Drinking Water Safety Planning Template
For **Small** Supplies: Supplying 26–100 people

TAUMATA AROWAI

Name of owner:	Grange Road Water Association
Name of operator (if different to owner):	
Supply name:	Grange Road Water Supply
Supply location:	The supply provides water to 73 houses along Grange Road on sode roads off Grange Road at NE end of Hahei village. The water comes from bores in the supply area at 36:50:25:77 South 175:47:55:182 East
Unique supply identifier:	HAH002
Emergency contact name:	Duncan Kingsbury
Emergency contact phone number:	021 393931
Supply type:	Networked - Small supply (25 - 100 population)
Population:	40 permanent residents

Drinking Water Quality Assurance Rules category: ☑ Networked supplies ☐ Self-supplied buildings

*Please refer to the **Drinking Water Safety Planning Guidance for Small Supplies – Supplying 26-100 people** as you complete this template.*

▲ **Question 1:** How are you giving effect to Te Mana o te Wai?

How are you managing your water supply to protect the health and wellbeing of your water, the wider environment, and the community?

The assessment of the effects on the environment identified no adverse effect on surface or ground water from the taking of water from our bores. The sodium hypochlorite we use for dosing is stored and dosed within a bunded building to prevent chemical exscape.

Question 2: What makes up your drinking water supply?

What are the components of your drinking water supply?

Include all infrastructure and processes used to abstract, store, treat, or transmit drinking water.

A. Water sources - tick relevant boxes

- [x] **Bore** (including well)

  Description: Three bores in close proximity. Two about 40m deep with casing to 25m. One about 70m deep with a casing down to 52m.

- [ ] **Spring**

  Description:

- [ ] **Lake** (include dam)

  Description:

- [ ] **River / stream / creek**

  Description:

- [ ] **Roof** (rainwater)

  Description:

- [ ] **Carted water** (e.g. from a water carrier)

  Description:

- [ ] **From other drinking water supply**

  Description:

B. Treatment

- [ ] Pre-treatment (e.g., first flush diverter)
- [x] Cartridge filtration
- [x] Chlorination (e,g., sodium hypochlorite)
- [ ] UV disinfection
- [ ] None
- [ ] Other - specify:

C. Distribution

- [x] Storage/header tank
- [x] Pipes
- [x] Pumps
- [ ] Other - specify:

D. Population and supply volume

1. How many consumers does this supply normally provide drinking water to?

40 permanent residents

2. What is the anticipated daily minimum and maximum (peak) volume of drinking water provided to that population?

Between 15,000l and 20,000l with normal population increasing up to 60,000l during summer peak.

3. Does this population increase significantly at different times of the year?

Yes

4. If **Yes** to Question 3, what is the maximum number of consumers you supply water to?

About 250

5. If **Yes** to Question 3, is your supply capable of supplying sufficient water to the maximum number of consumers?'

Yes, with all bores in operation and restrictions on water use prohibiting watering of gardens and washing of cars and boats.

6. If **No** to Question 5, how will you supplement your drinking water supply to ensure sufficient drinking water is supplied at all times?

Question 3: What does your supply look like?

Provide a flow diagram or schematic and photos of your supply

Please take a photo of the drawn picture of your supply and provide it with other photos of your supply.

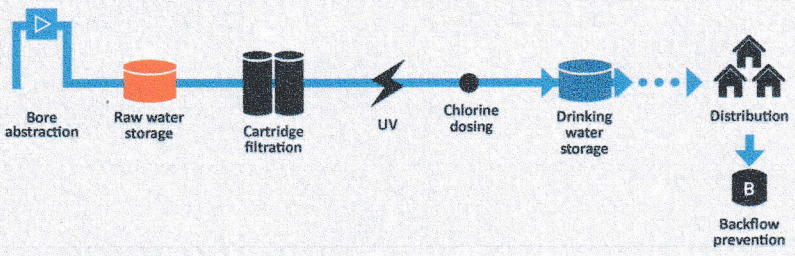
Confirmation of attachments – tick relevant boxes

- [x] Your drawn picture (flow diagram or schematic) is included below or attached (a scan or photograph is fine).
- [ ] Photos of my supply are attached to this Drinking Water Safety Plan.

Optional space for your drawn picture

See attached diagram

Example only



▲ Question 4: What can go wrong?

What are the risks to your water supply and how will you control them?

Below are some common risks which can cause rapid outbreaks of illness for consumers..

- [x] Pathogenic bacteria
- [x] Protozoal contamination
- [x] Loss or reduction of source of water supply

Potential hazards

- [x] **A. Bore water** – contamination through bore head

Likelihood of occurrence: [ ] High [x] Medium [ ] Low

How will you control the risk?

- [ ] Bore head fenced at least 5m away
- [x] Bore head on hard standing apron with concrete surround
- [x] Bore head maintained in good condition
- [x] Other: Locked GRP covers over each bore head and regular inspections

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- [ ] **B. Rainwater** – contamination through roof, guttering, pipes and other elements used in rainwater collection

Likelihood of occurrence: [ ] High [ ] Medium [ ] Low

How will you control the risk?

- [ ] First flush diverter installed
- [ ] Other:

- [ ] **C. Hazards potentially present in untreated water**

Likelihood of occurrence: [ ] High [ ] Medium [x] Low

How will you control the risk?

- [x] Filtration (rated at a minimum of 5 micron or less nominal pore size)
- [ ] UV disinfection (at least 40mJ/cm^2)
- [x] Chlorination
- [ ] Other:

D. Remaining contamination due to inadequate treatment

Likelihood of occurrence: ☐ High ☐ Medium ☑ Low

How will you control the risk?

- ☐ Automatic shut-off if UV dose not met
- ☐ Alarm
- ☑ Other: Regular monitoring and normally 7 day storage before water reaches household taps

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E. Contamination of treated water due to, for example, cracks or holes in water tanks/reservoirs, pipes breaking

Likelihood of occurrence: ☐ High ☑ Medium ☐ Low

How will you control the risk?

- ☑ Chlorination
- ☑ Backflow protection at: Every house connection
- ☑ Regular maintenance: Weekly inspections
- ☐ Pressure monitoring:

F. Chemicals which may be a hazard to your supply

These chemicals may arise from either the environment (such as nutrient run-off, industrial wastewater, or naturally occurring minerals such as manganese and arsenic) or due to treatment error (such as incorrect dosage levels).

Likelihood of occurrence: ☐ High ☑ Medium ☐ Low

How will you control the risk?

- ☐ No treatment/control yet
- ☐ Aeration and settlement
- ☐ Scouring
- ☐ Ability to switch to alternate source
- ☐ Use bottled or stored water when this is an issue
- ☐ Appropriate storage of chemicals
- ☑ Incorrect dosage levels

  How will you control the dose? Flow paced dosing with regular monitoring and up to 7 days storage after dosing.

G. Contamination of or changes to your catchment affecting your source water

Likelihood of occurrence: ☐ High ☐ Medium ☑ Low

How will you control the risk?

This could include developing good relationships with upstream users, the power company, the owner of the source water, whānau, hapū (in respect of rāhui), iwi Māori, farmers (in respect of pesticides), regional/district council

Water taken from bores with casing down to 25m minimum. Almost all of the catchment area for the groundwater is undeveloped with little risk of groundwater contamination. Any changes to the catchment area will be monitored and taken into account in future DWSPs.

☐ **H. Other potential hazards (please specify):**

Likelihood of occurrence: ☐ High ☐ Medium ☐ Low

What are the risks arising from these hazards?

How will you control the risks?

How will you know your controls are working?

Ways of checking your water supply is healthy

- ☑ **Sampling and having my water supply tested every three months (mandatory)**
- ☑ Making regular visual inspections of my water supply
- ☑ Recording regular maintenance and cleaning of machinery, etc
- ☑ Monitoring my water supply's treatment process
- ☑ Other (please specify): Regular testing of free chlorine level after treatment

Can you make any improvements and what is the timeframe for those?

How can the supply be improved to control the risk/s?

The requirement for UV disinfection in addition to chlorine is being assessed.

Timeframes for improvements to the supply

A year

▲ Question 5: How will you respond when an incident occurs?

What would be an urgent situation for your drinking water supply?

Incident type – tick all relevant boxes

- [ ] Power cuts/loss of electricity supply
- [x] Damage to or problems with your supply
- [x] Failed sample
- [ ] Rāhui
- [ ] Inability of you or a back-up person to address any problems (through prolonged absence)
- [x] Natural disaster
- [x] Outbreak of illness in the community (which could be an indicator of potential waterborne contamination)
- [ ] Other (please specify):

How will you respond to an incident?

For example, where you think your drinking water is or may be unsafe or does not comply with Drinking Water Standards.

Responses proposed in your plan – tick relevant boxes (more than one may apply)

- [ ] Take test samples and send them to an accredited laboratory for analysis
- [x] Investigate the source or cause of the incident and address it as soon as possible
- [x] Notify Taumata Arowai of the incident
- [x] Notify consumers of the incident
- [x] Provide advice to your consumers on what to do until the safety of their drinking water is confirmed
- [x] Take measures to ensure the problem does not re-occur
- [x] Other (please specify):

Take a test sample if there is any continued concern over water safety after remedial actions have been taken.

Question 6: When will you review your plan?

Triggers for review

- [x] Routine review of safety plan effectiveness and update as required

  Reviewer: Bill Stead

  Timeframe: Annual

- [x] Water has been unsafe or there was an incident or event, including a test analysis indicating a Maximum Acceptable Value (MAV) non-compliance?

  Reviewer: Bill Stead

  Timeframe: ASAP

- [x] There has been a change to your water source:

  Change to minimum casing depth or casing condition

- [x] There has been a change in who looks after your water source and/or supply:

  Change in skill level of operation and maintenance staff

- [ ] Other (please specify):

Approval by drinking water supply owner or representative

Approver's name: Duncan Kingsbury

Date: 12/11/22

Signature:

Next steps

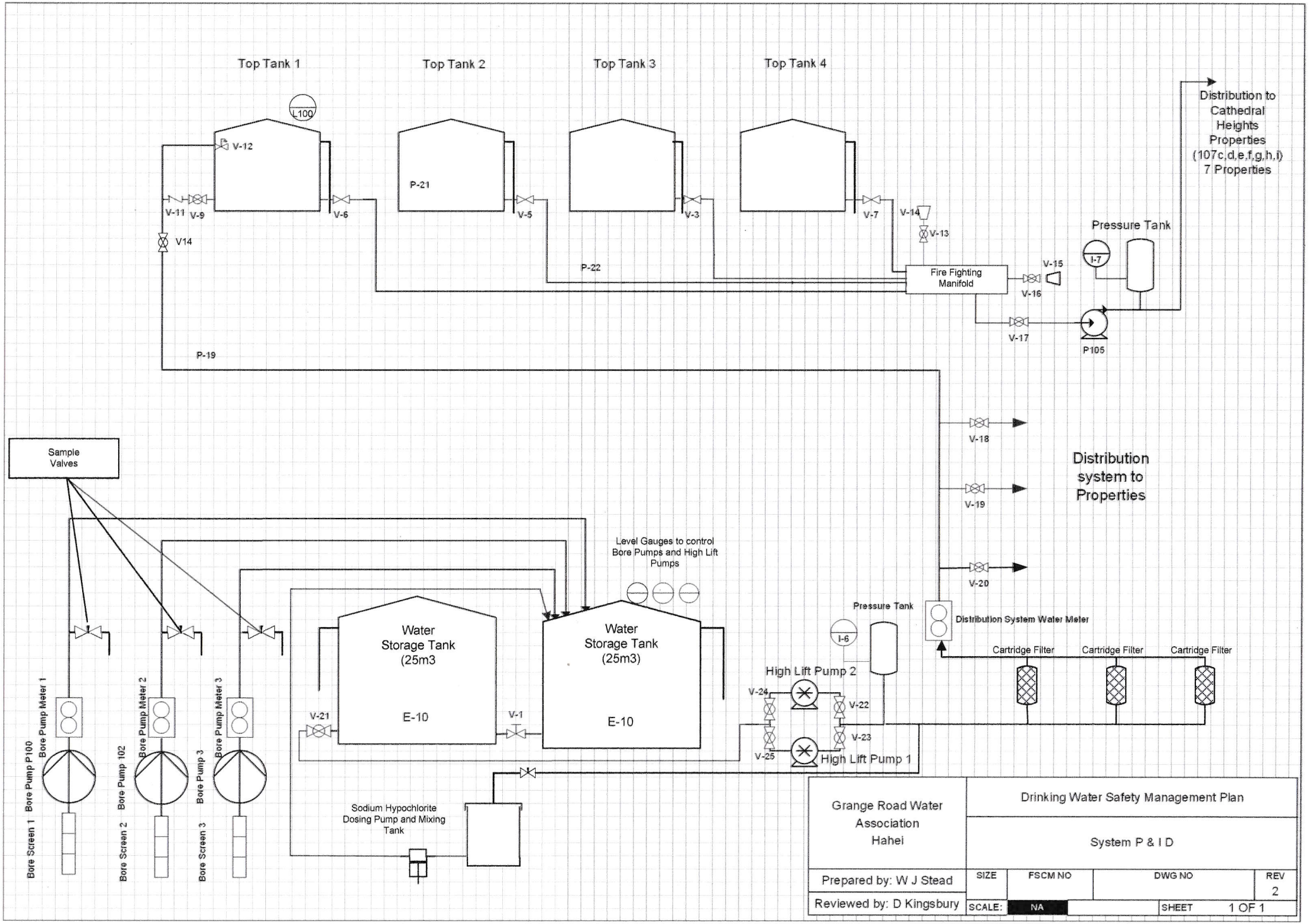
Please return your completed Drinking Water Safety Plan to Taumata Arowai, by either:

- **Website:** submit via Hinekōrako on the Taumata Arowai website
- **Email:** info@taumataarowai.govt.nz
- **Post:** Level 2, 10 Brandon Street, PO Box 628, Wellington 6140, New Zealand

Store a copy of this plan in a place that is easily accessible to you (and any others involved in managing or operating the drinking water supply).

Questions?

Refer to the Drinking Water Safety Plan Guidance or the Taumata Arowai website: Drinking water safety planning | Taumata Arowai or contact your Taumata Arowai Regional Team Regulatory Team | Taumata Arowai for more information.


Top Tank 1
Top Tank 2
Top Tank 3
Top Tank 4
L100
V-12
P-21
V-11
V-9
V-6
V-5
V-3
V-7
V-14
V-13
V14
P-22
Fire Fighting Manifold
V-15
V-16
Pressure Tank
I-7
Distribution to Cathedral Heights Properties (107c,d,e,f,g,h,i) 7 Properties
V-17
P105
P-19
V-18
V-19
V-20
Distribution system to Properties
Sample Valves
Level Gauges to control Bore Pumps and High Lift Pumps
Water Storage Tank (25m3
E-10
Water Storage Tank (25m3)
E-10
V-21
V-1
Pressure Tank
I-6
Distribution System Water Meter
Cartridge Filter
Cartridge Filter
Cartridge Filter
High Lift Pump 2
V-24
V-22
V-23
V-25
High Lift Pump 1
Bore Pump Meter 1
Bore Pump Meter 2
Bore Pump Meter 3
Bore Pump P100
Bore Pump 102
Bore Pump 3
Bore Screen 1
Bore Screen 2
Bore Screen 3
Sodium Hypochlorite Dosing Pump and Mixing Tank
Grange Road Water Association Hahei
Drinking Water Safety Management Plan
System P & I D
Prepared by: W J Stead
Reviewed by: D Kingsbury
SIZE
FSCM NO
DWG NO
REV
2
SCALE:
NA
SHEET
1 OF 1