celsius.

Questions	Possible response	Recommendation
<p>Section 8 of the draft drinking water acceptable solution covers the monitoring and testing the water supplier must undertake.</p> <p>Do you agree with the treated water monitoring requirements?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> The limit for E. coli should be as per the maximum acceptable value in the drinking water standards, rather than not detected. 	<ul style="list-style-type: none"> Amend the E. coli limit in RF5 to be less than 1 in 100 mL of sample
<p>Section 9 of the draft drinking water acceptable solution covers the incident or emergency response plan the water supplier must develop.</p> <p>Do you agree with the incident or emergency response plan the water supplier must develop are appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <p>It is unreasonable to expect such small water supplies, often run by marae, community groups or farmers, to prepare an incident and emergency management plan. In the event of an emergency or incident, they will simply call the person that maintains their water supply to come and fix it, or order a tanker of water to be delivered.</p> <p>Rather than every one of the thousands of private water suppliers around the country preparing bespoke plans and communications, it would be far more efficient and effective for Taumata Arowai to provide a simple, standard template for water suppliers to use. Key contacts for maintenance and water tankers are already included in the O&M manual requirements.</p>	<p>Replace this section entirely to a reference to a page on Taumata Arowai's website which provides the following documents for water suppliers to use:</p> <ul style="list-style-type: none"> Boil water notices and do not drink notices Simple template procedure for how to advise consumers of a problem with the water supply Procedure to follow if a test result exceeds the MAV

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<p>Section 10 of the draft drinking water acceptable solution covers the training and awareness obligations of the water supplier.</p> <p>Do you agree with the training and awareness obligations of the water supplier are appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> • Presumably the part of the heading in section 11 that reads “Training records must demonstrate that training and competency validation has been completed” belongs in section 10. Taumata Arowai needs to provide further context of its expectations in terms of training and competency validation. • Suppliers each exist in the nuanced context of their communities with specific knowledge and experience of their own systems. When speaking with people, many stated that the draft Rules and Acceptable Solutions have been drafted without considering the historical knowledge, skills and experience and cultural customs which had been passed down through generations and that they will be ‘imposing’ on those existing bodies of knowledge. • How would this competency-based training reflect tikanga and supplier intergenerational knowledge of source and system? 	<ul style="list-style-type: none"> • The requirements for training and awareness should be amended to consider tikanga and intergenerational knowledge about the water supply. • Correct the formatting of the sentence “Training records must demonstrate that training and competency validation has been completed” so that it is in section 10 and not in the heading for section 11.

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<p>Section 11 of the draft drinking water acceptable solution covers the auditing obligations of the water supplier.</p> <p>Do you agree with the auditing obligations of the water supplier are appropriate?</p>	<p>Yes Partially No Don't know</p> <p>Add a comment if relevant - It is unreasonable to expect such small water supplies to undertake such extensive audits. The audit checklist is far too complex and onerous. How would anyone other than the water treatment plant installer know whether the treatment system had been designed, configured and installed according to the acceptable solution requirements?</p> <p>It is unclear when and under what circumstances an external audit would be required on behalf of Taumata Arowai.</p> <p>Does Taumata Arowai expect councils to undertake these audits on their behalf. This would obviously have significant impact on resources to deliver based on the significant numbers of private water suppliers as defined under the Water Services Act.</p>	<p>Simplify the audit checklist so that it is practical and can be used by a small water supplier. Suggested checklist:</p> <ul style="list-style-type: none"> • Has the number of customers and/or water volume required increased? If it has, check that there is still 96 hours of untreated water storage at average demand. • Does the operations and maintenance manual comply with the acceptable solution requirements? • Are there are records showing that the people operating and maintaining the water supply have been trained in the use of the operations and maintenance manual in the last three years? • Have the cartridge filters and UV unit been maintained at the required frequencies? • Has the UVI sensor or UV dose meter been calibrated or replaced in the past two years? • Has any testable backflow prevention devices been tested and any air gaps checked in the last year? • Have inspections of the roof water collection system and storage tanks been undertaken at the required frequency? Has the untreated water storage tank has been cleaned out in the past 10 years? • Has the required water testing has been undertaken? Did any of the values exceed the maximum acceptable values in the drinking water standards? If yes, was Taumata Arowai notified and was its response procedure followed?

If you want to provide any additional feedback, please provide this here:

Additional feedback:

Please refer to the main body of the submission – Appendix 1 Hawke’s Bay Private Drinking Water Supply Project

B- Drinking Water Acceptable Solution for Rural Agricultural Water Supplies



Tell us a bit about yourself

Question	Possible responses
<p>Full name</p> <p>Email address - this will only be used if we need to communicate with you about your submission, or if you indicate below that you would like to be contacted in the future in relation to drinking water issues</p> <p>Note you are not required to provide your email address</p>	<p>Toni Goodlass</p> <p>toni.goodlass@napier.govt.nz</p>
<p>Are you providing feedback:</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. As an individual 2. On behalf of an organisation or group <ol style="list-style-type: none"> a. organisation or group name: Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke's Bay District Council b. position/ title within the organisation: Regional Programme Director – Hawke's Bay Five Councils



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<p>Where do you live/reside?</p> <p>If your organisation has presence in more than one region – select ‘National’</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. Outside New Zealand 2. National 3. Northland / Te Tai Tokerau 4. Auckland / Tāmaki makau rau 5. Waikato 6. Bay of Plenty / Te Moana-a-Toi 7. Gisborne / Te Tai Rāwhiti 8. Hawke’s Bay / Te Matau-a-Māui 9. Taranaki 10. Manawatū – Whanganui 11. Wellington / Te Whanganui-a-Tara 12. Tasman / Te Tai o Aorere 13. Nelson / Whakatū 14. Marlborough / Te Taihu o tewaka 15. West Coast / Te Tai Poutini 16. Canterbury / Waitaha 17. Otago / Ōtākou 18. Southland / Murihiku
<p>Which of the below options best describes you in the context of this consultation?</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. Individual water drinker / consumer 2. Registered drinking water supplier (excl marae) – either under the Health Act 1956 or the Water Services Act 2021 3. Unregistered drinking water supplier (excl marae) 4. Other commercial user of water 5. Stakeholder representative / industry body 6. Iwi representative organisation 7. Marae 8. Health professional 9. Laboratory 10. Local authority or Council Controlled Organisation 11. Regional Council 12. Central government agency 13. Local interest group 14. Other



Question	Possible responses
<p>If you selected 'Registered water supplier (excl Marae)' – are you</p> <p>If you have multiple supplies, please select your largest supply type.</p> <p>For a definition of each supply type refer to this document – Supply type.</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. On-demand Networked Drinking Water Supplies – < 50 (Very Small Supplies). 2. On-demand Networked Drinking Water Supplies – 50 – 500 (Small Supplies). 3. On-demand Networked Drinking Water Supplies – >500 (Large Supplies). 4. On-demand Networked Drinking Water Supplies – Varying Population Size Supplies. 5. Trickle Feed Water Supplies. 6. Self-supplied Building Drinking Water Supplies. 7. Water Carrier Services. 8. Planned Event Temporary Drinking Water Supplies. 9. Community Drinking Water Stations/Water Carrier Supplies –
<p>If you selected 'Unregistered water supplier (excl Marae)' – are you</p>	<p>Select option</p> <ol style="list-style-type: none"> 1. School 2. Café 3. Camping grounds 4. Recreational facilities 5. Community halls and other local community facilities 6. Water supplied under an easement 7. Small commercial water supply networks 8. rural drinking water networks (also providing irrigation and water for livestock) 9. Other
<p>If you selected 'Other commercial user of water' – are you</p>	<p>Specify your commercial activity (example 'food manufacturer' 'bottled water supplier' etc)</p>
<p>If you selected 'Stakeholder representative / industry body'</p>	<p>Specify your area of interest or industry</p>

Question	Possible responses
If you selected 'Marae' – are you	Select option <ol style="list-style-type: none"> 1. Registered water supplier – either under the Health Act 1956 or the Water Services Act 2021 2. Unregistered water supplier
If you selected 'Health professional' – are you	Select option <ol style="list-style-type: none"> 1. District Health Board 2. Māori health provider 3. Private health provider 4. residential care provider 5. Other
If you selected 'Laboratory' – are you	Select option <ol style="list-style-type: none"> 1. IANZ accredited drinking water laboratory 2. IANZ - Level 2 Recognised Laboratory (transitional) 3. Other IANZ accredited laboratory (non-drinking water) 4. Other – non IANZ accredited laboratory
If you selected 'Local interest group'	Specify your interest
If you would like to be contacted in the future by Taumata Arowai in relation to drinking water issues, please select the option.	Select an option <ol style="list-style-type: none"> 1. Yes, I would like to be contacted in the future by Taumata Arowai in relation to drinking water issues on the email provided above. 2. No, I do not want to be contacted in the future by Taumata Arowai in relation to drinking water issues

Publishing submissions and Official Information Act 1982 requests

Publishing your submission

We intend to proactively publish the submissions made as part of this consultation on our website, but only if we are given permission to do so.



We may publish a summary of submissions. The summary will be aggregated to a level so that individual submissions cannot be identified.

Official Information Act requests

Your submission may be subject to requests made under the Official Information Act 1982 (even if it hasn't been published). We must make your submission available in response to such a request, unless we have a good reason or other administrative grounds for withholding it.

Question	Possible response
Do you give us permission to proactively publish your submission?	<p>(Required response)</p> <p>Select an option:</p> <ol style="list-style-type: none"> 1. Yes. You may publish this submission, including my personal details (name, organisation and email address) 2. Yes, but without details that identify me. You may publish this submission but only after removing my personal details (name, organisation, and email address) 3. No. Do not publish this submission



Question	Possible response
<p>Official Information Act requests</p> <p>Your submission may be subject to requests made under the Official Information Act (OIA), even if it hasn't been published. Your preference about the release of your submission, including your contact details, will be relevant to our decision on each request. We may be legally required to make your submission available, even if you indicate that you would prefer us not to release it</p>	<p>(Required response)</p> <p>Select an option:</p> <ol style="list-style-type: none"> 1. Yes. You may make my submission available in response to requests made under the OIA, including my personal details (name, organisation, email) 2. Yes, but without details that identify me. I would prefer that you make my submission available with my personal details removed or redacted 3. Yes, but without the information indicated below 4. No, I would prefer that you do not make my submission available in response to requests made under the OIA
<p>If you have asked us to withhold your submission, your personal details, or any other information in your submission, please outline the reasons why you would prefer that information not be made available</p> <p>Reasons for withholding might include that it's commercially sensitive or it's personal information.</p> <p>Any decision Taumata Arowai makes to withhold information requested under the OIA can be reviewed by the Ombudsman, who may instruct Taumata Arowai to release the withheld information.</p>	<p>Please specify what information in your submission you believe should be withheld, and why</p>

Summary of proposed Drinking Water Acceptable Solution for Rural Agricultural Drinking Water Supplies

About rural agricultural water supplies

Rural agricultural water supplies are supplies where water is provided at an agreed quantity over a period of 24 hours (called trickle feed) to a storage tank on the consumer's property. These supplies primarily provide stock water or irrigation water and at least 65% of the total supply must be for this



purpose. These supplies can also provide water to houses at farms that are connected to the stock water or irrigation supply.

The water provided by rural agricultural water supply may or may not be safe to drink. If the water is to be consumed by people at households, or other buildings provided with water from the supply, it needs to comply with the drinking water standards made under the Water Services Act 2021 (the Act).

It may not be economic to treat all water in a rural agricultural water supply at a centralised treatment plant to meet the drinking water standards. A 'point of entry' treatment system (being the treatment of water at the point it enters the dwelling) provides a way of ensuring that households and other buildings supplied from a rural agricultural water supply receive water that complies with the required drinking water standards and is safe to drink.

It is estimated there could be 300-500 rural agricultural water supplies with each one supplying drinking water to between 10 to 2,500 people. Currently, there is no reliable register of all rural agricultural water supplies.

About acceptable solutions

Section 50 of the Act allows Taumata Arowai to prepare acceptable solutions for use by water suppliers to comply with the legislative requirements of the Act. Under section 51 of the Act, a water supplier who complies with an acceptable solution that is appropriate to their water supply, must be treated as having complied with the legislative requirements applicable to that acceptable solution.

An acceptable solution is not the only means of complying with legislative requirements for a particular water supply.

The concept of acceptable solutions did not exist under the Health Act 1956.

An acceptable solution specifies requirements and obligations that must be followed. These cover the design, configuration, installation, operation, maintenance, testing, monitoring, record keeping, emergency management and auditing that is required.

Water suppliers who adopt an acceptable solution are not required to prepare and submit a drinking water safety plan, including a source water risk management plan. However, all water suppliers adopting an acceptable solution are still responsible for identifying and managing risks to their water supply and consumers. As such, water suppliers are encouraged to implement the broad risk management approach that informs the development of a drinking water safety plan and source water risk management plan.

Drinking Water Acceptable Solution for Rural Agricultural Water Supplies

This proposed acceptable solution provides owners and operators of rural agricultural water supplies with an approved solution for providing drinking water to consumers that achieves compliance with parts of the Act, the New Zealand Drinking Water Standards (the Standards) and the Drinking Water Quality Assurance (the Rules) prepared by Taumata Arowai.

Note Taumata Arowai is currently consulting on Standards and Rules.



Under this proposed acceptable solution up to 35 percent of the rural agricultural supply may be used for domestic household purposes and at least 65 percent of the supply must be used for rural and agricultural purposes, such as stock water, wash down, irrigation or other non-domestic uses.

Adopting this proposed acceptable solution means that all the dwellings and buildings requiring drinking water must install the proposed treatment system. There is a maximum number of dwellings or buildings served by a single treatment system, and a maximum number of dwellings or buildings on one property, before a dedicated, centralised treatment system is required.

There is no upper limit on the population served by a rural agricultural water supply. However, there is a limit on the number of people that can be supplied within a single dwelling or building before a specifically designed system must be required.

This proposed acceptable solution sets out the testing the supplier must undertake on the source water before adopting the acceptable solution. It also sets out the operational requirements for the rural agricultural water supply and defines what is required for a point of entry treatment system at the dwellings and buildings being supplied.

Water suppliers considering using this proposed acceptable solution must meet all the criteria in the acceptable solution.

The development process of the proposed acceptable solution included external technical input and review by reference groups established by Taumata Arowai to provide feedback into a range of documents that are also part of a concurrent consultation process. The reference groups included representatives from rural agricultural water supplies, Federated Farmers, Māori communities and local authorities water suppliers.



Questions	Possible response	Recommendation
<p>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?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant - Acceptable Solutions need to consider the scale and complexity of supply. The Acceptable Solution seems onerous and complex, with a long list of requirements to meet.</p> <p>It is the Councils' view that the proposed Acceptable Solutions do not reflect the original intent to provide solutions that are workable for small suppliers and are cost effective and easy to comply with.</p> <p>As drafted, they are not workable, easy to comply with and will be cost prohibitive for many private water supplies.</p>	<p>We refer the reader to the main body of our submission where we recommend that the Rules and Acceptable Solutions are revised to reflect what is currently attainable and gradually increase the requirements to allow the supplies to “grow” into the raised requirements.</p> <p>The advantage of this approach is that Taumata Arowai can work with the sector, in particular the private suppliers, over time to increase the understanding and the responsibilities and requirements of being a water supplier and increase their competency as water suppliers.</p> <p>Taking private water suppliers on a journey of engagement, relationship building and raising competency, in combination with financial support for the investment required, is likely to greatly increase compliance and drinking water safety in the long term.</p> <p>This also enables the required investment in staff, infrastructure, processes and documentation to be spread over a more realistic period.</p> <p>We recommend that the Acceptable Solution should be simplified to be more pragmatic, cost-effective and enable compliance.</p> <p>We also suggest that the population thresholds are re-considered as a potential mechanism to be more pragmatic with implementation and in consideration of risks. E.g. what if <25 is simply require the addition of end point treatment on kitchen tap (this could then apply in building for self supply for consistency if desired), then consider simplified acceptable solutions for 25-100 very small supply, then potentially have small supply's range from 100-500 and consider if acceptable solutions still apply, and if they do then have additional barriers over the very small supply requirements.</p>
<p>Section 4 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies sets the criteria that must be met for the adoption of the proposed acceptable solution:</p> <p><u>Drinking water use criteria</u></p> <ul style="list-style-type: none"> Water is supplied through a network system to a farm (or farms) to support farm activities (e.g. stock water) but some of the water is used at households for domestic purposes. Up to 35 percent of the water from the supply may be used for domestic purposes (and therefore goes through a compliant treatment system). At least 65 percent of the water must be used for stock water, wash down, irrigation or other non-domestic uses. 	<ul style="list-style-type: none"> Yes Partially No Don't know <p>Add a comment to explain your answer -</p> <ul style="list-style-type: none"> It is unclear why this Acceptable Solution requires at least 65% of the water to be used for non-domestic purposes. There are other supplies that would benefit from being able to use this Acceptable Solution, particularly the ability to use end-point treatment. There is a papakainga being built in the rural area of Hastings District which is using end-point treatment for a bore supply, as directed by their building consent. If an end-point treatment acceptable solution is not made available to them, they will need to install a centralised water treatment plant, which would be additional cost and potentially serve no purpose. It is therefore recommended that the acceptable solution is 	<p>Amend the criteria to read:</p> <p>Drinking Water Use Criteria</p> <ul style="list-style-type: none"> Water is supplied through a network system to a farm (or farms) to support farm activities (e.g. stock water) but some of the water is used at households for domestic purposes. Up to 35 percent of the water from the supply may be used for domestic purposes (and therefore goes through a compliant treatment system). At least 65 percent of the water must be used for stock water, wash down, irrigation or other non-domestic uses The water from any household treatment system must be used for domestic purposes only; i.e. drinking, food preparation, washing and oral hygiene for dwellings and farm accommodation or farm buildings. All water used within a building fitted with a treatment system must be treated by that system. Water provided for outdoor water use may be untreated but must be marked as non-potable in accordance with the Building Code (clauses G12 Water Supplies and F8 Signs).

Questions	Possible response	Recommendation
<ul style="list-style-type: none"> The water from any household treatment system must be used for domestic purposes only; i.e. drinking, food preparation, washing and oral hygiene for dwellings and farm accommodation or farm buildings. All water used within a building fitted with a treatment system must be treated by that system. Water provided for outdoor water use may be untreated but must be marked as non-potable in accordance with the Building Code (clauses G12 Water supplies and F8 Signs). <p><u>Water supply size criteria</u></p> <ul style="list-style-type: none"> There is no upper or lower limit to the population served by the rural agricultural water supply. End point treatment systems, which comply with the requirements for this drinking water Acceptable Solution, are installed for each single dwelling or building (e.g. shearers' quarters) serviced with drinking water or one treatment system which supplies water for up to three buildings. Each property that is connected to the rural agricultural water supply that adopts the drinking water Acceptable Solution, can install treatment systems at ten or fewer dwellings or buildings. Properties connected to a rural agricultural water supply that serve more than ten buildings, require a dedicated, centralised treatment system to provide potable water to all those buildings. All dwellings and buildings requiring drinking water must be supplied with water from a treatment system. Individual buildings or dwellings cannot opt out. <p><u>Treatment system size criteria</u></p> <ul style="list-style-type: none"> Any treatment system must serve no more than 30 people (within a single dwelling or building). Buildings serving more than 30 people require a treatment system specifically designed for the volume of water required. <p>Do you agree with these proposed criteria?</p>	<p>made more inclusive by removing the requirement for at least 65% of the water to be used for non-domestic purposes.</p> <ul style="list-style-type: none"> Consideration needs to be given to rural buildings that are only used occasionally (e.g. woolsheds). There should be an option for these buildings to opt out of providing treated water and instead display boil water notices. The last bullet point in the water supply size criteria fits better under the drinking water use criteria, as it does not relate to size. 	<ul style="list-style-type: none"> <u>All dwellings and buildings requiring drinking water must be supplied with water from a treatment system. Individual buildings or dwellings which are only used occasionally (e.g. woolsheds) cannot opt out but must display a boil water notice.</u> <p>Water supply size criteria</p> <ul style="list-style-type: none"> There is no upper or lower limit to the population served by the rural agricultural water supply. End point treatment systems, which comply with the requirements for this drinking water Acceptable Solution, are installed for each single dwelling or building (e.g. shearers' quarters) serviced with drinking water or one treatment system which supplies water for up to three buildings. Each property that is connected to the rural agricultural water supply that adopts the drinking water Acceptable Solution, can install treatment systems at ten or fewer dwellings or buildings. Properties connected to a rural agricultural water supply that serve more than ten buildings, require a dedicated, centralised treatment system to provide potable water to all those buildings. <p>All dwellings and buildings requiring drinking water must be supplied with water from a treatment system. Individual buildings or dwellings cannot opt out.</p> <p>Treatment system size criteria</p> <ul style="list-style-type: none"> Any treatment system must serve no more than 30 people (within a single dwelling or building). Buildings serving more than 30 people require a treatment system specifically designed for the volume of water required.

Questions	Possible response	Recommendation																		
<p>Section 7 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the requirements that must be met for both the rural agricultural supply, and any treatment systems located at houses or other buildings that receive water from the supply.</p> <p>Section 7.1 covers the requirements before the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies can be adopted.</p> <p>Do you agree that the proposed requirements for the use of the Drinking Water Acceptable Solution for Rural Agricultural Water Supplies are appropriate?</p>	<ol style="list-style-type: none"> 1. Yes 2. Partially 3. No 4. Don't know <p>Add a comment to explain your answer -</p> <ul style="list-style-type: none"> • There is no requirement to chlorinate, so there is no need to say that determinands must not be at a level that would form a precipitate when oxidised by chlorine • High alkalinity does not form a scale on UV lamps, but hardness does. • Treatment to address high iron or manganese should be provided for in the Acceptable Solution 	<p>Amend the source water testing table as follows:</p> <table border="1" data-bbox="1822 247 2783 1438"> <thead> <tr> <th data-bbox="1822 247 2021 321">Parameter Determinand</th> <th data-bbox="2030 247 2475 321">Limit Requirement</th> <th data-bbox="2484 247 2783 321">Minimum number of samples</th> </tr> </thead> <tbody> <tr> <td data-bbox="1822 327 2021 646">Iron</td> <td data-bbox="2030 327 2475 646"> <ul style="list-style-type: none"> • Must not be If it is at a level which would compromise the effectiveness of UV disinfection, <u>an iron removal process must be included in the treatment plant upstream of the UV unit</u> </td> <td data-bbox="2484 327 2783 646">3</td> </tr> <tr> <td data-bbox="1822 653 2021 972">Manganese</td> <td data-bbox="2030 653 2475 972"> <ul style="list-style-type: none"> • Must not be If it is at a level which would compromise the effectiveness of UV disinfection, <u>an iron removal process must be included in the treatment plant upstream of the UV unit</u> </td> <td data-bbox="2484 653 2783 972">3</td> </tr> <tr> <td data-bbox="1822 978 2021 1255">Alkalinity Hardness</td> <td data-bbox="2030 978 2475 1255"> <ul style="list-style-type: none"> • Must not If it is at a level which would form a scale that reduces the effectiveness of UV disinfection, <u>a softening process must be included in the treatment plant upstream of the UV unit.</u> </td> <td data-bbox="2484 978 2783 1255">3</td> </tr> <tr> <td data-bbox="1822 1262 2021 1360">UV transmittance</td> <td data-bbox="2030 1262 2475 1360"> <ul style="list-style-type: none"> • Must meet the requirements of the UV manufacturer </td> <td data-bbox="2484 1262 2783 1360">3</td> </tr> <tr> <td data-bbox="1822 1367 2021 1438">Turbidity</td> <td data-bbox="2030 1367 2475 1438"> <ul style="list-style-type: none"> • Must not exceed 20 NTU at any time </td> <td data-bbox="2484 1367 2783 1438">5</td> </tr> </tbody> </table>	Parameter Determinand	Limit Requirement	Minimum number of samples	Iron	<ul style="list-style-type: none"> • Must not be If it is at a level which would compromise the effectiveness of UV disinfection, <u>an iron removal process must be included in the treatment plant upstream of the UV unit</u> 	3	Manganese	<ul style="list-style-type: none"> • Must not be If it is at a level which would compromise the effectiveness of UV disinfection, <u>an iron removal process must be included in the treatment plant upstream of the UV unit</u> 	3	Alkalinity Hardness	<ul style="list-style-type: none"> • Must not If it is at a level which would form a scale that reduces the effectiveness of UV disinfection, <u>a softening process must be included in the treatment plant upstream of the UV unit.</u> 	3	UV transmittance	<ul style="list-style-type: none"> • Must meet the requirements of the UV manufacturer 	3	Turbidity	<ul style="list-style-type: none"> • Must not exceed 20 NTU at any time 	5
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<p>Section 7 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the requirements that must be met for both the rural agricultural supply, and any treatment systems located at houses or other buildings that receive water from the supply.</p> <p>Section 7.2 covers the requirements the rural agricultural water supply must meet.</p> <p>Do you agree that the proposed turbidity and backflow prevention device requirements are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> Backflow prevention devices will create pressure loss issues for some water supplies (e.g. farms with small diameter pipes) and will limit the flow. It may also be difficult to install backflow prevention devices on underground pipes where the pipe location is not known. The backflow prevention requirements should be consistent with Clause G12 Water Supplies of the Building Code. Air gaps are effective at preventing backflow and are permitted backflow prevention devices for high and medium hazard activities in Clause G12. For consistency, this should be the same in the acceptable solution. 	<p>Amend the first bullet point to read:</p> <ul style="list-style-type: none"> Backflow prevention devices <u>or air gaps</u> must be installed on all boundary connections to the rural agricultural water supply in accordance with AS/NZS 3500 and the Building Code (clause G12 Water supplies). The minimum requirement is for non-testable double check valves, but devices should be determined depending on the level of risk associated with activities at each property connection. Backflow prevention devices are not required where all upstream water storage tanks incorporate air gaps that comply with the Building Code clause G12 Water Supplies.
<p>Section 7 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the requirements that must be met for both the rural agricultural supply, and any treatment systems located at houses or other buildings that receive water from the supply.</p> <p>Section 7.3 covers the end point treatment system requirements.</p> <p>Do you agree that the proposed end point treatment system requirements are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <p>It is unclear why the water treatment plant must be connected to a mains power supply in section 7.2. Whether the electricity is provided by mains, solar or a generator is of no consequence. To be more inclusive, the term electricity supply should be used instead.</p>	<p>Amend the first bullet point under “Each treatment system must” to read:</p> <ul style="list-style-type: none"> Be designed so that all electrical components are connected to mains power through a standard 3-pin 240 volt plug and can be disconnected from mains power <u>the electricity supply</u> if required
<p>Section 7 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the requirements that must be met for both the rural agricultural supply, and any treatment systems located at houses or other buildings that receive water from the supply.</p> <p>Section 7.4 covers the end point treatment system configuration.</p> <p>Do you agree that the proposed end point treatment system configuration is appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> If roof water is used to supplement the supply, it does not matter whether the roof water comes from the building which uses the water or a nearby building (e.g. shed) which may be more favourable, for example because it has a larger area or does not have a chimney. It is unclear why backflow prevention would be needed on the roof water connection to the untreated water storage tank, in addition to the backflow prevention device at the point of supply. Given the height difference between the gutters and the tank, water will not flow back into the gutters and even if it did it would be of no consequence. The requirement for backflow prevention on other connections to the untreated water storage tank should therefore be removed. 	<p>Amend the first and third bullet points to read:</p> <ul style="list-style-type: none"> Any dwelling or building with a treatment system, must only use water from the rural drinking water supply and <u>may also be only allowed to</u> augment the supply with roof water from the building that is being supplied with water. Every connection to the untreated water storage tank that provides water to the treatment system must include a backflow prevention device (check valve).

Questions	Possible response	Recommendation
<p>Section 8 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the operation and maintenance for the installation, maintenance and testing of all household or building treatment systems installed under this drinking water Acceptable Solution.</p> <p>Section 8.1 covers the operations and maintenance manual.</p> <p>Do you agree that the proposed operations and maintenance manual requirements are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant – The requirements for the operations and maintenance manual should be simplified. A detailed process and instrumentation diagram is inappropriate for a rural agricultural supply, most of which are run by farmers. A schematic of the water supply would be more helpful.</p>	<p>Amend the second bullet point to read:</p> <ul style="list-style-type: none"> process and instrumentation diagrams for all the components in the treatment system, including all valves, pumps and bypasses <u>a schematic of the system including all valves, pumps and bypasses.</u>
<p>Section 8 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the operation and maintenance for the installation, maintenance and testing of all household or building treatment systems installed under this drinking water Acceptable Solution.</p> <p>Section 8.2 covers the standard operating procedures.</p> <p>Do you agree that the proposed operating procedures are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant –</p> <ul style="list-style-type: none"> The level of documentation and compliance records required for the Acceptable Solution is particularly onerous for a very small supply run by a farmer. Requiring detailed procedures is likely to have adverse impacts because of the regulatory burden. Taumata Arowai should consider providing SOPs to be used for the typical units and systems that comply with the Acceptable Solution, and only requiring a level of detail reflective of the complexity of the system. 	<p>Amend section 8.2 to read:</p> <ul style="list-style-type: none"> The operation and maintenance manual must contain standard operating procedures appropriate for the level of complexity of the system for the following (but not limited to): <ul style="list-style-type: none"> restarting the treatment systems regular inspections routine maintenance replacing equipment operating individual treatment system units, flow restrictors, pumps and valves calibrating of relevant sensors and analysers.
<p>Section 8 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the operation and maintenance for the installation, maintenance and testing of all household or building treatment systems installed under this drinking water Acceptable Solution.</p> <p>Section 8.3 covers the inspection procedures.</p> <p>Do you agree that the proposed inspection procedures are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <p>Some of the inspection procedures at each household listed are impractical:</p> <ul style="list-style-type: none"> The headworks inspection requirements should be simplified to just check that they are in good condition. Not all rural water supplies will have a central treatment plant Once cartridge filters are installed, it isn't possible to check the pore size of the filter. Once a UV system is installed, how would a water supplier check that it is installed correctly? The experts in UV installation are the UV suppliers, not the water supplier. 	<p>Amend the first two bullet point under "Inspection procedures should ensure that" to read:</p> <ul style="list-style-type: none"> headworks including bore heads and abstraction infrastructure are secure, watertight, in good condition <u>any central treatment headworks processes are operating effectively</u> <p>Amend the last two bullet points in the inspection procedures for households and buildings to read:</p> <ul style="list-style-type: none"> cartridge filter systems have the correct cartridge types installed and are operating effectively <u>had their cartridge filters replaced within the last six months (or at the replacement frequency recommended by the manufacturer)</u> UV systems are installed correctly and are operating effectively according to the manufacturers requirements <u>have had their UV lamp(s) replaced within the last 12 months (or at the replacement frequency recommended by the manufacturer)</u> <u>UVI sensors or UV dose meters have been replaced or calibrated within the last two years</u> <p><u>Air gaps on storage tanks are in place</u></p>

Questions	Possible response	Recommendation			
<p>Section 8 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the operation and maintenance for the installation, maintenance and testing of all household or building treatment systems installed under this drinking water Acceptable Solution.</p> <p>Section 8.4 covers maintenance, inspection, and calibration.</p> <p>Do you agree with the proposed maintenance, inspection, and calibration requirements?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> Maintenance visits should be six monthly if alarms are displayed at the household. There is a requirement for the treatment plant to shut down on low UVI and if the cartridge filter blinds then it will prevent water flowing through it. In either case the householder will ring the supplier or plumber to fix it. This would mean cartridge filter and UV lamp replacements could be done at the same time as the maintenance visits, which would be more efficient and cost effective. What is the purpose of continuously monitoring total organic carbon? There is no MAV for total organic carbon, it has no effect on cartridge filtration or UV units, and as there is no chlorination there will be no disinfection by-products. Recent research has shown that UV units are effective for turbidity up to 5 NTU. 	<p>Amend the start of section 8.4 to read:</p> <ul style="list-style-type: none"> The minimum frequency of operation and maintenance visits by the water supplier to houses and buildings with end point treatment systems is: <ul style="list-style-type: none"> three monthly if alarms from the treatment system are only displayed at the household Six-monthly if alarms from the treatment system are <u>displayed locally or</u> notified to the supplier remotely Twelve-monthly if the system can: <ul style="list-style-type: none"> monitor basic water quality parameters (turbidity and total organic carbon) alert the premise owner and water supplier when maintenance is required (in accordance with manufacturer's requirements or when water quality exceeds parameters (e.g. treated water <u>turbidity >5 NTU >4</u>)) automatically record when filters and UV lamps have been replaced. 			
<p>Section 9 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the monitoring and testing required under this drinking water Acceptable Solution.</p> <p>Do you agree with the proposed household monitoring requirements?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> It would be simpler if the two monitoring tables (supply monitoring requirements and household monitoring requirements) were combined into a single table The E. coli limit should be as per the Drinking Water Standards 	<p>Amend the household monitoring requirements to read:</p> <table border="1" data-bbox="1834 892 2769 1060"> <tr> <td data-bbox="1834 892 1923 1060">RA7</td> <td data-bbox="1923 892 2457 1060">One sample for E. coli is to be taken from a household post-treatment every 3 months. Household testing must rotate so that all households in the supply are eventually tested.</td> <td data-bbox="2457 892 2769 1060">Not present <u>Less than 1 in 100 mL of sample</u></td> </tr> </table>	RA7	One sample for E. coli is to be taken from a household post-treatment every 3 months. Household testing must rotate so that all households in the supply are eventually tested.	Not present <u>Less than 1 in 100 mL of sample</u>
RA7	One sample for E. coli is to be taken from a household post-treatment every 3 months. Household testing must rotate so that all households in the supply are eventually tested.	Not present <u>Less than 1 in 100 mL of sample</u>			

Questions	Possible response	Recommendation									
<p>Section 9 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the monitoring and testing required under this drinking water Acceptable Solution.</p> <p>Do you agree with the proposed supply monitoring requirements?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> RA2: When a sample is taken, the water temperature will generally be significantly higher than 6 degrees Celsius and it is not practical to instantly drop the water temperature to below 6 degrees Celsius. It should be made clear that it is the container that the sample is being transported in that is to be less than 6 degrees Celsius. RA3: Only determinands that affect health or the treatment process should be monitored. Chlorine and ozone are not used in the treatment process, so there is no need to measure bromide or total organic carbon. RA4: Daily or continuous monitoring of raw water turbidity, pH and conductivity would be onerous for rural agricultural water supplies. Some sources are difficult to access. As there is no chlorination, there is no need to monitor pH. It is unclear what purpose monitoring conductivity would serve, as it does not affect the treatment process and there is no requirement to look for trends in raw water quality data. It is recommended that this is reduced to only monitoring turbidity after any central treatment process monthly. 	<p>Amend the supply monitoring requirements RA2, RA3 and RA4 to read:</p> <table border="1" data-bbox="1834 247 2772 1037"> <tr> <td data-bbox="1834 247 1923 380">RA2</td> <td data-bbox="1932 247 2614 380">All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>in a container with an internal</u> at a temperature of less than 6 degrees Celsius.</td> <td data-bbox="2623 247 2772 380">N/A</td> </tr> <tr> <td data-bbox="1834 386 1923 869">RA3</td> <td data-bbox="1932 386 2614 869">Water sources must be monitored for the following determinands once when this drinking water Acceptable Solution is adopted and then every 3 years. <ul style="list-style-type: none"> • Arsenic • Boron • Calcium • Magnesium • <u>Hardness</u> • Nitrate • Potassium • Bromide • Iron • Manganese • Total organic carbon </td> <td data-bbox="2623 386 2772 869">Must not exceed MAV</td> </tr> <tr> <td data-bbox="1834 875 1923 1037">RA4</td> <td data-bbox="1932 875 2614 1037">Analysis of the turbidity, pH and conductivity of the raw water, <u>or the turbidity after any centralised treatment process, as soon as practicable downstream of the headworks</u> must be undertaken daily or continuously <u>monthly</u>.</td> <td data-bbox="2623 875 2772 1037">N/A</td> </tr> </table>	RA2	All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>in a container with an internal</u> at a temperature of less than 6 degrees Celsius.	N/A	RA3	Water sources must be monitored for the following determinands once when this drinking water Acceptable Solution is adopted and then every 3 years. <ul style="list-style-type: none"> • Arsenic • Boron • Calcium • Magnesium • <u>Hardness</u> • Nitrate • Potassium • Bromide • Iron • Manganese • Total organic carbon 	Must not exceed MAV	RA4	Analysis of the turbidity, pH and conductivity of the raw water, <u>or the turbidity after any centralised treatment process, as soon as practicable downstream of the headworks</u> must be undertaken daily or continuously <u>monthly</u> .	N/A
RA2	All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>in a container with an internal</u> at a temperature of less than 6 degrees Celsius.	N/A									
RA3	Water sources must be monitored for the following determinands once when this drinking water Acceptable Solution is adopted and then every 3 years. <ul style="list-style-type: none"> • Arsenic • Boron • Calcium • Magnesium • <u>Hardness</u> • Nitrate • Potassium • Bromide • Iron • Manganese • Total organic carbon 	Must not exceed MAV									
RA4	Analysis of the turbidity, pH and conductivity of the raw water, <u>or the turbidity after any centralised treatment process, as soon as practicable downstream of the headworks</u> must be undertaken daily or continuously <u>monthly</u> .	N/A									
<p>Section 10 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the incident or emergency response plan the water supplier must develop.</p> <p>Do you agree that the incident and emergency response plan requirements are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> Acceptable Solutions need to consider the scale and complexity of supply. It is unreasonable to expect such small water supplies, often run by farmers, to prepare complex incident and emergency management plan. In the event of an emergency or incident, they will simply call the person that maintains their water supply to come and fix it, or order a tanker of water to be delivered. Rather than every one of the thousands of private suppliers around the country preparing bespoke plans and communications, it would be far more efficient and effective for Taumata Arowai to provide a simple, standard template for water suppliers to use. Key contacts for maintenance and water tankers are already included in the O&M manual requirements. 	<p>Replace this section entirely to a reference to a page on Taumata Arowai's website which provides the following documents for water suppliers to use:</p> <ul style="list-style-type: none"> • Boil water notices and do not drink notices • Simple template procedure for how to advise consumers of a problem with the water supply • Procedure to follow if a test result exceeds the MAV 									

Questions	Possible response	Recommendation
<p>Section 11 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies Solution covers the training and awareness obligations of the water supplier.</p> <p>Do you agree that the training and awareness obligations of the water supplier are appropriate?</p>	<p>1. Yes 2. No 3. Don't know</p> <p>Add a comment if relevant - Taumata Arowai needs to provide further context of its expectations in terms of training and competency validation. Suppliers each exist in the nuanced context of their communities with specific knowledge and experience of their own systems. When speaking with private water suppliers in Hawke's Bay, many stated that the draft Rules and Acceptable Solutions have been drafted without considering the historical knowledge, skills and experience and cultural customs which had been passed down through generations and that the Rules and Acceptable Solutions will be 'imposing' on those existing bodies of knowledge. How would this training reflect tikanga and supplier intergenerational knowledge of source and system?</p>	<p>The requirements for training and awareness should be amended to reflect tikanga and intergenerational knowledge about the water supply.</p>
<p>Section 12 of the proposed Drinking Water Acceptable Solution for Rural Agricultural Water Supplies covers the auditing obligations of the water supplier.</p> <p>Do you agree that the auditing obligations of the water supplier are appropriate?</p>	<p>1. Yes 2. Partially 2. No 3. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> The audit checklist should be greatly simplified. It is unreasonable to expect such rural agricultural water supplies to undertake such extensive audits. The audit checklist is far too complex and onerous. How would anyone other than the water treatment plant installer know whether the treatment system had been designed, configured and installed according to the acceptable solution requirements? We agree with most audits being done internally, with external audits only as required. It is unclear who would take external audits on behalf of Taumata Arowai. Would this be Councils or another third party? Our view is that this should not be Councils. 	<p>Simplify the audit checklist so that it is practical and can be used by farmers. Suggested checklist:</p> <ul style="list-style-type: none"> Does the operations and maintenance manual comply with the acceptable solution requirements? Are there records showing that the people operating and maintaining the water supply have been trained in the use of the operations and maintenance manual in the last three years? Are there records confirming that the cartridge filters, UV units and UVI sensors been maintained and calibrated at the required frequencies? Have all testable backflow prevention devices been tested and all air gaps been checked in the last year? Has the required water testing has been undertaken? Did any of the values exceed the maximum acceptable values in the drinking water standards? If yes, was Taumata Arowai notified and was its response procedure followed?

If you want to provide any additional feedback, please provide this here:

Additional feedback:

- Please refer to the main body of the submission – Appendix 1 Hawke's Bay Private Drinking Water Supply Project.
- It is confusing having different section numbering for this acceptable solution compared with the acceptable solutions for roof water and spring and bore water supplies. It is recommended that the heading for section 5 (rural agricultural water supplies) is changed to a lower order heading so that section numbering is consistent across all acceptable solutions. This would make it easier for people working with multiple acceptable solutions.

C- Drinking Water Acceptable Solution for Spring and Bore Drinking Water Supplies



Tell us a bit about yourself

Question	Possible responses
Full name	Toni Goodlass
<p>Email address - this will only be used if we need to communicate with you about your submission, or if you indicate below that you would like to be contacted in the future in relation to drinking water issues</p> <p>Note you are not required to provide your email address</p>	<p>toni.goodlass@napier.govt.nz</p>
<p>Are you providing feedback:</p>	<p>Select option</p> <p>3. As an individual</p> <p>4. On behalf of an organisation or group</p> <p style="margin-left: 40px;">a. organisation or group name: Napier City Council, Hastings District Council, Wairoa District Council and Central Hawke’s Bay District Council</p> <p style="margin-left: 40px;">b. position/ title within the organisation: Regional Programme Director – Hawke’s Bay Five Councils</p>



Question	Possible responses
<p>Where do you live/reside?</p> <p>If your organisation has presence in more than one region – select ‘National’</p>	<p>Select option</p> <p>19. Outside New Zealand</p> <p>20. National</p> <p>21. Northland / Te Tai Tokerau</p> <p>22. Auckland / Tāmaki makau rau</p> <p>23. Waikato</p> <p>24. Bay of Plenty / Te Moana-a-Toi</p> <p>25. Gisborne / Te Tai Rāwhiti</p> <p>26. Hawke’s Bay / Te Matau-a-Māui</p> <p>27. Taranaki</p> <p>28. Manawatū – Whanganui</p> <p>29. Wellington / Te Whanganui-a-Tara</p> <p>30. Tasman / Te Tai o Aorere</p> <p>31. Nelson / Whakatū</p> <p>32. Marlborough / Te Taihu o tewaka</p> <p>33. West Coast / Te Tai Poutini</p> <p>34. Canterbury / Waitaha</p> <p>35. Otago / Ōtākou</p> <p>36. Southland / Murihiku</p>
<p>Which of the below options best describes you in the context of this consultation?</p>	<p>Select option</p> <p>15. Individual water drinker / consumer</p> <p>16. Registered drinking water supplier (excl marae) – either under the Health Act 1956 or the Water Services Act 2021</p> <p>17. Unregistered drinking water supplier (excl marae)</p> <p>18. Other commercial user of water</p> <p>19. Stakeholder representative / industry body</p> <p>20. Iwi representative organisation</p> <p>21. Marae</p> <p>22. Health professional</p> <p>23. Laboratory</p> <p>24. Local authority or Council Controlled Organisation</p> <p>25. Regional Council</p> <p>26. Central government agency</p> <p>27. Local interest group</p> <p>28. Other</p>

Question	Possible responses
<p>If you selected 'Registered water supplier (excl Marae)' – are you</p> <p>If you have multiple supplies, please select your largest supply type.</p> <p>For a definition of each supply type refer to this document – Supply type.</p>	<p>Select option</p> <p>10. On-demand Networked Drinking Water Supplies – < 50 (Very Small Supplies).</p> <p>11. On-demand Networked Drinking Water Supplies – 50 – 500 (Small Supplies).</p> <p>12. On-demand Networked Drinking Water Supplies – >500 (Large Supplies).</p> <p>13. On-demand Networked Drinking Water Supplies – Varying Population Size Supplies.</p> <p>14. Trickle Feed Water Supplies.</p> <p>15. Self-supplied Building Drinking Water Supplies.</p> <p>16. Water Carrier Services.</p> <p>17. Planned Event Temporary Drinking Water Supplies.</p> <p>18. Community Drinking Water Stations/Water Carrier Supplies –</p>
<p>If you selected 'Unregistered water supplier (excl Marae)' – are you</p>	<p>Select option</p> <p>10. School</p> <p>11. Café</p> <p>12. Camping grounds</p> <p>13. Recreational facilities</p> <p>14. Community halls and other local community facilities</p> <p>15. Water supplied under an easement</p> <p>16. Small commercial water supply networks</p> <p>17. rural drinking water networks (also providing irrigation and water for livestock)</p> <p>18. Other</p>
<p>If you selected 'Other commercial user of water' – are you</p>	<p>Specify your commercial activity (example 'food manufacturer' 'bottled water supplier' etc)</p>
<p>If you selected 'Stakeholder representative / industry body'</p>	<p>Specify your area of interest or industry</p>

Question	Possible responses
If you selected 'Marae' – are you	Select option 3. Registered water supplier – either under the Health Act 1956 or the Water Services Act 2021 4. Unregistered water supplier
If you selected 'Health professional' – are you	Select option 6. District Health Board 7. Māori health provider 8. Private health provider 9. residential care provider 10. Other
If you selected 'Laboratory' – are you	Select option 5. IANZ accredited drinking water laboratory 6. IANZ - Level 2 Recognised Laboratory (transitional) 7. Other IANZ accredited laboratory (non-drinking water) 8. Other – non IANZ accredited laboratory
If you selected 'Local interest group'	Specify your interest
If you would like to be contacted in the future by Taumata Arowai in relation to drinking water issues, please select the option.	Select an option 3. Yes, I would like to be contacted in the future by Taumata Arowai in relation to drinking water issues on the email provided above. 4. No, I do not want to be contacted in the future by Taumata Arowai in relation to drinking water issues

Publishing submissions and Official Information Act 1982 requests

Publishing your submission

We intend to proactively publish the submissions made as part of this consultation on our website, but only if we are given permission to do so.



We may publish a summary of submissions. The summary will be aggregated to a level so that individual submission cannot be identified.

Official Information Act requests

Your submission may be subject to requests made under the Official Information Act 1982 (even if it hasn't been published). We must make your submission available in response to such a request, unless we have a good reason or other administrative grounds for withholding it.

Question	Possible response
<p>Do you give us permission to proactively publish your submission?</p>	<p>(Required response)</p> <p>Select an option:</p> <ul style="list-style-type: none"> 4. Yes. You may publish this submission, including my personal details (name, organisation and email address) 5. Yes, but without details that identify me. You may publish this submission but only after removing my personal details (name, organisation, and email address) 6. No. Do not publish this submission
<p>Official Information Act requests</p> <p>Your submission may be subject to requests made under the Official Information Act (OIA), even if it hasn't been published. Your preference about the release of your submission, including your contact details, will be relevant to our decision on each request. We may be legally required to make your submission available, even if you indicate that you would prefer us not to release it</p>	<p>(Required response)</p> <p>Select an option:</p> <ul style="list-style-type: none"> 5. Yes. You may make my submission available in response to requests made under the OIA, including my personal details (name, organisation, email) 6. Yes, but without details that identify me. I would prefer that you make my submission available with my personal details removed or redacted 7. Yes, but without the information indicated below 8. No, I would prefer that you do not make my submission available in response to requests made under the OIA



Question	Possible response
<p>If you have asked us to withhold your submission, your personal details, or any other information in your submission, please outline the reasons why you would prefer that information not be made available</p> <p>Reasons for withholding might include that it's commercially sensitive or it's personal information.</p> <p>Any decision Taumata Arowai makes to withhold information requested under the OIA can be reviewed by the Ombudsman, who may instruct Taumata Arowai to release the withheld information.</p>	<p>Please specify what information in your submission you believe should be withheld, and why</p>

Summary of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies

About bore and spring water supplies

A spring is groundwater that emerges at the ground's surface.

A bore is a piped (cased) hole constructed to access groundwater for supply purposes. Bores will be at varying depths. Depending on the quantity of water abstracted, some bores will require resource consents.

Both a spring and bore require infrastructure to enable the water to be accessed, treated, and supplied to consumers as drinking water.

A number of marae, papakāinga, small communities, and camping grounds use springs and bores and reticulate the drinking water to multiple properties.

A number of these supplies exist in New Zealand, but numbers are uncertain at this stage.

About acceptable solutions

Section 50 of the Water Services Act 2021 (the Act) allows Taumata Arowai to prepare acceptable solutions for use by water suppliers to comply with the legislative requirements of the Act. Under s. 50 of the Act, a water supplier who complies with an acceptable solution that is appropriate to their water supply, must be treated as having complied with the legislative requirements applicable to that acceptable solution.

An acceptable solution is not the only means of complying with legislative requirements for a particular water supply.

The concept of acceptable solutions did not exist under the Health Act 1956.

An acceptable solution specifies requirements and obligations that must be followed. These cover the design, configuration, installation, operation, maintenance, testing, monitoring, record keeping, emergency management and auditing that is required.

Water suppliers who adopt an acceptable solution are not required to prepare and submit a drinking water safety plan, including a source water risk management plan. However, all water suppliers adopting an acceptable solution are still responsible for identifying and managing risks to their water supply and consumers. As such, water suppliers are encouraged to implement the broad risk management approach that informs the development of a drinking water safety plan and source water risk management plan.

Proposed Acceptable Solution for Spring and Bore Drinking Water Supplies

This acceptable solution provides owners and operators of water supplies that source the water from a spring or bore with an approved solution for providing drinking water to consumers that achieves compliance with parts of the Act, the New Zealand Drinking Water Standards (the Standards) and the Drinking Water Quality Assurance Rules (the Rules) prepared by Taumata Arowai.

Note Taumata Arowai is currently consulting on Standards and Rules.

This proposed Acceptable Solution for Spring and Bore Drinking Water Supplies is designed for community water supplies where good quality spring or bore water is abstracted, treated and reticulated to multiple dwellings and buildings. The proposed acceptable solution does not require the use of point of entry household systems to provide treated drinking water.

The proposed Acceptable Solution for Spring and Bore Drinking Water Supplies can only be used where the entire population served is less than 500 people, and an adequate quantity of water is provided to all connections at peak demand.

This proposed Acceptable Solution for Spring and Bore Drinking Water Supplies sets out the testing the supplier must undertake on the source water before adopting the acceptable solution. It also sets out the bore or spring requirements, specifications for treatment systems and requirements for drinking water distribution systems.

Water suppliers considering using this acceptable solution must meet all the criteria in the acceptable solution.

The development process of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies included external technical input and review by reference groups established by Taumata Arowai to provide feedback into a range of documents that are also part of a concurrent consultation process. The reference groups included representatives from small water suppliers, Māori communities and local authorities water suppliers.



Questions	Possible response	Recommendation
<p>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?</p>	<p>5. Yes 6. Partially 7. No 8. Don't know</p> <p>Add a comment if relevant - Acceptable Solutions need to consider the scale and complexity of supply. The Acceptable Solution seems onerous and complex, with a long list of requirements to meet. In some cases this Acceptable Solution will be used by two neighbours sharing a bore and it needs to be simple enough to accommodate this situation.</p> <p>It is the Councils' view that the proposed Acceptable Solutions do not reflect the original intent to provide solutions that are workable for small suppliers and are cost effective and easy to comply with.</p> <p>As drafted, they are not workable, easy to comply with and will be cost and resource prohibitive for many private water supplies.</p>	<p>We refer the reader to the main body of our submission where we recommend that the Rules and Acceptable Solutions are revised to reflect what is currently attainable and gradually increase the requirements to allow private water suppliers (who will be the main users of the Acceptable Solutions) to “grow” into the raised requirements.</p> <p>The advantage of this approach is that Taumata Arowai can work with the sector, in particular the private suppliers, over time to increase the understanding and the responsibilities and requirements of being a water supplier, and increase their competency as water suppliers.</p> <p>Taking private water suppliers on a journey of engagement, relationship building and raising competency, in combination with financial support for the investment required, is likely to greatly increase compliance and drinking water safety in the long term.</p> <p>This also enables the required investment in staff, infrastructure, processes and documentation to be spread over a more realistic period.</p> <p>We recommend that the Acceptable Solution should be simplified to be more pragmatic, cost-effective and enable compliance.</p> <p>We also suggest that the population thresholds are re-considered as a potential mechanism to be more pragmatic with implementation and in consideration of risks. E.g. what if <25 is simply require the addition of end point treatment on kitchen tap (this could then apply in building for self-supply for consistency if desired), then consider simplified acceptable solutions for 25-100 very small supply, then potentially have small supply's range from 100-500 and consider if acceptable solutions still apply, and if they do then have additional barriers over the very small supply requirements.</p>
<p>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?</p>	<p>1. Yes 2. No 3. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> The acceptable solution should provide for both options: a centralised treatment system and end-point treatment systems. There is a papakainga being built in the rural area of Hastings District which is using end-point treatment for a bore supply, as directed by their building consent. If an end-point treatment acceptable solution is not made available to them, they will need to install a centralised water treatment plant, which would be additional cost and serve no purpose. It should be up to the water supplier to decide whether end-point treatment or centralised treatment works best for them. It is therefore recommended that the acceptable solution is made more inclusive by allowing both centralised and end-point treatment systems. 	<p>The acceptable solution should provide for both options: a centralised treatment system and end-point treatment systems.</p>

Questions	Possible response	Recommendation
<p>Section 4 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies sets the criteria that must be met for the adoption of the proposed acceptable solution:</p> <ul style="list-style-type: none"> • Water abstracted from a bore or spring is treated, then supplied to a distribution system. • Water is provided to a consumers point of supply (toby). • The population served by the entire drinking water supply is less than 500 people. • All water provided is treated by a treatment system which meets the requirements set out in this drinking water acceptable solution. • An adequate quantity of drinking water is provided to all connections at peak demand. <p>Do you agree with these proposed criteria?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment to explain your answer -</p> <ul style="list-style-type: none"> • Provision should be made for restricted supplies, rather than limiting this acceptable solution to on-demand supplies. • A definition for toby is needed as it is a colloquial term. 	<p>Amend the criteria to read:</p> <ul style="list-style-type: none"> • Water abstracted from a bore or spring is treated, then supplied to a distribution system. • Water is provided to a consumers point of supply (toby). • The population served by the entire drinking water supply is less than 500 people. • All water provided is treated by a treatment system which meets the requirements set out in this drinking water acceptable solution. • An adequate quantity of drinking water is provided to all connections at peak demand. <p>Add a definition for toby in the definitions section. Suggested definition: The water shut-off valve, generally located near the property boundary, that sits between the main water supply pipe and the property's private water pipe.</p>

Section 6.1 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the requirements before the drinking water acceptable solution can be adopted by a supplier.

Do you agree that the proposed requirements before the drinking water acceptable solution can be adopted by a supplier are appropriate?

- 1. ~~Yes~~
- 2. ~~Partially~~
- 3. No
- 4. ~~Don't know~~

Add a comment to explain your answer -

- Requiring Very Small supplies (and many of the Small supplies too) to chlorinate will introduce Health & Safety and environmental risks (plus potential public health risks from overdosing or disinfection by-products) which potentially outweigh the public health risk being managed by requiring residual disinfection.
- The Rules and Acceptable Solutions are inconsistent in their requirements for chlorination. A Very Small supplier with a groundwater source does not need to chlorinate under the Rules but would need to chlorinate if using the Acceptable Solution for Springs and Bore Water Supplies. Chlorination is required for self-supplying buildings under the Rules, despite having no network.
- The introductory paragraph should refer to testing the source water for suitability for chlorination, as well as cartridge filtration and UV disinfection (if chlorination is to be retained in the acceptable solution).
- The source water requirements are overly restrictive. It does not make sense to require water suppliers in areas with groundwater that is naturally hard or high in iron or manganese, to prepare a water safety plan and use the drinking water quality assurance rules. A more inclusive and pragmatic approach would be to require softening, iron or manganese removal (e.g. by ion exchange) upstream of the UV unit, if source water testing found that levels were high.
- Iron and manganese forming a precipitate after chlorination is not an issue for the treatment plant, but an aesthetic issue in the treated water. This is not as important as affecting the performance of the UV unit, which is a safety issue.
- High alkalinity does not form a scale on UV lamps, but hardness does.
- Requiring a turbidity of less than 1 NTU is overly strict and inconsistent with section 8 of this acceptable solution, the rural agricultural acceptable solution and the drinking water quality assurance rules. If the source water was consistently less than 1 NTU then cartridge filtration would not be required.
- The requirement for consistent source water quality (pH and turbidity) belongs in this section rather than section 6.2, if it is to be retained at all. The requirement turbidity isn't warranted given that there is a treatment plant to treat the turbidity. If the cartridge filter blinds, the water will stop flowing and the water supplier will be quickly alerted to this by consumers and can change the filter. There is no mention of the need for pH testing of source water in the table.
- To be consistent with the drinking water standards and the definitions section, the term determinand should be used rather than parameter.

- Remove the requirement to chlorinate (preferred solution).
- If the requirement to chlorinate is retained, amend the introductory paragraph to read: "Before use of this drinking water acceptable solution ~~can be considered~~, the water supplier must test the source water to determine suitability for cartridge filtration, ~~and UV disinfection and chlorination....~~ If the testing indicates that the source water is unsuitable for cartridge filtration, UV disinfection and/or chlorination, ~~the drinking water acceptable solution cannot be used~~ additional treatment step(s) are required.

Amend the source water testing table as follows:

Parameter Determinand	Limit Requirement	Minimum number of samples
Iron	<ul style="list-style-type: none"> • Must not be <u>If it is at a level which would compromise the effectiveness of UV disinfection, an iron removal process must be included in the treatment plant upstream of the UV unit</u> • Must not be <u>If it is at a level after filtration that will form a precipitate when oxidised by chlorine, an iron removal process is recommended to be included in the treatment plant upstream of the UV unit</u> 	3
Manganese	<ul style="list-style-type: none"> • Must not be <u>If it is at a level which would compromise the effectiveness of UV disinfection, a manganese removal process must be included in the treatment plant upstream of the UV unit</u> • Must not be <u>If it is at a level after filtration that will form a precipitate when oxidised by chlorine, a manganese removal process is recommended to be included in the treatment plant upstream of the UV unit</u> 	3
Alkalinity Hardness	<ul style="list-style-type: none"> • Must not <u>If it is at a level which would form a scale that reduces the effectiveness of UV disinfection, a softening process must be included in the treatment plant upstream of the UV unit.</u> 	3
UV transmittance	<ul style="list-style-type: none"> • Must meet the requirements of the UV manufacturer 	3

Questions	Possible response	Recommendation		
		Turbidity	<ul style="list-style-type: none"> Must not exceed 1 <u>20</u> NTU at any time 	5
		pH	<ul style="list-style-type: none"> <u>Recommended to be between 6.5 – 8</u> 	3
<p>Section 6.2 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the requirements the bore or spring source for the drinking water supply must meet before the drinking water acceptable solution can be adopted by a supplier.</p> <p>Do you agree that the proposed requirements before the Acceptable Solution can be adopted by a supplier are appropriate?</p>	<p>0. Yes 1. Partially 2. No 3. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> It may not be practical to fence within 5 m of the headworks, due to steep topography or proximity to a neighbouring property to an existing bore. In places where there are no farm animals, a fence should not be required. Preventing water suppliers from using this acceptable solution if their bore is in limestone, and to instead prepare a water safety plan and use the drinking water quality assurance rules, is overly strict. It is estimated that 77% (696) private water supplies in Hastings District would potentially be prevented from using this acceptable solution if this requirement is retained. A more inclusive and pragmatic approach would be to require treatment to reduce hardness. This is already covered in the comments on section 6.1. The requirement to minimise contamination by surface water is covered twice. Sealed tanks containing wastewater (e.g. septic tanks, wastewater treatment plants) do not pose a risk to the bore or spring; this should instead refer to wastewater disposal fields. The separation distance should be consistent with the National Environmental Standard for Protection of Sources of Human Drinking Water. How would a private water supplier know whether the aquifer was at risk of contamination from sewage exfiltration or pump station overflows? This is best advised by the regional council. 	<p>5.</p> <p>Amend the requirements to read:</p> <ul style="list-style-type: none"> Springs and bores must be protected by headworks which minimise the risk of contamination from nearby surface water. If farm animals are present, they must be excluded (e.g. with a fence) from within 5 metres of the headworks (if topography and property boundaries permit) and the headworks must be constructed so that water cannot flow towards the bore casing or pond around a spring Springs and bores must not provide geothermal water (which is not suitable for drinking) or groundwater from limestone (karst) terrain. Springs and bores must not provide water of variable quality, particularly with respect to pH and turbidity. Springs and bores must not be located within 50 <u>X</u> metres of: <ul style="list-style-type: none"> A sewage disposal field or effluent discharge (e.g. a septic tank or other wastewater treatment system) An underground <u>chemical</u> storage tank (such as a petrol station) A waste pond A landfill An offal pit Areas where pesticides or animal effluent is applied to land <p>4. Urban aquifers <u>which the regional council has advised are contaminated with, or at risk of contamination with, sewage from exfiltration and/or pump station overflows.</u></p>		

Questions	Possible response	Recommendation
<p>Section 6.3 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the treatment system requirements must meet before the drinking water acceptable solution can be adopted by a supplier.</p> <p>Do you agree that the proposed requirements the treatment system must meet before the drinking water acceptable solution can be adopted by a supplier are appropriate?</p>	<ul style="list-style-type: none"> ● Yes ● Partially ● No ● Don't know <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> ● Chlorination is not warranted for very small water supplies. The health and safety risks with storing and handling chlorine, and the additional costs for these very small supplies, outweigh the benefits of maintaining a chlorine residual in what is normally a very small network. Groundwater tends to have higher pH and chlorination with hypochlorite will increase the pH further, potentially above the guideline value. If the requirement to chlorinate is to be retained, it should not be required for very small supplies (less than 50 people) to be consistent with the drinking water quality assurance rules. ● Only high strength hypochlorite needs to be used within three months (13%). If a supplier makes up hypochlorite on site, the salt used can be stored for up to two years. ● The requirement for a chlorine contact time of 30 minutes will mean that many water suppliers using springs and bores will need to install a treated water storage tank and booster pump, as most supplies currently pump directly from the bore through the treatment plant to the customers. This adds extra cost with little benefit. ● Backflow prevention devices will create pressure loss issues for some water supplies (e.g. farms with small diameter pipes) and will limit the flow. It may also be difficult to install backflow prevention devices on underground pipes where the pipe location is not known. ● The section on backflow prevention should be consistent with Clause G12 Water Supplies of the Building Code, both in terms of hazards and backflow prevention devices should be referred to for characterising backflow hazards. Air gaps are permitted backflow prevention devices for high hazard activities, and this should be the same in the acceptable solution, for consistency. Many rural water supplies have a storage tank at the boundary and maintaining an air gap would be an easier option than installing a backflow prevention device. 	<p>Remove the requirement to chlorinate (preferred solution).</p> <p>If the requirement to chlorinate is retained, amend the following bullet points in treatment requirements to read:</p> <ul style="list-style-type: none"> ● A chlorination system must be installed that maintains a chlorine residual of at least 0.5 mg/L in water leaving the treatment plant <u>for supplies that have a normally resident population of 50 people or more.</u> ● If sodium hypochlorite is used for chlorination, it must be used within three months of manufacture. Chemicals used for chlorination must be used within the manufacturer's recommended timeframe. ● Chlorine residual must be measured before reaching the first customer, after a contact time of at least 30 minutes at a tap in the network. <p>Amend the backflow section to read:</p> <p>The distribution network shall be provided with:</p> <ul style="list-style-type: none"> ● Testable backflow prevention devices <u>or air gaps</u> on all high-risk connections, <u>preferably at the point of supply (including but not limited to):</u> <ul style="list-style-type: none"> ○ Horticultural and commercial gardens ○ Agricultural connections ○ Food preparation facilities ○ Wastewater facilities ○ Industrial and trade waste customers ○ Pest control businesses. ● Non-testable backflow prevention devices or air gaps on all medium risk connections, <u>preferably at the point of supply</u> ● Testable backflow prevention devices must be tested annually, <u>and air gaps must be checked annually,</u> and the water supplier must retain testing records. ● <u>Refer to Clause G12 Water Supplies of the Building Code for backflow hazard rating and backflow prevention devices.</u>

Questions	Possible response	Recommendation
<p>Section 7 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the operation and maintenance of the bore or spring drinking water supply, including the headworks and the treatment system.</p> <p>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?</p>	<ul style="list-style-type: none"> • Yes • Partially • No • Don't know <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> • The requirements for the operations and maintenance manual should be simplified. A detailed process and instrumentation diagram is inappropriate for small water supplies. A schematic of the water supply would be more helpful. • Some of the inspection procedures listed are impractical: <ul style="list-style-type: none"> ○ Once cartridge filters are installed, it isn't possible to check the pore size of the filter. ○ Once a UV system is installed, how would a water supplier check that it is installed correctly? The experts in UV installation are the UV suppliers, not the water supplier. 	<p>Amend the second bullet point of the operations and maintenance manual (section 7.1) to read:</p> <ul style="list-style-type: none"> • process and instrumentation diagrams for all the components in the treatment system, including all valves, pumps and bypasses <u>a schematic of the system including all valves, pumps and bypasses.</u> <p>Amend the inspection procedures to read:</p> <ul style="list-style-type: none"> • Cartridge filter systems have the correct cartridge filter types installed • UV systems are installed correctly and are operating according to the manufacturers requirements

Questions	Possible response	Recommendation																		
<p>Section 8 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the monitoring and testing the water supplier must undertake.</p> <p>Do you agree with the source water monitoring requirements?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> SB1 in the table of source water quality monitoring requirements requires all testing to be done by a laboratory which is IANZ accredited and on Taumata Arowai's register. Provision should be made for water suppliers to test for determinands using instruments (online or hand held) and test strips. It is unrealistic to expect small water suppliers to take water samples to a lab every day, and labs are unlikely to have the capacity to analyse so many samples. SB2 requires E. coli samples to be transported to a lab within 24 hours. No microbiological monitoring of source water is required, so this rule should move to the treated water table (or the two tables should be combined). When a sample is taken, the water temperature will generally be significantly higher than 6 degrees Celsius and it is not practical to instantly drop the water temperature to below 6 degrees Celsius. It should be made clear that it is the container that the sample is being transported in that is to be less than 6 degrees Celsius. Daily or continuous monitoring of source water turbidity is not warranted, as differential pressure is measured across the cartridge filters and it will quickly be apparent if the cartridge filters have blinded due to high turbidity as there will be no treated water. Monitoring treated water turbidity is sufficient. The chemical determinands to be measured should be limited to those that pose a health risk or could impact on the performance of the treatment plant. Bromide is only an issue if ozone is used for treatment, which is not the case here. 	<ul style="list-style-type: none"> Combine the two monitoring requirements tables into a single table to avoid confusion and to simplify this section. <p>Amend the source water monitoring requirements table to read:</p> <table border="1" data-bbox="1798 386 2736 1514"> <thead> <tr> <th>Rule Number</th> <th>Requirements</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>SB1</td> <td>All testing is to be undertaken by a laboratory accredited by International Accreditation New Zealand (IANZ) and listed on the Taumata Arowai register of laboratories, <u>except for FAC, pH, turbidity and UV transmittance which may be measured using hand held or online devices or test strips.</u></td> <td>N/A</td> </tr> <tr> <td>SB2</td> <td>All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>in a container with an internal at a</u> temperature of less than 6 degrees Celsius.</td> <td>N/A</td> </tr> <tr> <td>SB3</td> <td>Source water turbidity must be measured after the point of abstraction and before treatment either continuously or daily.</td> <td><20 NTU at all times</td> </tr> <tr> <td>SB4</td> <td>Source water must be tested for the following determinands once when this drinking water acceptable solution is adopted and every three years thereafter. <ul style="list-style-type: none"> Arsenic Boron Bromide Calcium Hardness Iron Magnesium Manganese Nitrate Potassium Total organic carbon pH </td> <td>Must not exceed the MAV</td> </tr> <tr> <td>SB11</td> <td>One sample for UV transmittance is to be taken each week <u>month</u></td> <td>Must be not less than 80%</td> </tr> </tbody> </table>	Rule Number	Requirements	Limit	SB1	All testing is to be undertaken by a laboratory accredited by International Accreditation New Zealand (IANZ) and listed on the Taumata Arowai register of laboratories, <u>except for FAC, pH, turbidity and UV transmittance which may be measured using hand held or online devices or test strips.</u>	N/A	SB2	All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported <u>in a container with an internal at a</u> temperature of less than 6 degrees Celsius.	N/A	SB3	Source water turbidity must be measured after the point of abstraction and before treatment either continuously or daily.	<20 NTU at all times	SB4	Source water must be tested for the following determinands once when this drinking water acceptable solution is adopted and every three years thereafter. <ul style="list-style-type: none"> Arsenic Boron Bromide Calcium Hardness Iron Magnesium Manganese Nitrate Potassium Total organic carbon pH 	Must not exceed the MAV	SB11	One sample for UV transmittance is to be taken each week <u>month</u>	Must be not less than 80%
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<p>Section 8 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the monitoring and testing the water supplier must undertake.</p> <p>Do you agree with the treated water monitoring requirements?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> The treated water monitoring requirements are very onerous, with 1,159 samples to be taken each year. This is disproportionate to the scale and risk of treated bore water supplies. This acceptable solution could be used by two neighbours sharing a bore and such intensive monitoring is not warranted. Weekly monitoring of key parameters is more than enough. What if a water supply is not used continuously (e.g. marae)? Would they be expected to monitor treated water throughout the year even if it was not being used? The turbidity limit should increase to 5 NTU to be consistent with the evidence that UV units are effective at higher turbidity. Please refer above for our comments on chlorination. Our view is that this should not be required for this Acceptable Solution. Comments here on FAC are in the event that our recommendation is not adopted. 	<p>Amend the treated water monitoring requirements table to read:</p> <table border="1" data-bbox="1792 247 2736 1024"> <thead> <tr> <th>Rule Number</th> <th>Requirements</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>SBX</td> <td>All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported in a container that has an internal temperature of less than 6 degrees Celsius.</td> <td>N/A</td> </tr> <tr> <td>SB7</td> <td>One sample for <i>E. coli</i> is taken from a tap post-treatment after 30 minutes chlorine contact time each month (If there is still a chlorination requirement – otherwise just one sample of the treated water each month)</td> <td>Not present Less than 1 in 100 mL of sample</td> </tr> <tr> <td>SB8</td> <td>One sample for FAC residual is to be taken after 30 minutes chlorine contact time each day week</td> <td>Between 0.5 and 5 mg/L</td> </tr> <tr> <td>SB9</td> <td>One sample for pH is to be taken after 30 minutes chlorine contact time each day week</td> <td>Between 6.5 and 8</td> </tr> <tr> <td>SB10</td> <td>One sample for turbidity is to be taken after 30 minutes chlorine contact time each day week</td> <td>Must not exceed 1 NTU 5 NTU</td> </tr> <tr> <td>SB11</td> <td>One sample for UV transmittance is to be taken each week month</td> <td>Must be not less than 80%</td> </tr> </tbody> </table>	Rule Number	Requirements	Limit	SBX	All microbiological samples must be provided to a laboratory within 24 hours of collection and must be transported in a container that has an internal temperature of less than 6 degrees Celsius.	N/A	SB7	One sample for <i>E. coli</i> is taken from a tap post-treatment after 30 minutes chlorine contact time each month (If there is still a chlorination requirement – otherwise just one sample of the treated water each month)	Not present Less than 1 in 100 mL of sample	SB8	One sample for FAC residual is to be taken after 30 minutes chlorine contact time each day week	Between 0.5 and 5 mg/L	SB9	One sample for pH is to be taken after 30 minutes chlorine contact time each day week	Between 6.5 and 8	SB10	One sample for turbidity is to be taken after 30 minutes chlorine contact time each day week	Must not exceed 1 NTU 5 NTU	SB11	One sample for UV transmittance is to be taken each week month	Must be not less than 80%
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<p>Section 8 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the monitoring and testing the water supplier must undertake.</p> <p>Do you agree with the distribution system monitoring requirements?</p>	<p>5. Yes 6. Partially 7. No 8. Don't know</p> <p>Add a comment if relevant -</p> <p>The distribution system monitoring requirements are onerous, requiring 1,115 samples to be taken each year. This is likely disproportionate to the scale and risk of treated bore water supplies. This acceptable solution could be used by two neighbours sharing a bore and such intensive monitoring would not be warranted. Monitoring frequency needs reconsideration and should consider the scale of the supply, and amount of people affected. If a standard level is required, then a reduction from daily is recommended ie Weekly monitoring of key parameters is more than enough.</p> <ul style="list-style-type: none"> There is no point in measuring turbidity in the distribution network, it has already been measured at the treatment plant, which includes cartridge filtration to remove turbidity. Please refer above for our comments on chlorination. Our view is that this should not be required for this Acceptable Solution. Comments here on FAC are in the event that our recommendation is not adopted. 	<p>Amend the distribution system monitoring requirements table to read:</p> <table border="1" data-bbox="1792 1060 2736 1402"> <thead> <tr> <th>Rule Number</th> <th>Requirements</th> <th>Limit</th> </tr> </thead> <tbody> <tr> <td>SB17</td> <td>One sample for FAC residual each day week (or some variable based on scale)</td> <td>Between 0.2 and 5 mg/L</td> </tr> <tr> <td>SB18</td> <td>One sample for pH each day week (or some variable based on scale)</td> <td>Between 6.5 and 8</td> </tr> <tr> <td>SB19</td> <td>One sample for turbidity each day</td> <td>Must not exceed 5 NTU</td> </tr> </tbody> </table>	Rule Number	Requirements	Limit	SB17	One sample for FAC residual each day week (or some variable based on scale)	Between 0.2 and 5 mg/L	SB18	One sample for pH each day week (or some variable based on scale)	Between 6.5 and 8	SB19	One sample for turbidity each day	Must not exceed 5 NTU									
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Questions	Possible response	Recommendation
<p>Section 9 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the incident or emergency response plan the water supplier must develop.</p> <p>Do you agree that the incident and emergency response plan requirements are appropriate?</p>	<p>1. Yes 2. Partially 3. No 4. Don't know</p> <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> Acceptable Solutions need to consider the scale and complexity of supply. This Acceptable Solution may be used by two neighbours sharing a bore and the Acceptable Solution made sufficiently simple to accommodate this situation. It is unreasonable to expect such small water supplies, often run by neighbours, marae, community groups or farmers, to prepare an incident and emergency management plan. In the event of an emergency or incident, they will simply call the person that maintains their water supply to come and fix it or order a tanker of water to be delivered. Rather than every one of the thousands of private suppliers around the country preparing bespoke plans and communications, it would be far more efficient and effective for Taumata Arowai to provide a simple, standard template for water suppliers to use. Key contacts for maintenance and water tankers are already included in the O&M manual requirements. 	<p>Replace this section entirely to a reference to a page on Taumata Arowai's website which provides the following documents for water suppliers to use:</p> <ul style="list-style-type: none"> Boil water notices and do not drink notices Simple template procedure for how to advise consumers of a problem with the water supply Procedure to follow if a test result exceeds the MAV
<p>Section 10 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the training and awareness obligations of the water supplier.</p> <p>Do you agree that the training and awareness obligations of the water supplier are appropriate?</p>	<p>4. Yes 5. Partially 6. No 7. Don't know</p> <p>Add a comment if relevant -</p> <p>Taumata Arowai needs to provide further context of its expectations in terms of training and competency validation.</p> <p>Suppliers each exist in the nuanced context of their communities with specific knowledge and experience of their own systems. When speaking with private water suppliers in Hawke's Bay, many stated that the draft Rules and Acceptable Solutions have been drafted without considering the historical knowledge, skills and experience and cultural customs which had been passed down through generations and that the Rules and Acceptable Solutions will be 'imposing' on those existing bodies of knowledge.</p>	<p>The requirements for training and awareness should be amended to reflect tikanga and intergenerational knowledge about the water supply.</p>

Questions	Possible response	Recommendation
<p>Section 11 of the proposed Acceptable Solution for Spring and Bore Drinking Water Supplies covers the auditing obligations of the water supplier.</p> <p>Do you agree that the auditing obligations of the water supplier are appropriate?</p>	<ul style="list-style-type: none"> • Yes • Partially 2. No 3. Don't know <p>Add a comment if relevant -</p> <ul style="list-style-type: none"> • The audit checklist should be greatly simplified so that it can be used by community members responsible for running small supplies. • We agree with most audits being done internally, with external audits only as required. • It is unclear who would undertake external audits on behalf of Taumata Arowai. Would this be Councils or another third party? Our view is that this should not be Councils, and that Taumata Arowai have a form of authorisation/accreditation of auditors similar to the approach used for specified systems in the building compliance regime. 	<p>Simplify the audit checklist so that it is practical and can be used by community members responsible for running small supplies. Suggested checklist:</p> <ul style="list-style-type: none"> • Does the operations and maintenance manual comply with the acceptable solution requirements? • Are there are records showing that the people operating and maintaining the water supply have been trained in the use of the operations and maintenance manual in the last three years? • Are there records confirming that the cartridge filters, UV units and UVI sensors been maintained at the required frequencies? • Has the required water testing has been undertaken? Did any of the values exceed the maximum acceptable values in the drinking water standards? If yes, was Taumata Arowai notified and was its response procedure followed?

If you want to provide any additional feedback, please provide this here:

Additional feedback: **Please refer to the main body of the submission – Appendix 1 Hawke’s Bay Private Drinking Water Supply Project**