

Water Supply

Quality Assurance Program

This program has been prepared by:

John Smith

Manager

This program is for:

Campground

100 Main Street, Anywhere, NSW

(River water with inline filter and UV filtration)

Date: April 2014

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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 Campground.

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 Campground.

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 Campground 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 Campground, 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 | Campground |
| Owner/occupier name | John Smith |
| Owner /occupier contact details | John Smith Phone: (02) 123 000 000 Email: john.smith@campground.com Address: 100 Main Street, NSW, 0000 |
| Business after-hours / emergency contact | John Smith Mobile: 040 1234 567 Email: john.smith@campground.com |

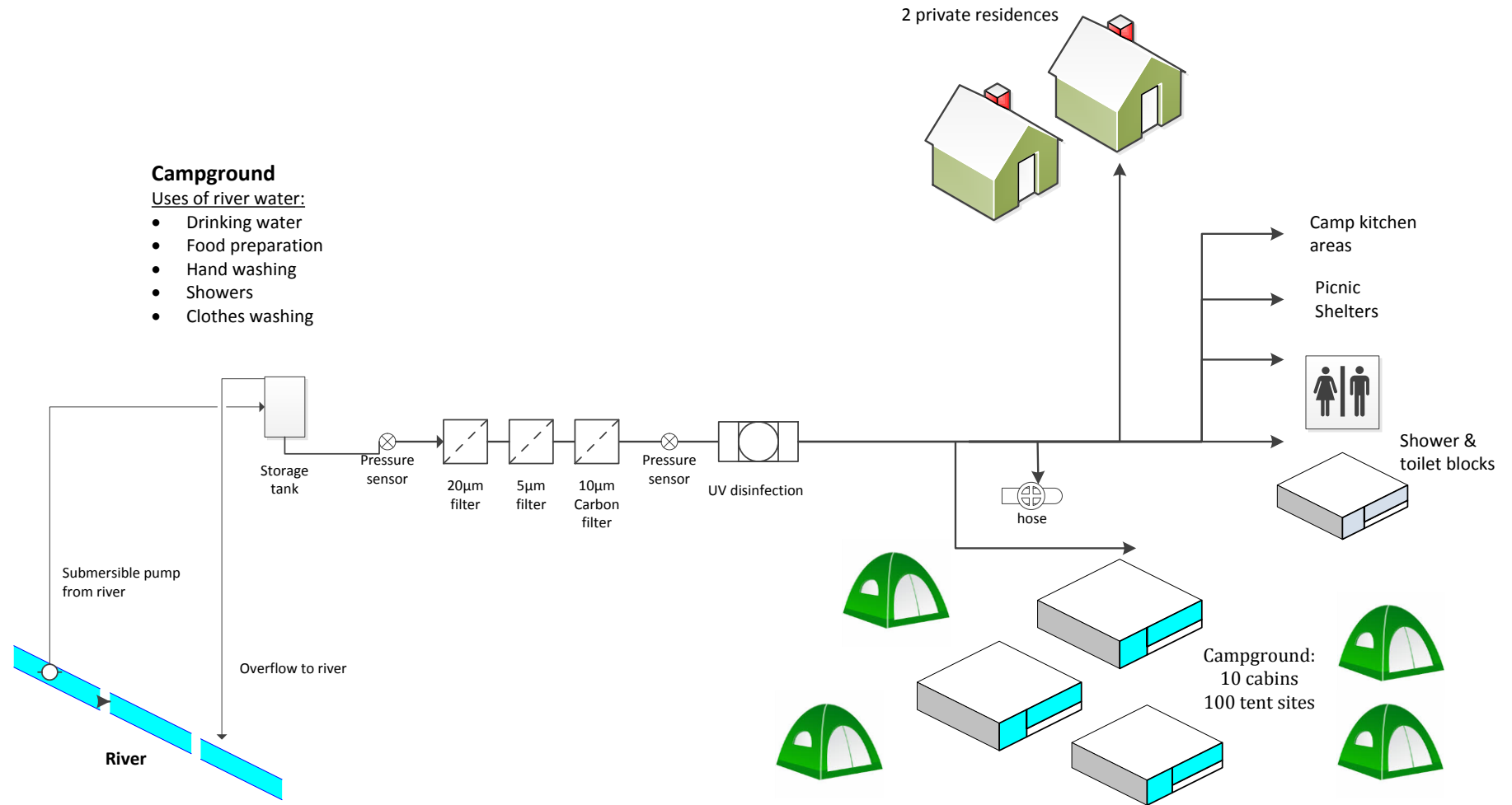
1.2 Water supply system monitoring and maintenance personnel details

| | Roles and responsibilities |
|--|--|
| Name and phone number of main person responsible | John Smith Phone: (02) 123 000 000 Email: john.smith@campground.com Address: 100 Main Street, Anywhere, NSW |
| Name and phone number of any other people responsible | Kate Jones Mobile: 040 0000 000 Email: kate.jones@campground.com |

1.3 Description of the water supply system

| Tick | Component | Description |
|----------------------|--|---|
| Water sources | | |
| ✓ | River / creek | Pumped from river Water is then filtered and disinfected using UV |
| Treatment | | |
| ✓ | Filtration | 1 x 20µm filter 1 x 5 µm filter 1 x 10 µm carbon filter |
| ✓ | UV disinfection | UV treatment (1x 130 Lpm Brand UV130-40) |
| Distribution | | |
| ✓ | Pipes | Poly pipes |
| Uses | | |
| ✓ | Drinking | Water is distributed throughout grounds: <ul style="list-style-type: none"> • 10 Cabins • 100 Tent sites • Picnic shelters • Camp kitchen areas • 2 Private residences |
| ✓ | Food preparation (including washing of produce and cleaning of utensils and equipment) Is the Food Business notified to the NSW Food Authority? | Water is distributed throughout grounds from stand pipes. Food preparation undertaken in camp kitchen and picnic shelters. Kitchen in private residence. N/A |
| ✓ | Personal hygiene (showers, toilets etc.) | Multiple shower and toilet blocks Bathrooms in private residences |
| ✓ | Clothes washing | Clothes washing in private residence |
| ✓ | Other | Water is distributed throughout camp grounds through taps. |

2 Diagram of the Water Supply System



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 either 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 No what could be done to improve safety? | Step 6 Timeframe for action |
|---|---------------------|--------------------|--|---|---|--------------------------------|
| | | Hazard Controlled? | If Yes what is the control? | | | |
| Dirty river water after heavy rain | High | Yes | Visual check of river water In-line filters | Water pressure at taps indicates if filters are blocked. Incoming water colour can be manually checked if necessary | Source alternative water supply for drinking (bottled water) | High |
| Contaminants from upstream farms in river | High | Yes | In-line filters including carbon filter UV | Water pressure at taps indicates if filters are blocked Routine monitoring of UV system Monthly <i>E. coli</i> monitoring | | |
| Corrosion of metal plumbing fittings by soft water or low pH e.g. copper from pipes resulting in blue water | Low | Yes | Flush taps after a period of inactivity | Visual inspection of water colour | | |
| Plumbing materials (e.g. piping) | Unknown | Unknown | Unsure if all materials comply with AS/NZS 4020:2005 | Annual chemical testing | Ensure all future water supply equipment complies with AS/NZS 4020:2005 | Immediate |

| Step 1 Hazard | Step 2 Risk Rank | Step 3 | | Step 4 How is this control monitored? | Step 5 If No what could be done to improve safety? | Step 6 Timeframe for action |
|-----------------------------------|---------------------|-----------------------|-----------------------------|---|--|-----------------------------------|
| | | Hazard Controlled? | If Yes what is the control? | | | |
| Pipe breakage | High | No | | Water pressure at tap Visual inspection Annual check of pipes | Source alternative water supply for drinking (bottled water) | Immediate |
| Blockage or failure of filters | High | Yes | Pressure | Pressure sensors before and after filters Maintenance as per manufacture instructions Monthly <i>E. coli</i> monitoring | Source alternative water supply for drinking (bottled water) | Immediate |
| Failure of UV system | High | Yes | Alarm on UV system | Inspect UV system and alarm Check UV light is operating Maintenance as per manufacture instructions Monthly <i>E. coli</i> monitoring | Have 'do not drink' signage ready in case of UV failure Source alternative water supply for drinking (bottled water) | Immediate |

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
- chlorine levels (where applicable)
- maintenance to the water system such as tank cleaning, filter change, addition of chlorine
- incidents and the corrective actions taken, such as finding a dead animal in the tank, storms that may have affected water quality, 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

| What is to be inspected/maintained | How often it is to be inspected/maintained (frequency or dates) | Who should conduct the inspection/maintenance | Activity |
|--|---|---|------------------------------------|
| <i>Inspect UV system and alarm Check UV light is operating</i> | <i>Twice daily when occupied</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Monitor pressure</i> | <i>Daily</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Clean filters</i> | <i>Weekly</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Clean glass tube on UV filter</i> | <i>When dirty</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Replace UV lamp</i> | <i>As per lamp life monitor</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Replace carbon filter</i> | <i>Every 6 months</i> | <i>Caretaker</i> | <i>Refer to instruction manual</i> |
| <i>Check piping is operational and maintained</i> | <i>Annually</i> | <i>Caretaker</i> | |

4.2 Water supply system inspection and maintenance records

Water supply system inspection and maintenance record

| Date | What was inspected | Notes | Actions to be taken | Person Responsible |
|--------|--|-------------------------|---------------------|--------------------|
| 1/4/14 | System pressure | OK | | Manager |
| 1/4/14 | Inspect UV system and alarm Check UV light is operating | System was operating OK | | Manager |
| 1/4/14 | Clean filters | Filter cleaned | | Manager |
| | Clean glass tube on UV filter | | | |
| | Replace UV lamp | | | |
| | Replace carbon filter | | | |
| | Check piping is operational and maintained | | | |

4.3 Equipment details

Equipment records

| Part / Equipment | Manufacturer | Supplier/Repairer Contact Details |
|------------------|----------------------------|-----------------------------------|
| UV equipment | | |
| Filters | | |
| Laboratory | Result Laboratory Services | 0414 444 444 |

Note 1: Manufacturer's instructions are held by caretaker

4.4 Sign posting

Signs

| Sign location | Sign wording | Permanent or Temporary | Inspection Date | Any action taken |
|---|--------------|------------------------|-----------------|------------------|
| 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 |
|-------------------------|--|---------------------------|-----------------------------|---|
| <i>Water quality</i> | <i>Daily</i> | <i>Managers residence</i> | <i>Manager</i> | <i>Visual inspection Taste</i> |
| <i>Pressure</i> | <i>Daily</i> | <i>Managers residence</i> | <i>Manager</i> | |
| <i>E. coli</i> | <i>Monthly</i> | <i>Managers residence</i> | <i>Manager</i> | <i>See sampling procedure from laboratory</i> |

4.6 Water quality monitoring results

Water testing results

| Date | Where test was taken from | Type of test taken | Test Result | Any action taken | Person Responsible |
|------|---------------------------|--------------------|-------------|------------------|--------------------|
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4.7 Incident records

If incidents, issues or emergencies occur that impact on the water quality, record what happened and what was done to rectify the situation. Include any customer complaints about water quality.

Issue / Incident / Emergency Record

| Date | Incident | Notes and corrective actions | Person 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
- in response to a failed water quality test
- 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 |
|--|---|
| Low pressure/Dirty water | <ul style="list-style-type: none"> • Inspect filters and clean • Check lines • Contact Public Health Unit for advice • Sign post all outlets that water not to be used for drinking, food preparation or consumed when cleaning teeth • Use bottled water for drinking, food preparation and cleaning teeth • Test water for <i>E. coli</i> • Check incoming water quality • Use of fire pump |
| Power failure | <ul style="list-style-type: none"> • Bottled water to be provided to guests for drinking, food preparation or consumed when cleaning teeth • Buckets used for toilet flushing |
| UV system failure | <ul style="list-style-type: none"> • Investigate problem: clean lamp, replace lamp • Contact Public Health Unit for advice • Sign post all outlets that water not to be used for drinking, food preparation or consumed when cleaning teeth • Use bottled water for drinking, food preparation and cleaning teeth |
| Positive <i>E. coli</i> test | <ul style="list-style-type: none"> • 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 and cleaning teeth • Re test water for <i>E. coli</i> |
| Complaint about water taste/odour/colour | <ul style="list-style-type: none"> • Flush taps • Inspect system from source to tap to check for treatment failures or breakages • Bottled water to be provided to guests for drinking, food preparation or consumed when cleaning teeth |

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 |
| NSW Algae Hotline | NSW Office of Water | 1800 999 457 |
| Bottled Water Supplier | Wet Water bottled water supplier | 0414 444 444 |