



Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V

Section A – Licence Details

Licence number:	L5989/1991/11	Licence file number:	2010/002537
Licence holder:	Water Corporation		
Trading as:	Northam Wastewater Treatment Plant		
ABN:	28 003 434 917		
Registered address:	629 Newcastle Street, LEEDERVILLE, WA 6007		
Reporting period:	01 / 07 / 2020 to 30 / 06 / 2021		

Section B – Statement of Compliance with Licence Conditions

Did you comply with all of your licence conditions during the reporting period?
(please tick the appropriate box)

☐ Yes – please complete:

- section C;
- section D if required; and
- sign the declaration in Section F.

☒ No – please complete:

- section C;
- section D if required;
- section E; and
- sign the declaration at Section F.

Section C – Statement of Actual Production

Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.

Prescribed Premises Category	Actual Production Quantity
54	Inflow 1566m ³ /day

Section D – Statement of Actual Part 2 Waste Discharge Quantity

Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.

Prescribed Premises Category	Actual Part 2 Waste Discharge Quantity
Not Applicable	

Section E – Details of Non-Compliance with Licence Condition

Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.

Condition no:	6	Date(s) of non-compliance:	13/01/2021
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Details of non-compliance:

The Northam Wastewater Treatment Plant uses aluminum sulphate solution dosing in order to maintain Total Phosphorus levels to <1mg/L in treated wastewater discharged for Shire of Northam reuse or to the environment in the event that the Shire cannot not receive the treated wastewater. In accordance with the operating Licence, Water Corporation had discharged, from the final wastewater treatment pond to the Avon River with an average arithmetical mean of greater than 1.0mg/L in 3 of 4 consecutive monthly sample periods, from October 2020 to January 2021. The January 2021 result was received on 29 Jan 2021 and confirmed the non-compliance. DWER was notified in writing of the non-compliance on 1 February 2021

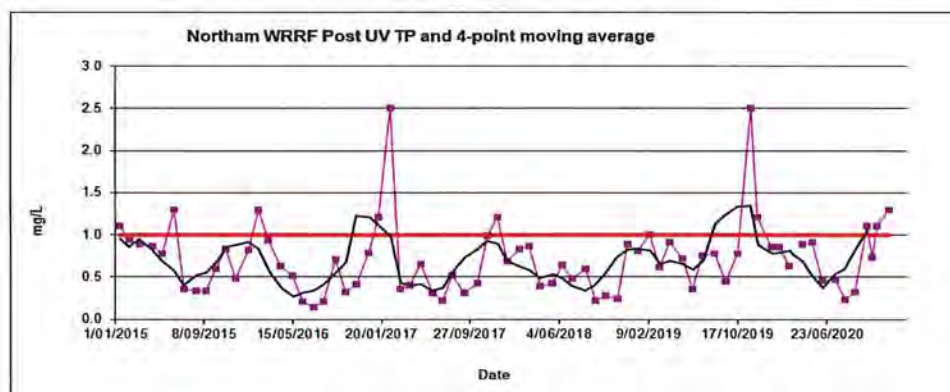
Sample Point Northam Final Effluent Wet Well Post UV	Flow (m ³) through discharge flume:	Total Phosphorus reading date:	Total Phosphorus (mg/L)
September 2020	26149	09/09/2020	0.32
October 2020	8369	14/10/2020	1.1
		29/10/2020	0.73*
November 2020	5972	10/11/2020	1.1
December 2020	1085	15/12/2020	1.3
January 2021	1434	13/01/2021	2.2

*Reactive follow up sample taken after aluminium sulphate dosing was increased

What was the actual (or suspected) environmental impact of the non-compliance?

NOTE – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.

The graph below shows that total phosphorous results are cyclical and were typical for that time of the year and not determined to have any additional negative environmental impact. The Avon is a highly disturbed river, influenced by urban, industrial, and agricultural activities; it was not flowing at the time of the event. It should be noted that it is uncommon for the WWTP to discharge to the environment over the summer months due to reduced inflow (holiday period), significant evaporation rates and the highest volumes of available wastewater routinely sent to the Shire of Northam for their re-use on public open spaces. The graph below indicates cyclical Total Phosphorous results only and does not indicate if in fact there was any discharge to the environment.



The average arithmetical was returned to less than 1.0mg/L (over 3 of 4 consecutive monthly sample periods) as of May 2021. There were multiple operational (12) and investigative (>24) samples taken between regulatory samples to ensure that contingencies and reactive measures

that were being undertaken were effective in reducing Total Phosphorous.

Sample Point Northam Final Effluent Wet Well Post UV	Flow (m ³) through discharge flume:	Total Phosphorus reading date:	Total Phosphorus (mg/L)
February 2021	999	10/02/2021	2.4
March 2021	12055	10/03/2021	1.08
April 2021	1619	14/04/2021	0.85
May 2021	17462	12/05/2021	0.80

Cause (or suspected cause) of non-compliance:

There were a number of factors that contributed to the non-compliance however the most significant factor was determined to be an excessive buildup of sludge (containing bound phosphorus) in Pond 4. Excessive sludge build-up coupled with increased cyclical biological (algal) activity contributed the re-release of phosphorous back into solution. As part of the extensive incident investigations, sonar sludge profiling undertaken in February 2021 confirmed what operations were seeing in their routine inspections, visible sludge build up, particularly around the inlet, outlet and corners of pond 4. Aluminum sulfate dosing increases the rate in which solids/sludge builds up in a pond system and as a result requires more frequent desludging. Pond 4 requires de-sludging, on average, every 2 years, and had last been carried out in May 2018. The profiling carried out in February 2021 indicated that at that in 2018 the pond had likely not been entirely desludged (estimated 75% complete) which contributed to the non-compliant conditions.

Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:

Following onsite investigations carried out in January 2021, a technical report was produced with recommended actions. These included raising an Asset Deficiency Report (ADR) that recommended that sonar sludge profiling was carried out as a matter of urgency. This was completed in February 2021. The de-sludging program was re-arranged and the planned de-sludging of pond 4 in the 22/23 financial year was brought forward and completed in May/June 2021. In the interim, prior to de-sludging, other reactive measures were taken which included increasing the rate of aluminum sulphate dosing (both automatic and manual methods were used), treating pond 4 briefly with an algicide and the increased aeration of both Shire re-use ponds prior to discharge to their re-use scheme. Constant and regular sampling was undertaken to monitor TP and other indicative analytes in the system whilst we continued to investigate and awaited de-sludging.

Was this non-compliance previously reported to DER?

☒ Yes, and

☐ Reported to DER verbally

Date: / /

☒ Reported to DER in writing

Date: 29/01/2021

Section E – Details of Non-Compliance with Licence Condition			
Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.			
Condition no:	4(b)	Date(s) of non-compliance:	03/03/2021
Details of non-compliance:			
<p>Between 9am 28 February and 9.00am 4 March 2021 Northam received 135.9mm of rain (Bureau of Meteorology). As part of this rain event in the evening of 2 March 2021 there was a significant downpour for approximately 40 minutes which resulted in localised flooding across the town. This downpour placed significant stress on both the Shire owned stormwater conveyance network and our own wastewater conveyance network and resulted in overflows and areas of significant inundation in multiple locations including Secondary Treatment Pond no.3 at the Northam Wastewater Treatment Plant (WWTP). An overtopping event occurred and 5000L was the estimated volume that was lost from the treatment pond during a 4 to 5 hour period.</p>			
<p>What was the actual (or suspected) environmental impact of the non-compliance? NOTE – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.</p>			
<p>The 5000L that was estimated to be lost from pond no.3 was partially recovered and fed back into the pond system for completion of the wastewater treatment process. All discharge was contained within the bounds of the licensed premises site. The Northam WWTP site is adjacent to the Avon River. The Avon is a highly disturbed river, influenced by urban, industrial, and agricultural activities; it was not flowing at the time of the event. Residual risk to health and the environment as a result of the overflow was assessed and considered low.</p>			
Cause (or suspected cause) of non-compliance:			
It is suspected that there is a number of stormwater inundation points within the wastewater conveyance network.			
Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:			
<p>Asset investigations are currently underway to ascertain where the stormwater inundation points into the conveyance network are. As per written communications with DWER, investigations are inclusive of the placement of 25 data loggers within the conveyance network to map abnormal flows as well as the inclusion of fluorescent dye into the stormwater network to see where any infiltration/connections may be. Finding these points and rectifying them (in the short and long term) will assist in maintaining freeboard in the secondary treatment ponds during heavy rainfall events.</p>			
Was this non-compliance previously reported to DER?			
<input checked="" type="checkbox"/> Yes, and			
<input type="checkbox"/> Reported to DER verbally		Date: / /	
<input checked="" type="checkbox"/> Reported to DER in writing		Date: 03/03/2021	

Section E – Details of Non-Compliance with Licence Condition

Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.

Condition no:	Category 54- Capacity	Date(s) of non-compliance:	01/07/2020 - 30/06/2021
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Details of non-compliance:

The Northam Wastewater Treatment Plant is licenced for an inflow capacity of 1,500m³/day. Due to an increase in inflow, the WWTP averaged 1,566m³/day inflow throughout the 2020/2021 reporting period.

What was the actual (or suspected) environmental impact of the non-compliance?

NOTE – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.

There are no discernible environmental impacts from the increase in average daily inflow capacity.

Cause (or suspected cause) of non-compliance:

Increased inflow is the cause of the non-compliance. The increase in inflow can be partially attributed to higher than average rainfall in the second half of the reporting period. Stormwater ingress into the Northam sewer conveyance network is currently being investigated.

Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:

Water Corporation submitted a Works Approval application to DWER on 31/07/18 to undertake works to increase treatment capacity to 2,000 m³/day and to address the outstanding EIP commitments. Water Corporation is continuing to work internally and with DWER to provide the information required for a works approval.

Was this non-compliance previously reported to DER? Yes

☐ Yes, and

☐ Reported to DER verbally

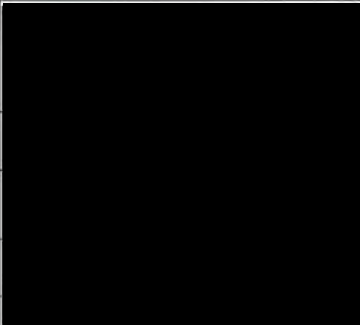
Date: / /

☒ Reported to DER in writing

Date: AACR August 2018

Section F – Declaration

I/We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular¹. I/We consent to the Annual Audit Compliance Report being published on the Department of Environment Regulation's (DER) website.

Signature ² :		Signature:	
Name: (printed)		Name: (printed)	
Position:		Position:	
Date:		Date:	
Seal (if signing under seal):			

¹ It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

² AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.