

Taroom Reservoir Cleaning report 2021

Structure ID:	<input type="text"/>	MED File Ref No:	<input type="text" value="2015-03-1"/>
Structure Type:	<input type="text" value="Reservoir"/>	Mobilisation Date:	<input type="text" value="23.03.2015"/>
Asset Name:	<input type="text" value="Theodore Water Treatment Plant"/>	Completion Date:	<input type="text" value="24.03.2015"/>
Waterway Name:	<input type="text" value="N/A"/>	Dive Supervisor:	<input type="text" value="Lance Williams"/>
Asset Owner:	<input type="text" value="Banana Shire Council"/>	Inspection Depth:	<input type="text" value="3.5 m"/>
District:	<input type="text"/>	Address:	<input type="text" value="2 Eidsvold Theodore Road
Theodore Q 4719"/>
Local Authority:	<input type="text" value="Banana Shire"/>	Latitude:	<input type="text" value="24.57900"/>
Authorizing Officer:	<input type="text" value="Mr Miguel Escobar"/>	Longitude:	<input type="text" value="150.44107"/>



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1. ASSET DESCRIPTION

2.1 ENTRY					
Security Fencing:	Yes	Height:	2.4	Length:	Na
Sec Fence Type:	Chain mesh Facility is within the Theodore Water Treatment plant compound.				
Gates:	Yes	Lock / Padlock:	Yes	Grounds:	Lawn
CCTV:	No	Qty:	Na		

2.2 RESERVOIR					
Construction wall:	Concrete	Construction Floor:	Concrete	Construction Roof:	Gal C sections and iron roof
Shape:	Round	Depth:	3.5 m	Diameter:	21.4m
Floor Area:	359.6 m2	Capacity:	1.3 ml	Water Depth:	3.0 m
Additional:					

2.3 ADDITIONAL ASSETS					
External Ladder:	Gal ladder vertical with safety cage Padlock on ladder access.			Length:	4.6m
Internal Ladder:	Yes			Length:	3.4m
Confined Space:	Yes	Davit:	No	Davit Type:	No
Hatch:	Metal.			Hatch Lock:	No
Hatch Condition:	10/ 10			Opening Size:	800mm x 800mm
Handrails:	No	Length:	Na	Handrail height:	Na
Handrail Type:	Na				

2. External Inspection

AREA	STATUS	RATING / 10	COMMENTS	REF:
Compound	Na	Na	Reservoir forms part of Water treatment plant.	TWTP1-1
Coatings	Na	Na	No comment	
Vandalism	D	10	Appears to be in good order	
Walls	D	10	Appears to be in good order	TWTP1-1
Ladder External	D	10	Appears to be in good order	TWTP1-2
Entry Hatch	A	5	Entry hatch was not locked.	TWTP1-3
Roof Platforms	D	10	Appears to be in good order	
Walkways	Na	Na	No Comment	
Roof	A	5	Central gutter does not filter water away from roof and high rain events will spill over into reservoir.	TWTP1-4
Handrails	A	1	There are no handrails	
Davit	Na	Na	There is no davit.	
Ventilation	D	10	Appears to be in good order	
Bird Proofing	A	5	Refer Roof comments.	
Electrical	Na	Na	No comment	
Level Indicator	Na	Na	No comment	
Others:				

Status A – Attention required

Status F – Item to be reassessed

Status D – Item to be deferred until next inspection

3. Internal Inspection

AREA	STATUS	RATING / 10	COMMENTS	REF:
Walls	D	10	Appear to be in good order	
Columns	D	10	Appear to be in good order	
Coatings	Na	Na	No Comment	
Roof	D	8	Number of bolts and support spacers on roof underside are starting to show signs of corrosion.	TWTP1-7 1-7a
Floor	D	10	Appears to be in good order	
Inlet	D	7	Minor rust	
Outlet	D	7	Minor rust	
Overflow	A	5	Overflow is heavily corroded and future maintenance should include replacement.	TWTP1-8
Supports	Na	Na	No comment	
Ladder Internal	A	5	Ladder has minor corrosion however fixings are rusted and require replacement.	TWTP1-5 TWTP1-6
Other:				

Status A – Attention required

Status F – Item to be reassessed

Status D – Item to be deferred until next inspection

Summary of Findings:

1. Roof support
 - Minor rust on number of bolts and support spacers of roof framing.
2. Internal ladder
 - The internal ladder is showing signs of corrosion however fixings are rusted. Recommend replacement with HDPE ladder and 316 stainless steel fixings.
3. Overflow
 - The Overflow pipe is heavily corroded and future maintenance should allow for its replacement.
4. Roof Gutter
 - Central gutter does not filter away water and high rain events as seen whilst on-site on 23.03.2015 provided large volume of water from roof directly into reservoir water supply.

5. CLEANING SCHEDULE

Water Depth:	3.0 m	Water Clarity:	20%
Deposit type:	Lime	Silt level average:	600mm
Sample reference:	Supplied 2 x sediment samples Supplied 1 x water samples (Free Chlorine test completed = "0.30")		
Comments:			
<ul style="list-style-type: none"> - Nominated sediment from previous report = 600mm (210 m3) - Sediment depth was as above, lime and extremely dense in nature. - No additional foreign objects were found in reservoir. - Due to the large amount of lime sediment photographs were difficult to obtain as scraping the base layer was required for removal. - Additional works included installation of plug and retrieval device so change out of scour valve could be completed on 24.03.2015. The initial attempt to complete task was not successful due to the fact that the plug supplied was too large for pipe and the process was duplicated on the following day. 			
Chlorine testing:			
<ul style="list-style-type: none"> - Free Chlorine testing was completed after completion of cleaning with the result being "0.30". Test was completed on day two after a considerable rain event the previous night. - Water depth 3.0m. - Sodium Hypochlorite was added to increase level to 0.5. 			

6. PHOTOGRAPHS and SKETCHES Record List

Reference	Component	Details
TWTP1-1		Theodore WTP
TWTP1-2		Entry ladder
TWTP1-3		Entry hatch
TWTP1-4		Roof
TWTP1-5		Internal ladder
TWTP1-6		Ladder fixings
TWTP1-7		Roof inside
TWTP1-7a		Roof underside access
TWTP1-7b		Roof support corrosion
TWTP1-8		Overflow riser
TWTP1-9		Clean unclean
TWTP1-9a		Clean unclean 2
TWTP1-10		Additional photos

Theodore Reservoir Cleaning report 2021

Structure ID:	Taroom WTP			Client:	Banana Shire Council						
Structure Type:	Reservoir			Contact:	Miguel Escobar						
Construction Type:	Concrete			Owner:	BANANA SHIRE COUNCIL						
Inspection Type:	Clean & Inspect			Asset Location:	6 Cranmar Street, TAROOM, Qld						
Inspector:	J Pearson C Huckauff			Lat Long:							
Inspection date:	Saturday 28 th August 2021			Report No.:	1423-2021-15						
Inspection Level 1	<input checked="" type="checkbox"/>	Inspection Level 2	<input type="checkbox"/>	Inspection Level 3	<input type="checkbox"/>	Exceptional	<input type="checkbox"/>	Programmed	<input checked="" type="checkbox"/>	Underwater	<input checked="" type="checkbox"/>
Potable Water	<input checked="" type="checkbox"/>	NON Potable Water	<input type="checkbox"/>	Contaminated Diving	<input type="checkbox"/>	Sediment Cleaning	<input checked="" type="checkbox"/>	Samples required	<input type="checkbox"/>	Disinfection	<input type="checkbox"/>



Contents:

1. Asset description and Inventory
2. External Inspection
3. Internal Inspection
4. Cleaning schedule
5. Photographs | Sketches record listing
6. Summary of Findings

1. Asset Inventory and Description

1.1 Entry and Access:

Security Fencing:	Yes	Height:	2.1m	Length:	-
Fence Type:	Galvanised mesh				
Gates:	Y	Lock:	Yes	Grounds:	Lawn / dirt
CCTV:	N	Quantity:	-	Security patrolled:	Unknown
Other:	Forms part or water treatment plant.				

1.2 Reservoir | Tank Specifications:

Construction Walls	Concrete	Construction Floor	Concrete	Construction Roof	Gal C section and iron roof, I beam purlins
Shape	Round	Height	4.9 m, u-side of hatch	Diameter	18.4 m
Floor Area	265.9 M2	Capacity	1.2 ml	Water Depth	1.5 m
Other	- Temperature test on reservoir taken whilst still full after 3 days offline = 36 dc - Temperature test taken after draining reservoir to 1.5m / 2 days offline = 23 dc <i>Refer Pic 1.20</i>				

1.3 Additional Assets:

External ladder	Gal cage vertical ladder with safety cage - New			Length	7.0 m
Confined Space	Y	Signage	N	Restricted access	Y
Davit	N	Davit Type	-	In Service	-
Hatch	Y			Hatch lock	Y
Hatch condition	8/10			Opening size	0.95 m x 1.1 m
Handrails and type	Yes – Gal round pipe			Height of rail	1.050 m
Roof Platform	N	Size	-	Harness anchor points	0
Internal ladder	Y			Length	4.9 m
Other:	-				

2. External Inspection

Area	Status	Rating 10	Comments	Ref:
Compound	D	8	Forms part of Water treatment plant and is well kept.	
Coatings	-	-	No coatings	
Vandalism	D	10	No apparent vandalism on reservoir noticeable.	
Walls	D	8	Appears to be in good order	1.2
Ladder External	D	10	Appears to be recently installed	1.1
Entry Hatch	A	7	- Hatch appears to be in good order	1.3
			- Moderate rust on support frame bracing	1.4
Roof Platforms	D	8	No noticeable issues.	1.3
Walkways	-	-	No walkways.	
Roof	A	4	- Timber frame structure on roof is not fully sealed and external elements can enter reservoir.	1.5
			- Timber frame structure has rot on 90x90 Hardwood post supports.	1.6
			- Rust is noticeable in vicinity of timber frame structure.	1.7
			- There is a galvanised pipe on the roof that is only supported by bricks on iron sheeting with no noticeable bracing to roof support beams.	1.8
			- New pipe penetrations on roof are not fully sealed.	1.9
Handrails	D	8	Appears to be in good order	1.5
Davit	-	-		
Ventilation	D	8	Appears to be in good order	1.5
Bird Proofing	-	-		
Electrical	-	-		
Level Indicator	D	9	Appears to be working	1.1
Others:	A			

Status A: Attention required | Status F: Item to be reassessed | Status D: Item Deferred until next inspection

3. Internal Inspection

Area	Status	Rating 10	Comments	Ref:
Walls	D	7	Exposed aggregate to 75% of internal surface however no noticeable defects.	1.13
Columns	D	8	Appear to be in good order with tea staining on concrete surfaces	1.10 1.11
Coatings	-	-	No coatings	
Roof	A	5	- Moderate rust on girders and column support brackets. - Moderate rust on bolt connections - Moderate / severe rust on box gutter support bracing and sheeting that is hanging.	1.10 1.11 1.12
Floor	D	7	Patches of exposed aggregate to internal surface however no noticeable defects.	1.18 1.19
Ladder Internal	D	8	Tea staining on Stainless steel ladder, however no noticeable defects.	
Overflow	A	5	Moderate/ heavy corrosion to pipework with blistering	1.14
Inlet	A	7	Minor corrosion to pipework	
Outlet	A	6	Moderate corrosion to pipework	
Sediment and foreign material	-	-	250 -300mm Red dirt and rust particles.	1.15 1.16 1.17
Other	-	-	-	

Status A: Attention required | Status F: Item to be reassessed | Status D: Item Deferred until next inspection

4. Cleaning Schedule:

Water Depth:	1.5 m	Water clarity:	40%
Deposit type:	Red dirt and rust particles	Silt level average:	250-300mm
Samples reference:	- Supplied to principle representative		

Comments:




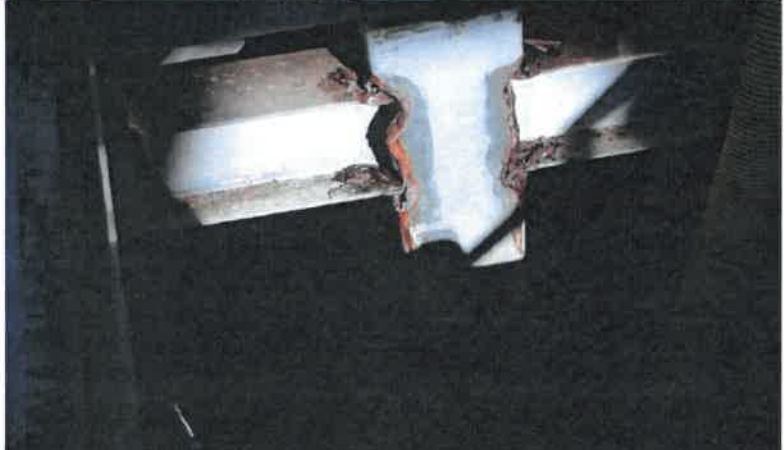
- Sediment consistency was red dirt and rust particles from pipework and box gutter supports.

Chlorine Testing:

- Not required in scope.

Sediment disposal method: Scour| confirmed with principle representative.

5. Photographs and Sketches Record:

Reference:	Component:	ID:	
1-1	Ladder		
Description:			
External ladder			
Reference:	Component:	ID:	
1-2	Walls		
Description:			
External walls			
Reference:	Component:	ID:	
1-3	Hatch		
Description:			
Entry hatch			
Reference:	Component:	ID:	
1-4	Hatch		
Description:			
Moderate rust on support frame bracing			

Reference:	Component:	ID:
1-5	Roof	

Description:

Unknown frame on roof



Reference:	Component:	ID:
1-6	Roof	

Description:

Unknown structure:
 - Not sealed from external elements
 - Rust staining and particles from structure



Reference:	Component:	ID:
1-7	Roof	

Description:

Unknown structure:
 - Hardwood timber supports has extensive moisture and rot.



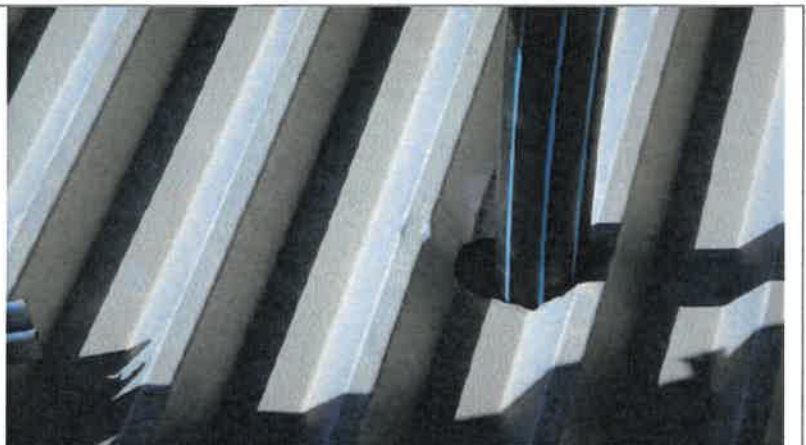
Reference:	Component:	ID:
1-8	Roof	

Description:

There is a galvanised pipe on the roof that is only supported by bricks on iron sheeting with no noticeable bracing to roof support beams.



Reference:	Component:	ID:
1-9	Roof	
Description:		
New pipe penetrations on roof are not fully sealed.		



Reference:	Component:	ID:
1-10	Roof	
Description:		
Moderate rust on girders and column support brackets.		











Reference:	Component:	ID:
1-11	Roof	
Description:		
Moderate rust on girders and column support brackets.		



Reference:	Component:	ID:
1.12	Roof	
Description:		
Moderate / severe rust on box gutter support bracing and sheeting that is hanging.		



Reference:	Component:	ID:	
1.13	Walls		
Description:			
Reference:	Component:	ID:	
1.14	Pipework		
Description:			
Moderate/ heavy corrosion to pipework with blistering			
Reference:	Component:	ID:	
1.15	Sediment		
Description:			
250 – 300mm sediment			
Reference:	Component:	ID:	
1.16	Sediment		
Description:			
Floor – wall joint after cleaning.			

Reference:	Component:	ID:	
1.17			
Description:			
Sediment disposal			
Reference:	Component:	ID:	
1.18	Floor		
Description:			
Clean floor joint			
Reference:	Component:	ID:	
1.19	Floor		
Description:			
Exposed aggregate – clean floor			
Reference:	Component:	ID:	
1.20	Other		
Description:			
Temperature reading on tank 36 Dc.			

6. Summary of Findings:

No.	Status	Comments
1	A	Entry Hatch: <ul style="list-style-type: none">Moderate rust on support frame bracing
2	A	Roof External: <ul style="list-style-type: none">Timber frame structure on roof is not fully sealed and external elements can enter reservoir.Timber frame structure has rot on 90x90 Hardwood post supports.Rust is noticeable in vicinity of timber frame structure.There is a galvanised pipe on roof that is only supported by bricks on iron sheeting with no noticeable bracing to roof support beams.New pipe penetrations on roof are not fully sealed.
3	A	Roof Internal: <ul style="list-style-type: none">Moderate rust on girders and column support brackets.Moderate rust on bolt connectionsModerate / severe rust on box gutter support bracing and sheeting that is hanging.
4	A	Internal Pipework: <ul style="list-style-type: none">Moderate to heavy corrosion on all pipework inlet, outlet and overflow.

Rowan Toomey
Executive Director

Theodore Reservoir Cleaning report 2015

Structure ID:	Theodore WTP		Client:	Banana Shire Council	
Structure Type:	Reservoir		Contact:	Miguel Escobar	
Construction Type:	Concrete		Owner:	BANANA SHIRE COUNCIL	
Inspection Type:	Clean & Inspect		Asset Location:	2 Eidsvold Theodore Road, THEODORE, Qld	
Inspector:	J Pearson C Huckauff		Lat Long:		
Inspection date:	Friday 27 th August 2021		Report No:	1423-2021-14	
Inspection Level 1	<input checked="" type="checkbox"/>	Inspection Level 2	<input type="checkbox"/>	Inspection Level 3	<input type="checkbox"/>
Potable Water	<input checked="" type="checkbox"/>	NON Potable Water	<input type="checkbox"/>	Contaminated Diving	<input type="checkbox"/>
				Exceptional	<input type="checkbox"/>
				Programmed	<input checked="" type="checkbox"/>
				Underwater	<input checked="" type="checkbox"/>
				Sediment Cleaning	<input checked="" type="checkbox"/>
				Samples required	<input type="checkbox"/>
				Disinfection	<input type="checkbox"/>



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6. Summary of Findings

1. Asset Inventory and Description

1.1 Entry and Access:

Security Fencing:	Yes	Height:	2.4m	Length:	-
Fence Type:	Galvanised mesh				
Gates:	Y	Lock:	Yes	Grounds:	Lawn
CCTV:	N	Quantity:	-	Security patrolled:	Unknown
Other:	Forms part of water treatment plant – well kept.				

1.2 Reservoir | Tank Specifications:

Construction Walls	Concrete	Construction Floor	Concrete	Construction Roof	Gal C section and iron roof
Shape	Round	Height	3.5 m	Diameter	21.4 m
Floor Area	359.6 M2	Capacity	1.3 ml	Water Depth	3.0m
Other	-				

1.3 Additional Assets:

External ladder	Gal cage vertical ladder with safety cage			Length	4.6m
Confined Space	Y	Signage	N	Restricted access	Y
Davit	N	Davit Type	-	In Service	-
Hatch	Y			Hatch lock	N
Hatch condition	8/10			Opening size	0.8m x 0.8m
Handrails and type	No			Height of rail	-
Roof Platform	N	Size	-	Harness anchor points	0
Internal ladder	Y			Length	3.4 m
Other:	-				

2. External Inspection

Area	Status	Rating 10	Comments	Ref:
Compound	D	8	Forms part of Water treatment plant and is well kept.	
Coatings	-	-	No coatings	
Vandalism	D	10	No apparent vandalism on reservoir noticeable.	
Walls	D	8	Numerous patch repairs, no noticeable leakages.	1.2
Ladder External	D	8	Appears to be in good order	1.1
Entry Hatch	D	8	Appears to be in good order	1.4
Roof Platforms	-	-	No roof platform	
Walkways	-	-	No walkways.	
Roof	A	5	Central gutter does not filter water away from roof and high rain events will spill over into inside.	1.3 1.7
Handrails	-	-	No handrails	
Davit	-	-		
Ventilation	D	9	Covers are on side vents, appear to be in good order.	
Bird Proofing	-	-		
Electrical	-	-		
Level Indicator	D	8	Appears to be working	
Others:	A		External valve has moderate rust at base of connection to reservoir wall.	1.5

Status A: Attention required | Status F: Item to be reassessed | Status D: Item Deferred until next inspection

3. Internal Inspection

Area	Status	Rating 10	Comments	Ref:
Walls	D	7	Appears to be in moderate condition, exposed aggregate is noticeable on walls with staining in multiple locations.	1.9
Columns	D	7	Appears to be in moderate condition	1.8
Coatings	-	-	No coatings	
Roof	A	5	Number of bolts and support spacers on roof underside are showing signs of corrosion	1.7
Floor	D	7	A number of floor joints have epoxy in spot locations, no obvious issues encountered.	1.10 1.12
Ladder Internal	D	7	Fixings and ladder have minor surface corrosion	1.11
Overflow	A	5	Overflow is heavily corroded and future maintenance should include replacement.	1.6
Inlet	D	7	Mild/ Moderate rust	
Outlet	D	7	Mild / Moderate rust	
Sediment and foreign material	-	-	200 – 250mm lime and sand	1.13 1.14 1.15 1.16
Other	-	-	-	

Status A: Attention required | Status F: Item to be reassessed | Status D: Item Deferred until next inspection

4. Cleaning Schedule:

Water Depth:	2.5 m	Water clarity:	75%
Deposit type:	Lime and Sand	Silt level average:	200-250mm
Samples reference:	- Supplied to principle representative		

Comments:





- Sediment consistency was lime and sand, dense in nature.
- Due to the lime sediment photos were difficult to obtain as visibility was poor.





Chlorine Testing:





- Not required in scope.





Sediment disposal method: Sediment pond on-site | confirmed with principle representative.

5. Photographs and Sketches Record:

Reference:	Component:	ID:	
1-1	Ladder		
Description:			
External ladder			
Reference:	Component:	ID:	
1-2	Walls		
Description:			
External walls			
Numerous patch repairs, no noticeable leakages.			
Reference:	Component:	ID:	
1-3	Roof		
Description:			
External roof			
Reference:	Component:	ID:	
1-4	Hatch		
Description:			
Entry Hatch			

Reference:	Component:	ID:	
1-5	Valve		
Description:			
External valve has moderate rust at base of connection to reservoir wall.			
Reference:	Component:	ID:	
1-6	Pipework		
Description:			
Overflow rust moderate / severe.			
Reference:	Component:	ID:	
1-7	Roof		
Description:			Gaps in central roof gutter
Central gutter does not filter water away from roof and high rain events will spill over into inside.			
Reference:	Component:	ID:	
1-8	Roof		
Description:			
Internal roof and support piles			

Reference:	Component:	ID:	
1-9	Walls		
Description:			
<p>Appears to be in moderate condition, exposed aggregate is noticeable on walls with staining in multiple locations.</p>			
Reference:	Component:	ID:	
1-10	Floor		
Description:			
<p>A number of floor joints have epoxy in spot locations, no obvious issues encountered.</p>			
Reference:	Component:	ID:	
1-11	Ladder		
Description:			
<p>Fixings and ladder have minor surface corrosion.</p>			
Reference:	Component:	ID:	
1.12	Floor		
Description:			
<p>A number of floor joints have epoxy in spot locations, no obvious issues encountered.</p>			

Reference:	Component:	ID:	
1.13	Sediment		
Description:			
Sediment Lime and fines 200 -250mm			
Reference:	Component:	ID:	
1.14	Sediment		
Description:			
Sediment – clean – unclean floor			
Reference:	Component:	ID:	
1.15	Floor		
Description:			
Sediment – clean – unclean floor			
Reference:	Component:	ID:	
1.16	Floor		
Description:			
Floor – wall joint after cleaning.			

6. Summary of Findings:

No.	Status	Comments
1	A	Roof: <ul style="list-style-type: none">• Central gutter does not filter water away from roof and high rain events will spill over into inside.• Number of bolts and support spacers on roof underside are showing signs of corrosion.
2	A	External valve: <ul style="list-style-type: none">• External valve has moderate rust at base of connection to reservoir wall.
3	A	Overflow: <ul style="list-style-type: none">• Overflow is heavily corroded and future maintenance should include replacement.

Rowan Toomey
Executive Director