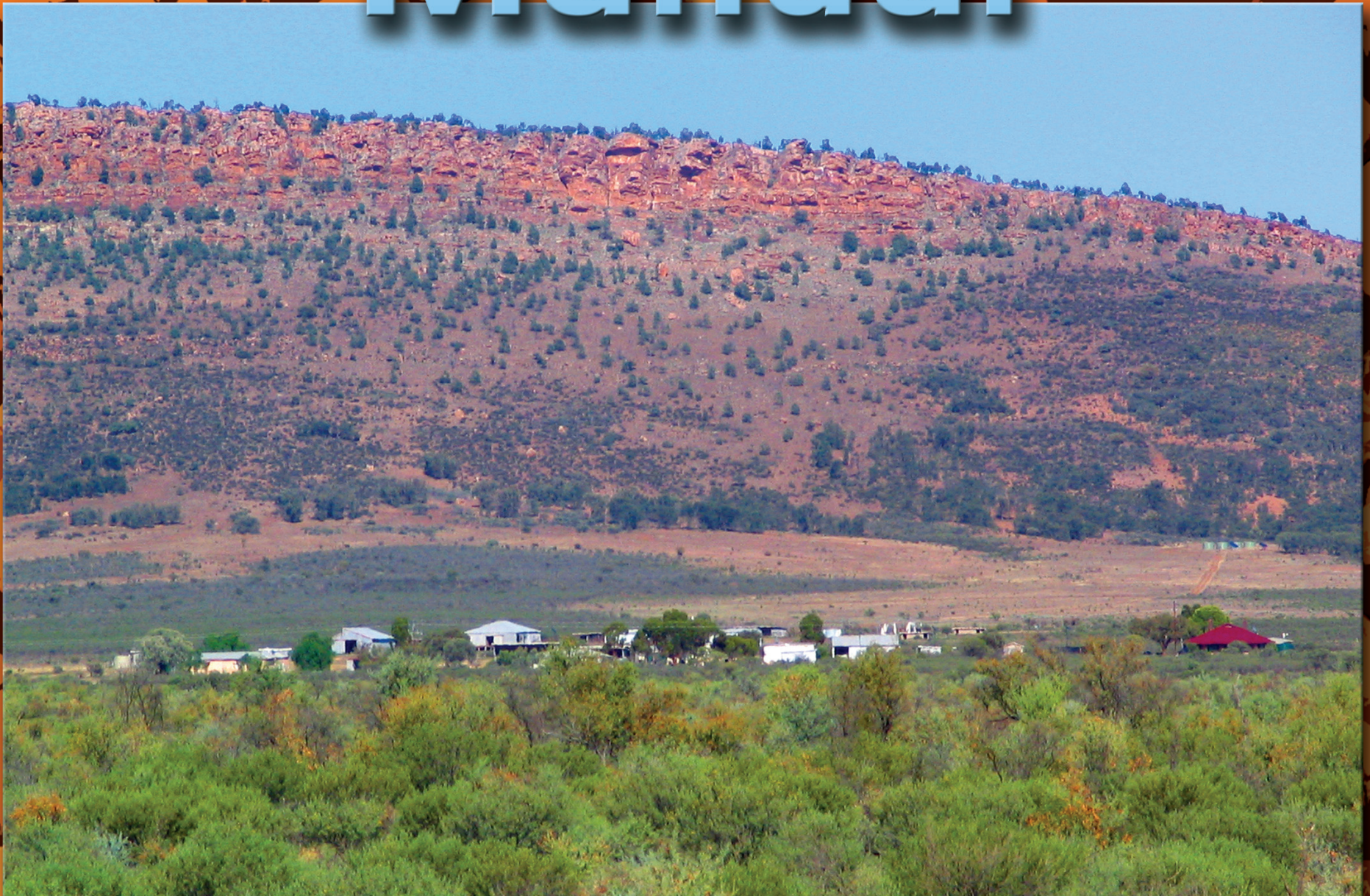


Yappala Water Supply Manual



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For additional information please contact

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The Desert Knowledge Cooperative Research Centre (DK-CRC) is an unincorporated joint venture with 24 partners whose mission is to develop and disseminate an understanding of sustainable living in remote desert environments, deliver enduring regional economies and livelihoods based on Desert Knowledge, and create the networks to market this knowledge in other desert lands.

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www.desertknowledge.com.au/crc

FaCSIA:

The Department of Families, Community Services and Indigenous Affairs (FaCSIA) is the Government's principal source of advice on social policy issues. We also have responsibility to effectively and efficiently manage a diverse range of programs and services to improve the lives of Australians. Our whole-of-government approach brings with it many opportunities to build effective relationships with other government and non-government organisations.
www.facsia.gov.au

CAT:

The Centre for Appropriate Technology is Australia's national Indigenous science and technology organisation. We work to increase the access of Indigenous people to a range of technical services that enable them to live safely and happily in communities, often in remote locations.
www.icat.org.au

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Australian Government

**Department of Families, Community Services
and Indigenous Affairs**



Yappala System Schematic July 2006



BORE

91 metres deep.
Full length cased with PVC pipe.
150mm internal diameter Uncapped yield of 30 litres per min.
Electric submersible pump with solar power.



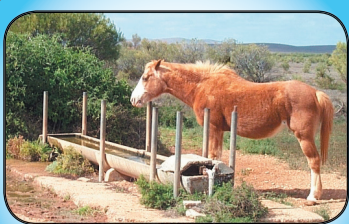
SOLAR PANELS AND STORAGE TANKS

Two self tracking solar panels.
Four 27 000 litre poly tanks.
Float valve (to measure water level) is in the second tank.



SLAUGHTERHOUSE

19 000 litre poly tank with pressure pump.



STOCK TROUGH



EXTERNAL TAP

Feeds stock trough.
Underground rainwater tank (outside tap).



PRESSURE PUMP



RAINWATER TANK

Connected to house (outside tap).



RAINWATER TANK

15 000 litre (outside tap).



RAINWATER TANK

19 000 litres piped to kitchen.

Yappala Water Supply Hazards and Rectifications July 2006



BORE

Protect bore with concrete slab.
The slab should be 2 metres in diameter
and slope away from borehead.
Seal tank overflows with screens.
Keep tank lids fixed in place.



SOLAR PANELS AND STORAGE TANKS

Fit a valve to end tank to control storage if
necessary.
Keep pipes to slaughterhouse buried.
Stop cars driving along pipeline.
Mark pipeline to slaughterhouse
with star pickets.
Fix any leaks in pipes.



SLAUGHTERHOUSE

Seal tank overflow with screens.
Keep tank lid fitted securely.
Clean up after butchering animals.
Wash area with water and keep hose
hung up off the ground.



STOCK TROUGH

The trough overflows
because float valve is broken.
Replace valve and cover.
Check trough for leaks and
seal any cracks with epoxy
paint or similar.



RAINWATER TANK

Seal overflows with screens.
Keep tank lid fitted securely.
Clear roof area and gutters.



SEPTIC TANK

The tank overflows when it is overloaded.
Keep hose nearby hung up off the ground.
Sewage may get drawn into water pipes if it is
left on the ground.

The tank should be emptied frequently
particularly after many people have stayed in
the house.



RAINWATER TANK

Seal tank overflows with screens.
Keep tank lids fitted securely.
Clear roof area and gutters.



RAINWATER TANK

Seal tank overflows with screens.
Keep tank lids fitted securely.
Clear roof area and gutters.



TAP

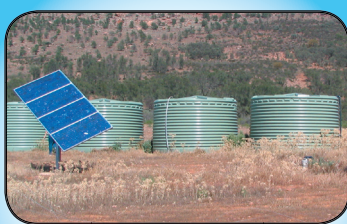
Tap pops out of the ground and should
be fixed to a star dropper or similar.
Replace fitting.

Yappala Water Supply Weekly and Monthly Checks



BORE

Check fencing is intact.
Keep livestock and wild animals away from the borehead.
Check water storage capacity (tanks holding water).
Look for any water leaks.
Check screens and lids are in place and intact.



SOLAR PANELS AND STORAGE TANKS



SLAUGHTERHOUSE

Check the tank water level is more than half full.
Look for any water leaks.
Check screens and lids are in place and intact.



STOCK TROUGH

Check trough for leaks.



PRESSURE PUMP

EACH MONTH: Check pressure pump for operation.
Flush out any sand or debris.



RAINWATER TANK

Check water level.
Look for any water leaks.
Check that tank lid and screens are fitted securely.
Clear roof area and gutters.



NOTE FOR ALL HOUSES:

Look for any leaks in all taps, showerheads and toilets.
Check for any pooling of water around houses.



RAINWATER TANK

Check water level.
Look for any water leaks.
Check that tank lid and screens are fitted securely.
Clear roof area and gutters.



RAINWATER TANK

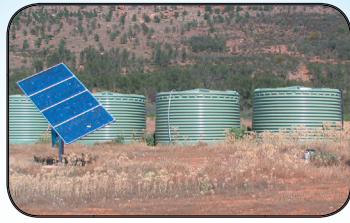
Check water level.
Look for any water leaks.
Check that tank lid and screens are fitted securely.
Clear roof area and gutters.



Yappala Water Supply Monthly and Yearly Checks



BORE



SOLAR PANELS AND STORAGE TANKS

Wash dust from solar panels.
Check operation of solar panels and all electrics are free of cobwebs, corrosion etc.
If any obvious repairs are required contact a licensed electrician.
Check operation of float valve in tank 2.



SLAUGHTERHOUSE



STOCK TROUGH



PRESSURE PUMP



POWERBOX

Check box is clean of cobwebs and corrosion.
If any obvious repairs to switches are required call a licensed electrician.



RAINWATER TANK



ALL HOUSES
Check and maintain hot water services.



RAINWATER TANK



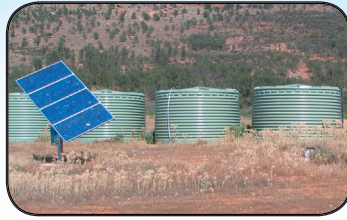
RAINWATER TANK

Yappala Water Supply Special Events and Emergencies



BORE

After earth tremor or after a big rain event check around bore.



SOLAR PANELS AND STORAGE TANKS

After earth tremor or a big rain event, check operation of solar panels and all electrics are free of cobwebs, corrosion etc. If any obvious repairs are required contact a licensed electrician.
Check operation of float valve in tank 2.
Check pipeline to slaughterhouse for leaks and any places where it is uncovered.



SLAUGHTERHOUSE



STOCK TROUGH



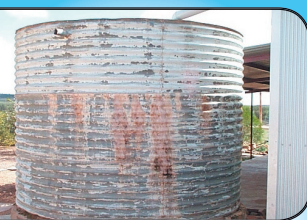
RAINWATER TANK

People are making complaints:
1. Boil water or
2. Disinfect tank with chlorine or bleach.



SEPTIC TANK

Tank should be emptied regularly.



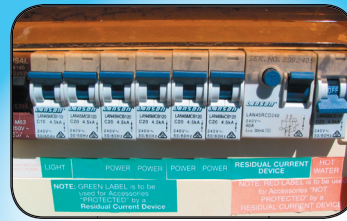
RAINWATER TANK

If people are making complaints:
1. Boil water or
2. Disinfect tank with chlorine or bleach.



RAINWATER TANK

If people are making complaints:
1. Boil water or
2. Disinfect tank with chlorine or bleach.



POWERBOX

In case of power failure or no water pressure:
1. Check circuit breakers.
2. If circuit breakers not tripped turn manual bypass valve to close valve when power is back on.



PRESSURE PUMP



ALL HOUSES
Only use pesticides or herbicides in calm days. Spot spray to prevent any chemicals or residues from getting onto roofs and into rainwater tanks.

What to do if you have no water pressure at Yappala Community



No water pressure?

Has the slaughterhouse tank got water in it?

NO

Check bore and bore tanks.

YES

Is mains power switch in the 'up' position at slaughterhouse power board?

NO

Turn on switch.

YES

Is the residual current device switch in the 'up' position on the power board?

NO

Turn on switch.

YES

Is power to pressure pump on at the wall?

NO

Turn on switch at wall.

YES

Is the wiring in good condition?

NO

Call plumber or electrician, or community member.

YES

Is the pump pressure switch set at the correct level?

NO

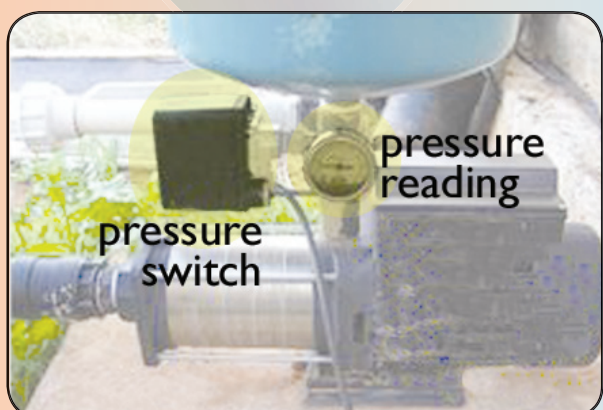
Reset pressure switch to 200-300 kPa.

YES

Is there still no water pressure?

NO

Call plumber: Smulders



Chlorinating your Water Tank

You may want to chlorinate your water tank if:

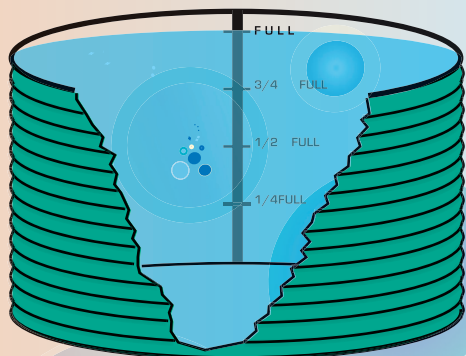
- A new tank has been installed.
- People are complaining that the water may have made them sick or a dead animal has been found on the roof or in the tank.
- There has been a special event like maintenance – such as emptying sludge from bottom of a tank.

Regular chlorination of the tank should not be necessary.

Follow these steps:

- Determine how much water is in the tank. Measure the water level in the tank. The size of the tank is in the community water manual.
- **Note:** when dealing with chlorine or bleach ensure you are wearing rubber gloves and goggles to protect you eyes.
- Determine the amount of chlorine or bleach needed. For every 1000 litres of water in the tank use approximately 40 ml of liquid pool chlorine or 125 ml of bleach.
- **IMPORTANT:** use a *non perfumed chlorine* bleach such as White King. Do not use stabilized pool chlorine or tablets (chlorine cyanurates).
- Dilute the chlorine/bleach in a bucket. **Note:** ALWAYS ADD THE CHLORINE TO THE WATER NOT THE WATER TO THE CHLORINE!
- Use a jug or similar to spread the chlorine or bleach across the whole surface of the tank using a casting motion to ensure it is distributed evenly.
- Stir the tank (if possible) to mix in the chlorine/bleach.
- Let stand for about 24 hrs.
- Test the water in the tank using pool chlorine test strips. If it turns pale pink it is OK. If it turns purple, wait 12 hours and retest. Keep testing until the test strip turns pink.

Example for 19,000 litre rainwater tank:



Amount of water in the rainwater tank:

Full (19,000 litres)

Height of water level:

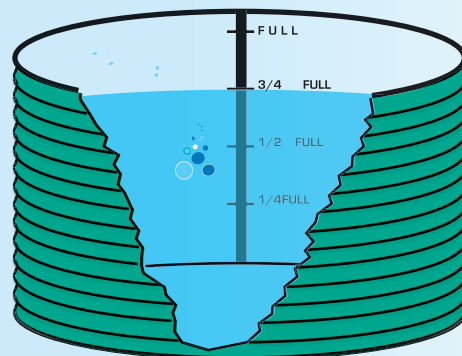
2.5m

Amount of pool chlorine to use:

760 ml (approx 3 cups)

Amount of bleach to use:

2.375 litres (approx 1 bottle and a cup)



Amount of water in the rainwater tank:

Three quarters full (14,250 litres)

Height of water level:

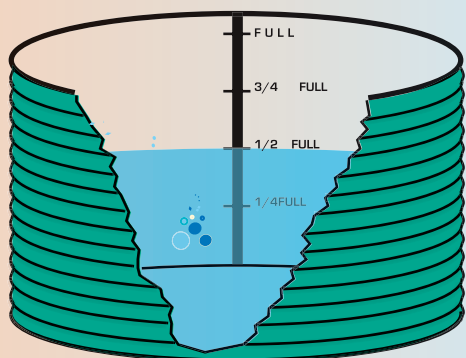
1.95m

Amount of pool chlorine to use:

570 ml

Amount of bleach to use:

1.8 litres



Amount of water in the rainwater tank:

Half full (9,500 litres)

Height of water level:

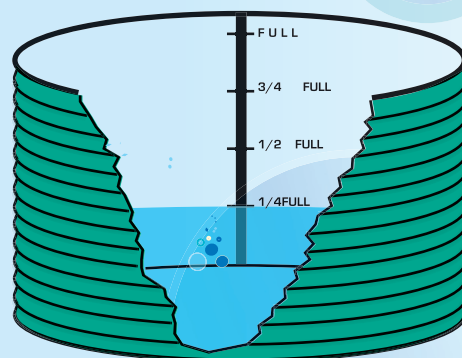
1.3m

Amount of pool chlorine to use:

380 ml

Amount of bleach to use:

1.2 litres



Amount of water in the rainwater tank:

Quarter full (4750 litres)

Height of water level:

65cm

Amount of pool chlorine to use:

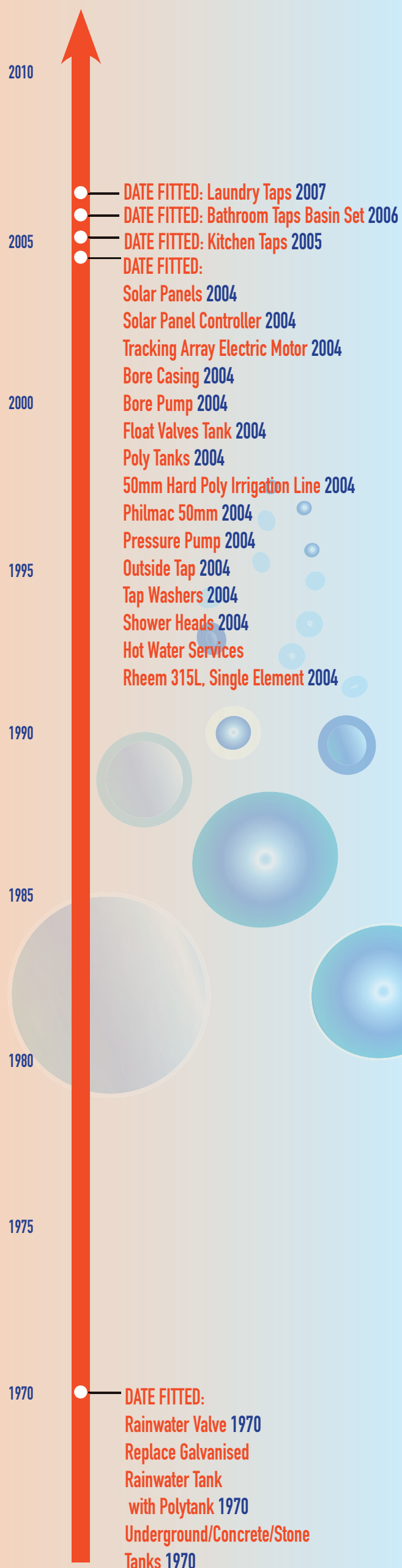
190 ml

Amount of bleach to use:

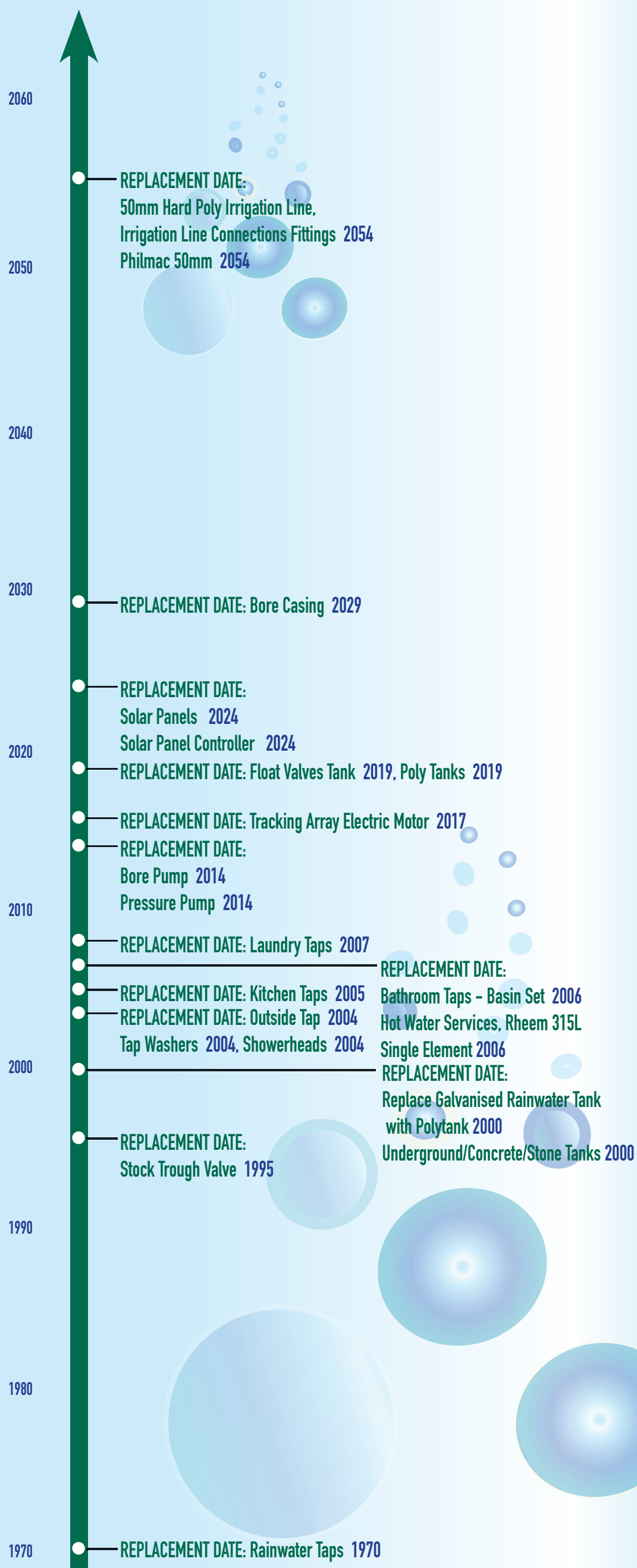
588 ml (approx 2 cups)

When Parts were Fitted/Anticipated Replacement Dates

When Parts were Fitted



Anticipated Replacement Dates



When Parts Were Fitted/Anticipated Replacement Dates

Fixture	Quantity	Date fitted	Operational lifespan (years)	Anticipated replacement date	Approx replacement cost	Comments
Solar panels	2	2004	20	2024	\$20,000.00	
Solar panel controller	2	2004	20	2024	\$100.00	
Tracking array electric motor (1 HP)	2	2004	13	2017	\$220.00	cost to rewind and overhaul
Bore casing	60m deep	2004	25	2029	\$66/m	
bore pump	1	2004	10	2014	\$1000-\$2800	TBC
float valves-tank	2	2004	15	2019	\$45.00	
Polytanks	6	2004	15	2019	\$3,000.00	
50m hard poly irrigation line	2000m?	2004	50	2054	\$3.10/m	cost per metre
Irrigation line connections fittings Philmac 50mm	30?	2004	50	2054	\$20-\$35	varies on type of connection
Pressure pump	1	2004	10	2014	\$1,300.00	
Stocktrough float valve	1	1980	15	1995	\$45.00	
Outside tap	9	2004		2004	\$11.77	per tap (half inch, brass)
Kitchen taps	14	2005		2005	\$75.00	to replace 2 taps
Bathroom taps-basin set	14	2006		2006	\$117.70	basin set-2 taps and spout
Laundry taps	14	2007		2007	\$75.00	to replace 2 taps
Rainwater taps	6	1970		1970	\$11.77	per tap (brass)
Tap washers	57	2004		2004	\$0.50	
Showerheads	6	2004		2004	\$48.29	9L/minute with inbuilt restrictor
Hot water services	7	2004	2	2006	\$1,119.00	"Rheem single element 315 Litres serves 4-6persons"
"Galvanised rainwater tanks Replace with polytank"	2	1970	30	2000	\$3,000.00	
Underground/ concrete/stone tanks	1	1970	30	2000	unknown	varies with tank size, type and location

Contact Details

Agency	Details	Contact Number
SA Health Department	Department of Environmental Health	(08) 8226 7107
Local Council	Flinders Ranges Council 1 Seventh Ave, QUORN SA 5433	(08) 8648 6031
SA Water	General Queries Hotline, Adelaide	1800 650 950
Police	Hawker Police	(08) 8648 4028
Fire	Hawker CFS Emergency number	(08) 8648 4065
Ambulance	SA Ambulance, Hawker Volunteer Station	000
Yartawarli	Yartawarli Aboriginal Corporation Resource Agency 52 Arkaba St, Hawker	(08) 8648 4047
Philip Stuart	Hawker	(08) 8648 4303
Smulders Electrical Contracting	30 Elder Tce, Hawker	(08) 8648 4020

