

# Reservoir Awareness and Responsibilities

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Aqualift Project Delivery Pty Ltd  
2014



# Where to start...

Knowing how your distribution system works

Managing the CCP's

Reservoirs are a key part of the drinking water supply

– re-contamination can occur!

Inspections conducted regularly

-The obvious and not so obvious

# Ensuring water safety

- Guaranteed supply
- Best quality
- And safe to drink

Aim -> Eliminate contamination entry

- Maintenance
- Re-design
- Effective renovations for long term outcomes

# Boil water notice

## Dead possum infects water supply

AAP • NOVEMBER 08, 2013 11:36AM

1



A dead possum has contaminated the water supply of [redacted] Source: News Limited

**A DEAD possum is wreaking havoc with water supplies in a Queensland town.**

*“Residents have been warned to boil drinking water after a marsupial was discovered in the local reservoir”*

Common quote..

*“Our water meets all the guidelines as it leaves the treatment plant”*

Aim..

*“Our water is safe to drink at the customers tap”*

# Inspections

The inspection process....

-not just from the ground!

- The 'usual' contamination points
- Entry hatch & platform
- Roof area
- Evidence within the tank
- Under the water line





# Vandalism – ‘ROL’ risk rating!







# Obvious contamination..

Faecal material from

- Bird & animal

Dirt and debris

- Any dust, leaf litter & 'dead' bits

Drainage from roof & platform area

Other materials that consume chlorine













# Not so obvious...





















Drainage into tank



# Bucket of Water Test



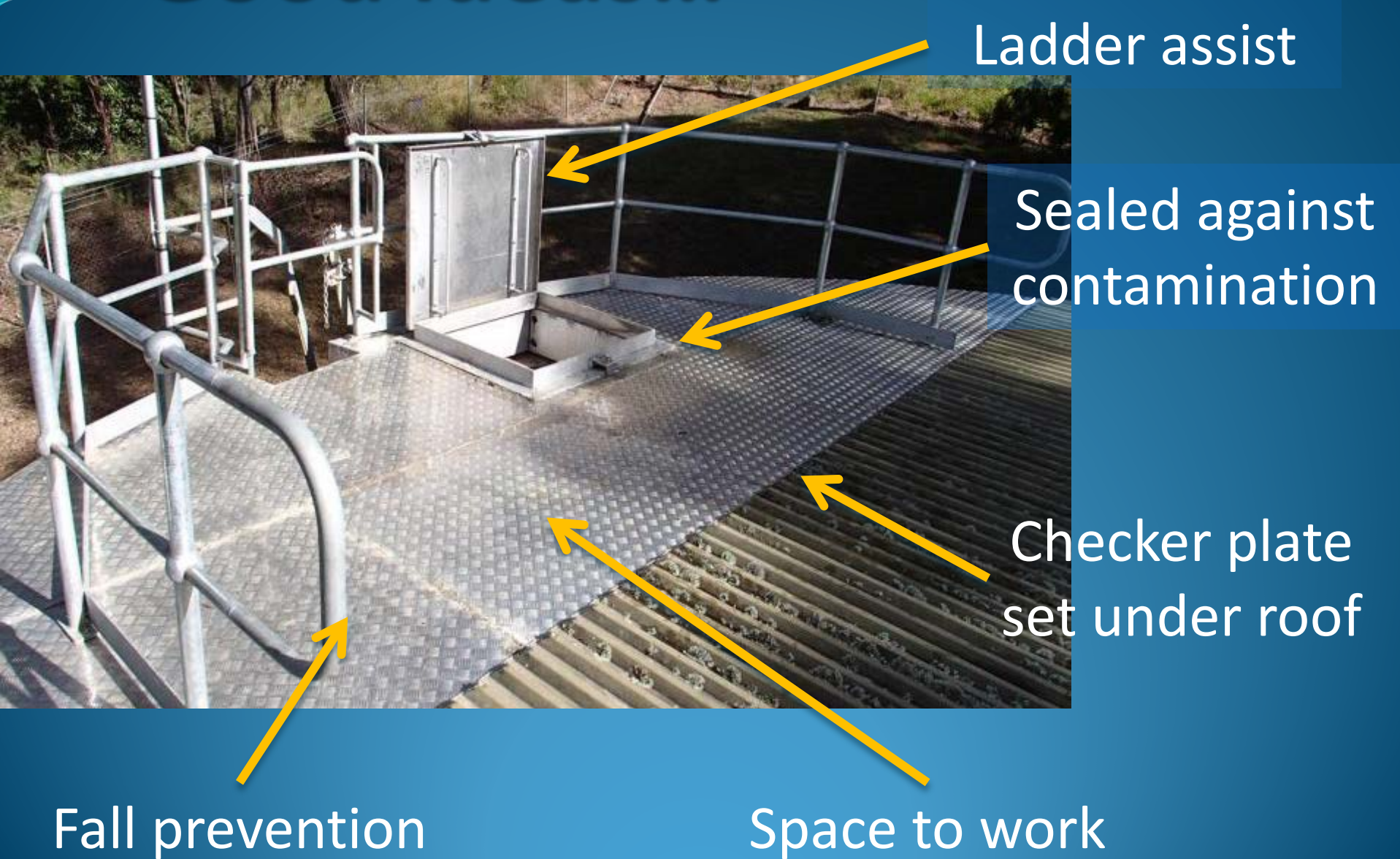


# Evidence...





# Good ideas...



# Entry hatch re-design



# Roof design good - no flashings, simple and effective



# Security & Access improved



Additional  
working space

Safe to climb

Easy to secure



# Document & take action...

Record the evidence

- Photos
- Site check sheets



Replace defective areas

- Entry hatches /platforms /vents /roof defects  
/corroded ladders & pipework

Schedule regular inspections & repairs

# Asset Information



Client Asset Search Attachments Reports Config Maintenance Aqualift

Client Name: All State City Council

## Reservoir Details

Reservoir Hill No2

## General Details

General

Cleaning  
Safety  
Mixer C.P.  
Penetrations  
Valuation  
Comments

## External Inspection

General  
Condition  
Coatings  
Renovations  
Comments

## Internal Inspection

General  
Condition  
Coatings  
Renovations  
Comments

## Attachments

View Images  
Insert Image

## Contractors

Contractor Roles

## Actions

Project System  
Project Images  
General Projects  
Maintenance Cal.

## Help

Help  
FAQ

Reservoir Name	Reservoir Hill No2		
Client	All State City Council		
Inspection Date	17/06/2011		
VVS #	0		
Project Number	0		
Asset Number	0		
Job Number	024544		
Location	off Reservoir Hill Rd		
Map Datum Standard	VVG S 84		
Co-Ord 1	\$ 28 05 585	E 152 45 268	
Co-Ord 2			
Environment Type	Semi Rural		

General details

External details

Cleaning and Inspection			
Next Clean Due	21/09/2008	Next Inspection Due	17/06/2015
Details			
Construction Wall	Concrete	Construction Floor	roof
Shape	OnGround	Depth (M)	
Length (M)	0.00	Breadth (M)	0.00
Floor Area (sq m)	0.00	Capacity (ML)	3.00
Commissioned	31/08/1965	Service Life (Years)	80
Heritage listing	Unknown		Years to Run
Valuation (A\$)	-		

Internal details

Photos

Benchmarks	
3 Security	3 Safety
0 Contamination	2 Confined Space
2 CoF OH&S	
Comments:	
Security	There is no secure compound around the tank and there has been some dumping activities around the site.
Contamination	There is a history of dead possums inside the tank. They are entering under the platform area, where it sits on the concrete wall.
Safety	There is a cage on the ladder.
Confined Space	A confined space rescue would be difficult to carry out.
CoF Water Quality	This tank needs to have the platform area sealed off and be cleaned as a priority.
CoF OH&S	The ladder cage needs to be removed to improve access safety.

# External Condition

## Reservoir Details

Reservoir Hill No2

## General Details

General  
Cleaning  
Safety  
Mixer C.P.  
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Valuation  
Comments

## External Inspection

General  
**Condition**  
Coatings  
Renovations  
Comments

## Internal Inspection

General  
Condition  
Coatings  
Renovations  
Comments

## Attachments



























View Images  
Insert Image

## Contractors

Contractor Roles

## Actions

Project System  
Project Images  
General Projects  
Maintenance Cal.

Project Management System	Area Inspected	P Rating	Status	Comments
	Compound	 2	F	There is a compound around the external ladder, but it will not keep out determined persons - there has been dumping activity around the site so regular checks are required
	Vandalism	 3	F	Graffiti is an ongoing problem with this site, as it is used as a parking and dumping area
	Walls	 2	A	There is concrete spalling under three of the rafter connection areas - a more detailed structural inspection should be carried out and repairs made as necessary
	Ladder External	 4	D	Appears to be in good order
	Entry Hatch	 1	A	The hatch cover is sealed but the roof is draining in under the hatch frame area, where the roof sheets join the platform
	Roof Platforms	 1	A	There is an open area under the platform where it sits on top of the wall - this needs to be sealed off ASAP to stop possums from entering the tank
	Walkways	 Na	Na	No Comment
	Roof	 1	A	Water is ponding and draining back into the tank, where the roof joins the entry hatch frame - a gutter flashing needs to be fitted to drain the water away
	Roof Hatches	 Na	Na	No Comment
	Handrails	 4	D	Appears to be in good order
	Davit	 Na	Na	There is no davit fitted
	Ventilation	 4	D	Appears to be in good order
	Bird Proofing	 0	A	Possums have been entering this tank on a frequent basis - the area under the platform, where it sits on top of the wall has been identified and needs to be sealed off ASAP

# Images & Documents

## Reservoir Details

Reservoir Hill No2

## General Details

General  
Cleaning  
Safety  
Mixer C.P.  
Penetrations  
Valuation  
Comments

## External Inspection

General  
Condition  
Coatings  
Renovations  
Comments

## Internal Inspection

General  
Condition  
Coatings  
Renovations  
Comments

## Attachments

**View Images**  
Insert Image

## Contractors

Contractor Roles

## Actions

Project System  
Project Images  
General Projects  
Maintenance Cal.

## Installed Attachments

SELECT	FILENAME	COMMENT	EDIT	DELETE
 <input type="checkbox"/>	4943 Disinfection site	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Entry hatch	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Inlet outlet screen	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Inlet outlet screen close up	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder base corroded	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder base debris	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder cage	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder cage corroded	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder external	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>
 <input type="checkbox"/>	4943 Ladder platform	No Comment	<a href="#">Edit</a>	<a href="#">Delete</a>

# Reports



Client

Asset

Search

Attachments

Reports

Config

Maintenance

Aqualift

Logout

Client Name: All State City Council

User Name: jillasam49

## Reservoir Reports

- General
- Analysis
- Benchmarks
- Critical Maint.
- Maintenance
- Rating Summary
- Safety & Security
- Structural
- Exec. Summary
- Project Reports
- Tank Inspection

## Project Recording

- Project Rep.
- Project Status

## Overview

- Overview

Please select an Asset Type and Client for the report.

Asset Type

Reservoir  Tank  Aqueduct  Pump

Client

All State City Council

Select All

Clear Selections

High St No1

Reservoir Hill No1

Reservoir Hill No3

Reservoir4 Bourke

High St No2

Reservoir Hill No2

# Reservoir Safety and Security Report



26/04/2014

## All State City Council

Reservoir Name	Security	Contamination	Safety	Confined Space	Comment
High St No1	1	1	2	2	There is no secure compound around the tank The entry hatch is not secure against unauthorized access and contamination events can easily occur. Guard rails are required around the platform area. The internal ladder is heavily corroded and unsafe to use in a confined space entry or rescue situation.
High St No2	4	2	4	4	The kick plates are allowing debris and water ponding to occur
Reservoir Hill No1	4	0	2	2	The roof gutter is unsealed and full of leaf debris - the entry hatch area is also unsealed around the edges. The asbestos roof is not safe to walk on and unauthorised persons could fall through it and into the tank. There is no solid area on the roof to set up a rescue system.
Reservoir Hill No2	3	0	3	2	There is no secure compound around the tank and there has been some dumping activities around the site. There is a history of dead possums inside the tank. They are entering under the platform area, where it sits on the concrete wall. There is a cage on the ladder. A confined space rescue would be difficult to carry out.
Reservoir Hill No3	4	1	2	2	The entry hatch frame does not have a sealed front edge – natural or deliberate contamination events can occur. The internal ladder system needs to be upgraded to improve the safety of the personnel using it. A confined space entry or rescue situation would be difficult to carry out.

# Reservoir Critical Maintenance Priorities Report



26/04/2014

Date:	17/06/2011	Client Name:	All State City Council
WS #:	0	Reservoir Name:	Reservoir Hill No2
Asset No:	MA 01	Location:	off Reservoir Hill Rd
Job No:	024944	Project Number:	0
Cleaning Due:	21/9/2008	Inspection Due:	17/6/2015

## External

Area	Priority	Status	Comments
Compound	2	F	There is a compound around the external ladder, but it will not keep out determined persons - there has been dumping activity around the site so regular checks are required
Walls	2	A	There is concrete spalling under three of the rafter connection areas - a more detailed structural inspection should be carried out and repairs made as necessary
Entry Hatch	1	A	The hatch cover is sealed but the roof is draining in under the hatch frame area, where the roof sheets join the platform
Roof Platforms	1	A	There is an open area under the platform where it sits on top of the wall - this needs to be sealed off ASAP to stop possums from entering the tank
Roof	1	A	Water is ponding and draining back into the tank, where the roof joins the entry hatch frame - a gutter flashing needs to be fitted to drain the water away
Bird Proofing	0	A	Possums have been entering this tank on a frequent basis - the area under the platform, where it sits on top of the wall has been identified and needs to be sealed off ASAP

## Internal

Area	Priority	Status	Comments
Walls	2	A	Three areas of external spalling were noted where the rafters sit on top of the

# Preventive Vs Reactive



Thankyou