Water Supply

Quality Assurance Program

This program has been prepared by:

John Smith

Manager

This program is for:

Bed and Breakfast

100 Main Street, Anywhere, NSW

(Shallow bore with inline filters and UV disinfection)

Date: April 2014

Contents

Background

The *Public Health Act 2010* and Public Health Regulation 2012 require that all suppliers of drinking water establish and adhere to a Quality Assurance Program (QAP). This QAP was developed by customising the template provided by *NSW Health Private Water Supply Guidelines* to ensure its relevance to the water supply system for the Bed and Breakfast.

This QAP addresses the Framework for Management of Drinking Water Quality set out in the *Australian Drinking Water Guidelines* (ADWG 2011), in a way that is appropriate to the water supply to the Bed and Breakfast.

The *NSW Health Private Water Supply Guidelines* were also used to develop this QAP

Water Supply Quality Assurance Program

A water supply system includes everything from the collection of the source water through to the point of use. When developing this QAP for the Bed and Breakfast water supply system the following questions were addressed:

- What problems could occur between the water source and the point of use?
- How can they be prevented or fixed?
- How do you know that the problem has been prevented or fixed?

The answers to these questions helped to determine how to:

- assess and protect the quality of the source water
- make sure treatment processes are appropriate, maintained and working properly
- regularly test the water quality
- make the water supply safe if contamination has occurred
- make sure that water users are warned and/or provided with safe drinking water if the normal supply is found to be unsatisfactory or the quality cannot be guaranteed.

Keeping the water supply system safe involves:

- identifying who is responsible for the system and who will respond to issues
- understanding hazards to your water sources
- making sure the water is stored and distributed safely
- treating the water to remove or control any contamination
- monitoring the quality of the water and the integrity of the water supply system
- planning on how to respond to problems in the water supply system.

This QAP reflects the type of water supply system managed by the Bed and Breakfast, especially the water source and its end uses. While NSW Health recommends that water supplies be monitored regularly, operators may choose not to monitor water quality.

What to do with the QAP

A copy of this completed QAP has been provided to the Public Health Unit for review.

This QAP should be a living document that is reviewed regularly. Any changes that occur to the water supply system or any new hazards that are identified from observations, equipment checks, incidents or monitoring should be added to the relevant section of the program.

This QAP should be kept in a central place that is easily accessible to staff and others who may need to view it, such as officers of NSW Food Authority, your local Council and NSW Health.

The activities in this QAP are undertaken by this business to ensure safe drinking water and to protect public health.

1 Basic Information

1.1 Private water supplier's details

Property/business name	Bed and Breakfast
Owner/occupier name	John Smith
Owner /occupier contact details	John Smith Phone: (02) 6230 0000 Email: john.smith@BandB.com Address: 100 Main Street, Anywhere, 1234 NSW
Business after-hours / emergency contact	John Smith Mobile: 0401 234 567 Email: john.smith@BandB.com

1.2 Water supply system monitoring and maintenance personnel details

	Roles and responsibilities
Name and phone number of main person responsible	John Smith Phone: (02) 6230 0000 Email: john.smith@BandB.com
Name and phone number of any other people responsible	Kate Jones Mobile: 0400 000 000 Email: kate.jones@BandB.com

1.3 Description of the water supply system

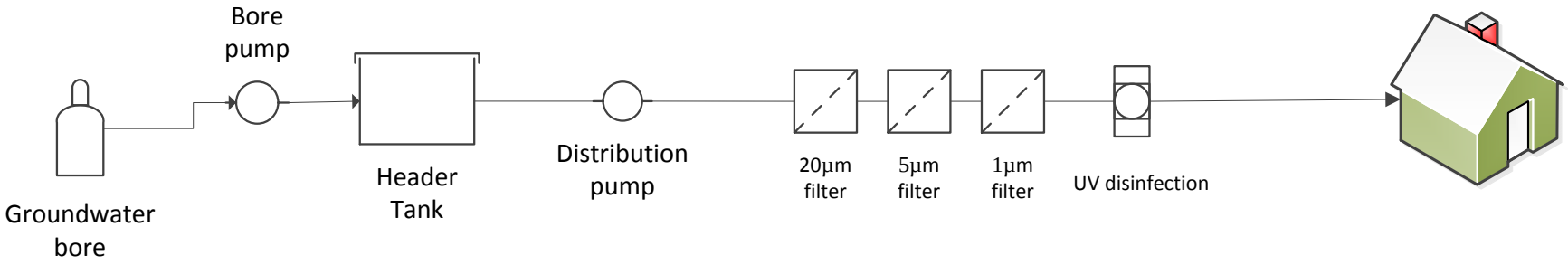
Tick	Component	Description
Water sources		
✓	Groundwater (bore)	1 x groundwater bore. Unconfined aquifer. Bore through soil; PVC casing/sleeve above extends above ground; bore depth 10 m. Water is then filtered and disinfected using UV.
×	Carted water	Unlikely, but available as a backup if required
Treatment		
✓	Filtration	1 x 20 micron filter 1 x 5 micron filter 1 x 1 micron filter
✓	UV disinfection	UV treatment (1x 130 Lpm Brand Model UV130-40)
Distribution		
✓	Storage/header tank	1 x corrugated iron storage tank receiving water from bore
✓	Pipes	Black poly pipes PVC pipes
✓	Pumps	1 x Brand A distribution pump 1 x Brand B bore pump
Uses		
✓	Drinking	Bed and breakfast for up to 12 people
✓	Food preparation (including washing of produce and cleaning of utensils and equipment) Is the food business notified to NSW Food Authority?	Bore water used for food preparation and for washing and cleaning of utensils and equipment. Yes
✓	Personal hygiene (showers, toilets etc.)	Bore water used for toilets, showers and hand washing.
✓	Clothes washing	Bore water used for washing linen and clothing.
✓	Other	Bore water used for wiping tables and general cleaning in the B&B.

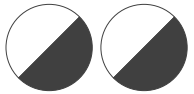
2 Diagram of the Water Supply System

Bed and Breakfast

Uses of bore water:

- Drinking water
- Food preparation
- Hand washing
- Showers
- Clothes ashing





Septic tank treatment downhill 50 m from bore

3 Risk Assessment of the Water Supply System

Step 1: Identify particular hazards in your water supply in the risk assessment template. The table in Appendix B gives some examples of some hazards and is provided to assist you to complete the "Hazard" column of the Risk Assessment.

Step 2: Assign risk rankings. Once you have listed all possible hazards, assign a risk ranking to each hazard as low, medium or high in the risk assessment template. Consider the likelihood of the hazard occurring and, if it does, the severity of the consequence. The table in Appendix C may assist in ranking risks.

Step 3: Identify controls. Decide whether the hazards identified in your system have controls in place and describe these controls in the risk assessment template. Controls are the ways that risks will be managed, for example excluding animals from dams used for human drinking water, regular inspection and maintenance programs or water treatment. The table in Appendix B gives some more examples of possible controls for various hazards.

Step 4: Monitoring of controls is important to ensure they are working effectively. Describe in the risk assessment template how, when and where monitoring will occur, who is responsible, how and where records will be kept and by whom. Consult the Private Water Supply Guidelines for information on monitoring.

Step 5: If any hazards are not controlled, identify what could be done to improve safety and reduce the risk of those hazards. List any shortcomings in your water supply system and its management and identify what improvements should be made. Document these improvements in your risk assessment template.

Step 6: Prioritise actions that need to be taken to protect the water supply and give them a priority number or time frame in the risk assessment template.

3.1 Risk Assessment

Step 1 Hazard	Step 2 Risk Rank	Step 3		Step 4 How is this control monitored?	Step 5 If not controlled what could be done to improve safety?	Step 6 Timeframe for action
		Hazard Controlled?	What is the control, if any?			
Bore water contaminated by surface activities, including septic tank	*Medium*	*Yes*	• *In-line filters* • *UV system* • *Regular maintenance, pump out and yearly inspection of septic tank* • *Septic tank down hill from bore*	• *Routine inspection of the water treatment system* • *Routine maintenance and replacement of filter cartridges and UV lamps* • *Monthly E. coli testing* • *Records of UV servicing kept* • *Signs to inform consumers ready in case of contamination*		
Surface water seepage	*Medium*	*Partially*	• *PVC sleeve extending above ground* • *Ensure bore covers and casings are intact*	*Monthly inspections*		
Build-up of sludge in tank, dirt in inlet strainers and/or insect screens	*Medium*	*Yes*	*Screen on tank inlet*	*Screens cleaned every 2 weeks.* *Tank drained and cleaned every 2 years*		

Step 1 Hazard	Step 2 Risk Rank	Step 3		Step 4 How is this control monitored?	Step 5 If not controlled what could be done to improve safety?	Step 6 Timeframe for action
		Hazard Controlled?	What is the control, if any?			
Contamination from frogs, birds and animals entering the tank	*Medium*	*Yes*	*Roof integrity* • *In-line filters* • *UV system*	*Inspection of tank integrity during two-weekly screen cleaning*		
Mosquitoes breeding in the storage tank	*Medium*	*Yes*	*Screens on tank inlet and overflow*	Checked fortnightly when screens are cleaned		
Low pH or softness of water corroding plumbing fittings when the taps haven't been used so water sits in pipes	*Low*	*No*	• *Visual inspection of water colour* • *Good water turnover* • *Flush taps first thing in the morning to remove standing water*	*Chemistry sample to assess pH and hardness*		

4 Management Actions and Record Keeping

Document all activities required to manage the water supply including inspections, maintenance, signage, monitoring, and incident management.

Keep records of:

- system inspections
- all results of microbial and chemical testing, and chlorine levels (where applicable)
- maintenance to the water system such as tank cleaning, filter change, chlorination
- incidents and corrective actions e.g. dead animal in tank, storms, treatment breakdown
- deliveries of carted water, including date and name of supplier
- the placement of warning signs.

4.1 Planned water supply system inspection and maintenance program

Planned inspection and maintenance program

Item inspected / maintained	Frequency or dates	Who by	Equipment or procedures
UV system inspection	*Daily*	*Manager*	*Check UV light is operating & light is visually free from scum. Clean as appropriate.*
Clean filters	*Monthly*	*Manager*	*Cleaned and washed*
Maintain filters	*Monthly*	*Manager*	*Clean filter as per equipment manual* *Filters replaced at frequency recommended by manufacturer*
Inspect well head is secure and free from water pooling	*Monthly or after heavy rains*	*Manager*	*Visual inspection*
Clean screens on tank	*Fortnightly*	*Manager*	*Clean screens and look for defects in tank structure*
Check for mosquito larvae/access	*Fortnightly*	*Manager*	*Visual inspection of a scoop of water* *Inspection of screens on inlet and outlet*
Structural condition of tank	*Annually*	*Contractor*	
System (pump, piping, bore casing) is fully operational and maintained	*Annually*	*Manager*	*Equipment manuals*
Drain tank to remove sludge build-up	*Every 2 years*	*Manager*	
Replace UV light source	*As required*	*Manager*	*Equipment manuals*

4.2 Water supply system inspection and maintenance records

Water supply system inspection and maintenance record (planned and additional)

Date	What was inspected	Notes	Actions to be taken	Person Responsible
	UV system inspection			
	Clean filters			
	Maintain filters			
	Inspect well head is secure and free from water			
	Screens of storage tank			
	Structural condition of tank			
	System (pump, piping, bore casing) is fully operational and maintained			
	Drain tank to remove sludge build-up			
	Replace UV light source			

4.3 Equipment details

Equipment records (procedures for operation and maintenance including history)

Part / Equipment	Manufacturer[1]	Supplier/Repairer Contact Details
Water pumps	*Brand A & Brand B*	*Anywhere Irrigation Supplies* 0414 444 444
Filters	*Brand A*	*Anywhere Irrigation Supplies* 0414 444 444
UV system	*Brand B*	*Anywhere Irrigation Supplies* 0414 444 444
Laboratory	*Brand Laboratory*	*Anywhere Laboratory Services* 0414 444 444

Note 1: *Manufacturer's instructions are held by Manager*

4.4 Sign posting

Signs

Sign location	Sign wording	Permanent or Temporary	Inspection Date	Any action taken
At taps	Water Not Suitable for Drinking	Temporary if *E. coli* detected and/or UV system has failed	n/a	n/a
No non-potable water taps– no signs installed on site	*n/a*	*n/a*	*n/a*	*n/a*

4.5 Water quality monitoring program

Water quality monitoring

What is to be monitored	How often are tests to be taken (frequency or dates)	Location of tests	Who should perform the test	Equipment needed and procedures for performing the test
Water quality	*Daily*	*Kitchen*	*Manager*	*Taste & odour* *Visual inspection*
E. coli	*Monthly*	*Kitchen*	*Manager*	*See sampling procedure from laboratory*
Chemical	*Annually*	*Kitchen*	*Manager*	*See sampling procedure from laboratory*

4.6 Water quality monitoring results

Water testing results – visual inspection and taste

Date	Where test was taken from	Type of test taken	Observation	Any action taken	Person Responsible
		Water quality			
		E. coli			
		Chemical			

4.7 Records of water purchased from a water carter

Purchased water

Date	Name and details of Water Carter	Volume of water purchased

4.8 Incident records

Issue / Incident / Emergency Record (including customer complaints)

Date	Incident	Notes and corrective actions	Person(s) Responsible

5 Contingency and Emergency Planning

Document what you plan to do:

- if there was a problem with an important part of the water supply system
- to ensure all people responsible for the water supply system have the knowledge and skills to run the system, e.g. training temporary managers
- in response to customer complaints regarding water quality
- any other issue.

5.1 Contingency plan

Issue	Likely actions that could be taken
Dirty or smelly water	• *Flush lines* • *Check water quality in tank and tank integrity* • *Check filters and confirm UV operation* • *Use bottled water for drinking, food preparation, cleaning teeth* • *Consider chlorinating tank*
Unpleasant taste to water	• *Flush lines* • *Check water quality in tank and tank integrity* • *Check filters and confirm UV operation* • *Use bottled water for drinking, food preparation, cleaning* • *Consider chlorinating tank*
Positive E. coli test	• *Contact Public Health Unit for advice* • *Sign post all outlets that water supply is contaminated and not to be used for drinking, food preparation or consumed when cleaning teeth* • *Use bottled water for drinking, food preparation, cleaning teeth* • *Check water quality in tank and tank integrity* • *Check filters and confirm UV operation* • *Consider chlorinating tank* • *Re test water for E. coli*

5.2 Emergency contacts

Contact	Name	Contact Details
Public Health Unit	*Sourced from:* *http://www.health.nsw.gov.au/Infectious/pages/phus.aspx*	
Local Council	Anywhere Council	13 0000
Pollution Incident Hotline	*NSW Environment Protection Authority*	*131 555*
Plumber	Bill's Plumbing	0414 414 414
Electrician	Jo Sparks	0414 141 141
Plumbing Supplies	*Anywhere irrigation supplies*	0414 444 444
Water Supplies	*Wet Water Bottled water supplier*	0414 444 444
Water Carter	*Wet Water carter supplier*	0414 444 444