



Veolia (Darling Walk) Non-Potable Water Scheme

Follow-up Licence Plan Audit – Water Quality Plan

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Independent Pricing and Regulatory Tribunal

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Cobbitty Consulting Pty Ltd
ABN: 45 164 692 488

PO Box 561, Bayswater VIC 3153
Telephone: +61 (0) 423 326 693
Email: jim.sly@cobbittyconsulting.com.au

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Contents

1. Executive Summary	1
1.1 Auditor Declaration	1
1.2 Major Findings	1
1.3 Recommendations	2
1.4 Conclusion	3
2. Introduction	4
2.1 Objectives	4
2.2 Licensee's Infrastructure, Systems and Procedures	4
2.3 Audit Method	5
2.4 Regulatory Regime	6
2.5 Quality Assurance Process	7
2.6 Audit Findings	7
3. Water Quality Plan (Non-potable Water)	8
3.1 Summary of Findings	8
3.2 Review of Actions	9
3.3 Opportunities for Improvement	10
Appendix A Detailed Audit Findings – Water Quality Plan (Non-potable Water) (WQP (npw))	11
Table A.1 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 1	13
Table A.2 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 2	15
Table A.3 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 3	17
Table A.4 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 6	19
Table A.5 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 9	22
Table A.6 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 10	24

1. Executive Summary

1.1 Auditor Declaration

This report presents the findings of a Follow-up Licence Plan Audit of the compliance of Veolia Water Solutions and Technologies (Australia) Pty Ltd's *Water Quality Plan* with the relevant provisions of the *Water Industry Competition Act 2006* and the *Water Industry Competition (General) Regulation 2008* as they relate to the non-potable (recycled) water scheme at the Darling Walk Development, Darling Harbour, Sydney.

The auditor confirms that:

- the auditor was provided with sufficient evidence on which to base the conclusions reached during the audit;
- the audit findings accurately reflect the professional opinion of the auditor;
- the auditor has conducted the audit, determined the audit findings and prepared this report in accordance with the requirements of the *WIC Act Audit Guidelines*¹ and the provisions of the Audit Deed; and
- the audit findings have not been unduly influenced by the Licensee and/or any of its associates and express the auditor's opinion as to whether the Licensee has met the Licence conditions and regulatory requirements as specified in the scope.

1.2 Major Findings

In the opinion of the auditor, some aspects of the Darling Walk *Water Quality Plan*² that was the subject of this Follow-up Licence Plan Audit (specifically Elements one, three, nine and ten of the Australian Guidelines for Water Recycling (AGWR) Framework) were adequately compliant with the requirements of the *Water Industry Competition (General) Regulation 2008* cl.7(1). However, other aspects of the *Water Quality Plan* (specifically Elements two and six of the AGWR Framework) were not adequately compliant with all of the requirements. The non-compliances were considered non-material and, therefore, a non-compliant (non-material) audit finding has been made.

There were two identified non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to the *Water Quality Plan (Non-potable Water)* (detailed in respect **Appendix A**) as follows:

- ***WIC Reg Sched 1 cl.7(1)(b) – AGWR Element two: The WQP (npw) includes an analysis of the recycled water system – Non-compliant (non-material):***

The *Water Quality Plan* had been substantially revised but was not considered to adequately comply with the WICA section 16 Order³ to:

- a) fully and accurately reflect the treatment plant operating arrangements that are currently in place.

¹ IPART, *Audit Guideline; Water Industry Competition Act 2006*, September 2018.

² Veolia, *Darling Quarter; Network Operator's Water Quality Plan* (DQ-WQP-001-08) (Revision 8), 5 March 2020.

³ IPART, "Order under section 16 of the *Water Industry Competition Act 2006* (WICA): Requirement to revise and audit for adequacy the *Water Quality Plan* for the Darling Walk scheme and pay a monetary penalty of \$5,000", dated 10 April 2019, IPART reference D19/8808.

The process flow diagram presented in the *Water Quality Plan* (Revision 8) lacked sufficient detail to show the off-specification water flow diversion pathways and had not clearly delineated the boundaries of the critical control points (CCPs). The non-compliance was considered non-material given that in practice the relevant CCPs were in place and the systems were constructed so as to adequately manage risks; the non-compliance simply related to adequately representing them on the process flow diagram.

Veolia prepared an updated draft of the process flow diagram between the time of the draft and final audit reports to show the off-specification water flow diversion pathways but not to clearly delineate the CCPs. However, these are still not documented (at the time of the audit reporting) either by incorporation into an updated version of the *Water Quality Plan* or a document cited therein.

- ***WIC Reg Sched 1 cl.7(1)(b) – AGWR Element six: The WQP (npw) includes details on the management of incidents and emergencies – Non-compliant (non-material):***

The incident information requirements were considered broadly compliant but lacked sufficient specific details in relation to specific triggers to be deemed fully compliant. Those details needed to be readily available at short notice to a new user of the *Water Quality Plan* to be fully compliant and, as such, a non-material non-compliance was reported.

Between the issuing of the draft and final audit reports Veolia staff explained that they did have an awareness of their obligations and, by reference, could identify them at short notice. However, this understanding was still not documented (at the time of the audit reporting) either by incorporation into an updated version of the *Water Quality Plan* or a document cited therein.

1.3 Recommendations

The following two (2) recommendations have been made as a result of this audit:

- **REC-DW-WQP2020.01:** It is recommended that VWST finalise its process flow diagram and include it within an updated *Water Quality Plan*. In doing so, VWST should ensure that the off-specification water flow diversion pathways are shown (as per the most recent draft sighted) and that the boundaries of the CCPs are clearly delineated.
- **REC-DW-WQP2020.02:** It is recommended that VWST update its *Water Quality Plan*, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, to make it very clear precisely what circumstances would constitute a water quality incident or emergency for the licenced infrastructure. This requires the clear definition of specific triggers; the relevant NSW Health Water Unit, NSW Health Public Health Unit, customer and IPART entities should also be covered in the notification process or procedure.

The process ought to be robust to persons being on leave or out of contact, very clear and explicit, readily available, as unambiguous as reasonably practicable, and suitable for use during incident situations; it should also be confirmed as being acceptable to NSW Health. The procedure is best subjected to testing and evaluation with mechanisms put in place to ensure that it is kept up to date.

Two (2) opportunities for improvement, relating to AGWR Framework Element One, which the Licensee may wish to consider, are identified within the body of the report.

1.4 Conclusion

In the opinion of the auditors, some aspects of the Darling Walk *Water Quality Plan*⁴ that was the subject of this Follow-up Licence Plan Audit (specifically Elements one, three, nine and ten of the Australian Guidelines for Water Recycling (AGWR) Framework) were adequately compliant with the requirements of the *Water Industry Competition (General) Regulation 2008* cl.7(1). However, other aspects of the *Water Quality Plan* (specifically Elements two and six of the AGWR Framework) were not adequately compliant with all of the requirements. The non-compliances were considered non-material and, therefore, a non-compliant (non-material) audit finding has been made.

⁴ Veolia, *Darling Quarter; Network Operator's Water Quality Plan* (DQ-WQP-001-08) (Revision 8), 5 March 2020.

2. Introduction

2.1 Objectives

This report presents the findings of a Follow-up Licence Plan Audit undertaken for the Independent Pricing and Regulatory Tribunal (IPART) under the provisions of the *Water Industry Competition Act 2006*.

The objective of the audit was to assess compliance of the Licensee, Veolia Water Solutions and Technologies (Australia) Pty Ltd's (Veolia or VWST) *Water Quality Plan* with the requirements of the relevant legislation (the *Water Industry Competition Act 2006* and *Water Industry Competition (General) Regulation 2008*) as they relate to the non-potable (recycled) water scheme at the Darling Walk Development, Darling Harbour, Sydney. The scheme is operated pursuant to the conditions of Network Operator's Licence (Licence No: 10_008).

2.2 Licensee's Infrastructure, Systems and Procedures

The infrastructure, systems and procedures subject to audit are those related to the non-potable (recycled) water scheme at the Darling Walk Development, through which Veolia provides recycled water services to the Darling Quarter community precinct at Darling Harbour, Sydney (refer http://www.veoliawatertechnologies.com.au/media/case-studies/case_darling.htm). The infrastructure comprises principally of a wastewater treatment plant, which is located in the building basement, together with connecting pipework.

Wastewater, which is sewer-mined from a nearby Sydney Water sewer, is treated on-site using a multi-stage process to produce high standard recycled water that is safe for toilet flushing, garden irrigation and cooling towers. The treatment plant uses Moving Bed Biofilm Reactor (MBBR), Membrane Bioreactor (MBR), Ultraviolet (UV), Reverse Osmosis (RO) and Chlorination technologies. After treatment, the recycled water is stored for distribution throughout the development site.

Veolia Water Solutions and Technologies (Australia) Pty Ltd (ACN 055 254 003) is the Licensee, holding Network Operator's Licence No: 10_008. As Licensee, Veolia is responsible for the ongoing operation and maintenance of the treatment facility in accordance with its Licence Plans including an *Infrastructure Operating Plan* and a *Water Quality Plan*, the most recent versions of which are as follows:

- Infrastructure Operating Plan – *Veolia, Darling Quarter Development; Network Operator's Infrastructure Operating Plan* (DQ-IOP-001-5) (Revision 5), 5 March 2020; and
- Water Quality Plan – *Veolia, Darling Quarter; Network Operator's Water Quality Plan* (DQ-WQP-001-08) (Revision 8), 5 March 2020;

and other relevant supporting documentation.

2.3 Audit Method

2.3.1 Audit Scope

The audit comprised a Follow-up Licence Plan Audit conducted pursuant to the *WIC Act Audit Guidelines*.⁵ The specific scope of the audit, which was as defined by IPART in a letter (reference D20/6367) to Veolia dated 26 March 2020, addressed identified requirements of the *Water Industry Competition (General) Regulation 2008* as they relate to the *Water Quality Plan* (Non-potable water) (WQP(npw)), and which had not been fully addressed at the time of a previous Licence Plan Audit, which was finalised in July 2019.⁶

More specifically, IPART requested that the auditor follow-up the findings and related recommendations of the previous audit in relation to compliance with Elements one, two, three, six, nine and ten of the *Australian Guidelines for Water Recycling* (AGWR), and assess whether these shortcomings have been adequately addressed in the current version of the *Water Quality Plan*.

2.3.2 Audit Standard

The audit has been undertaken in accordance with the principles/guidance presented in:

- ISO 19011:2011 *Guidelines for auditing management systems*; and
- IPART, *Audit Guideline; Water Industry Competition Act 2006*, September 2018 (WIC Act Audit Guidelines).

2.3.3 Audit Steps

The audit has been undertaken generally in accordance with the procedure outlined in the *WIC Act Audit Guidelines*.

Following approval of an *Audit Proposal* by IPART, an *Information Request* was sent to both the Licensee and IPART approximately two weeks prior to the audit fieldwork being undertaken. The Licensee provided an information pack in response to the request several days prior to the audit fieldwork.

Audit fieldwork was undertaken remotely via online video conferencing on 14 May 2020. Pre-recorded video and photographs of the infrastructure were viewed and discussed; this was followed by review and discussion (audit) of relevant documentation/records. Some additional items of information and/or clarification were requested following the audit fieldwork and subsequently provided.

A draft audit report was prepared and submitted to the Licensee for review, before being finalised and issued to both the Licensee and IPART. Following review by IPART, the report was revised to further address some specific issues; a draft of the updated report was provided to both the Licensee and IPART prior to being finalised.

The audit process involved seeking objective evidence that the Licensee had complied with the obligations identified for audit by IPART. Evidence was obtained through interview, review of relevant documentation and records, and site inspection.

⁵ IPART, *Audit Guideline; Water Industry Competition Act 2006*, September 2018.

⁶ Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan)* (Version 5), 28 July 2019.

2.3.4 Audit Team

The audit was conducted by Jim Sly and Dr Dan Deere, both of whom hold relevant Lead Auditor accreditation on IPART’s Technical Services and Water Licensing Panel. The two auditors addressed various components of the audit, as follows:

- Jim Sly – audit team lead and relevant site observations (where required); and
- Dr Dan Deere – audit of *Water Quality Plan* compliance with the requirements of the *Regulation*.





The peer/quality assurance review was undertaken by each auditor reviewing the other auditor’s work.

Veolia was represented by Subrat Kar, Craig Hancock, Claudio Kohn and Pat Coulton. IPART representative Lil Cullen attended as an observer.

2.3.5 Audit Grades

Audit grades have been awarded in accordance with guidance presented in the *WIC Act Audit Guidelines*. The compliance grades applicable for the purposes of this audit were as identified in **Table 2.1**.

Table 2.1 Audit Compliance Grades

Compliance Grade	Description
 Compliant	Sufficient evidence is available to confirm that the requirements have been met.
 Non-compliant (non-material)	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does not adversely impact the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
 Non-compliant (material)	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does adversely impact the ability of the Licensee to achieve defined objectives or assure controlled processes, products or outcomes.
 No Requirement	There was no requirement for the Licensee to meet this criterion during the audit period.

2.4 Regulatory Regime

The non-potable (recycled) water scheme at Darling Walk operates in accordance with the provisions of a Network Operator’s Licence (Licence No: 10_008) issued under the *Water Industry Competition Act 2006* (NSW). Other relevant regulatory instruments and standards/guidelines include:

- *Water Industry Competition (General) Regulation 2008* (NSW);
- IPART, *Audit Guideline; Water Industry Competition Act 2006*, September 2018;
- *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) 2006*;

- *Plumbing Code of Australia;*
- *Plumbing and Drainage Act 2011 (NSW);* and
- NSW and national water industry and environmental regulations and codes of practice as applicable.

2.5 Quality Assurance Process

The quality of this audit report was assured through a professional review process. The report has been independently reviewed by a Lead Auditor who holds relevant accreditation on IPART's Technical Services and Water Licensing Panel.

2.6 Audit Findings

Audit findings are summarised in the following **Section 3**, and are presented in full detail in **Appendix A**.

3. Water Quality Plan (Non-potable Water)

3.1 Summary of Findings

In the opinion of the auditors, some aspects of the Darling Walk *Water Quality Plan*⁷ that was the subject of this Follow-up Licence Plan Audit (specifically Elements one, three, nine and ten of the Australian Guidelines for Water Recycling (AGWR) Framework) were adequately compliant with all of the requirements of the *Water Industry Competition (General) Regulation 2008* cl.7(1). However, other aspects of the *Water Quality Plan* (specifically Elements two and six of the AGWR Framework) were not adequately compliant with all of the requirements. The non-compliances were considered non-material and, therefore, a non-compliant (non-material) audit finding has been made.

There were two identified non-material non-compliances in respect of the audited clauses of the *Water Industry Competition (General) Regulation 2008* related to the *Water Quality Plan (Non-potable Water)*, detailed assessment of which is presented in **Appendix A**, as follows:

- ***WIC Reg Sched 1 cl.7(1)(b) – AGWR Element two: The WQP (npw) includes an analysis of the recycled water system – Non-compliant (non-material):***

The *Water Quality Plan* had been substantially revised but was not considered to adequately comply with the WICA section 16 Order⁸ to:

- b) fully and accurately reflect the treatment plant operating arrangements that are currently in place.

The process flow diagram presented in the *Water Quality Plan* (Revision 8) lacked sufficient detail to show the off-specification water flow diversion pathways and had not clearly delineated the boundaries of the critical control points (CCPs). The non-compliance was considered non-material given that in practice the relevant CCPs were in place and the systems were constructed so as to adequately manage risks; the non-compliance simply related to adequately representing them on the process flow diagram.

Veolia prepared an updated draft of the process flow diagram between the time of the draft and final audit reports to show the off-specification water flow diversion pathways but not to clearly delineate the CCPs. However, these are still not documented (at the time of the audit reporting) either by incorporation into an updated version of the *Water Quality Plan* or a document cited therein.

To achieve full compliance, Veolia should:

- **REC-DW-WQP2020.01:** It is recommended that VWST finalise its process flow diagram and include it within an updated Water Quality Plan. In doing so, VWST should ensure that the off-specification water flow diversion pathways are shown (as per the most recent draft sighted) and that the boundaries of the CCPs are clearly delineated.

Detailed discussion in respect of this obligation is presented in **Table A.2**.

⁷ Veolia, *Darling Quarter; Network Operator's Water Quality Plan* (DQ-WQP-001-08) (Revision 8), 5 March 2020.

⁸ IPART, "Order under section 16 of the *Water Industry Competition Act 2006* (WICA): Requirement to revise and audit for adequacy the *Water Quality Plan* for the Darling Walk scheme and pay a monetary penalty of \$5,000", dated 10 April 2019, IPART reference D19/8808.

- **WIC Reg Sched 1 cl.7(1)(b) – AGWR Element six: The WQP (npw) includes details on the management of incidents and emergencies – Non-compliant (non-material):**

The incident information requirements were considered broadly compliant but lacked sufficient specific details in relation to specific triggers to be deemed fully compliant. Those details needed to be readily available at short notice to a new user of the *Water Quality Plan* to be fully compliant and, as such, a non-material non-compliance was reported.

Between the issuing of the draft and final audit reports Veolia staff explained that they did have an awareness of their obligations and, by reference, could identify them at short notice. However, this understanding was still not documented (at the time of the audit reporting) either by incorporation into an updated version of the *Water Quality Plan* or a document cited therein.

To achieve full compliance, Veolia should:

- **REC-DW-WQP2020.02:** It is recommended that VWST update its *Water Quality Plan*, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, to make it very clear precisely what circumstances would constitute a water quality incident or emergency for the licenced infrastructure. This requires the clear definition of specific triggers; the relevant NSW Health Water Unit, NSW Health Public Health Unit, customer and IPART entities should also be covered in the notification process or procedure.

The process ought to be robust to persons being on leave or out of contact, very clear and explicit, readily available, as unambiguous as reasonably practicable, and suitable for use during incident situations; it should also be confirmed as being acceptable to NSW Health. The procedure is best subjected to testing and evaluation with mechanisms put in place to ensure that it is kept up to date.

Detailed discussion in respect of this obligation is presented in **Table A.4**.

3.2 Review of Actions

The Licensee made significant suggestions regarding corrections and clarifications and tendered additional evidence following issue of the draft report and prior to the final report being issued. For instance, during this period VWST prepared an updated draft of the process flow diagram to show the off-specification water flow diversion pathways. In addition, VWST verbally explained how incidents and emergencies would be handled in practice.

However, since these changes were not all in place and formally documented in the *Water Quality Plan* at the time of the audit reporting, and since some of this response was verbal and not documented, the non-compliances remained.

Subsequent to issue of the draft (version 3.0) and prior to submission of the updated final (version 4.0) audit report, Veolia advised IPART of actions it proposes to take in response to issues identified by an Operational Audit conducted in parallel with this audit.⁹ Those issues, which relate, in part, to the non-compliances identified in this report, are as follows:

⁹ Cobbitty Consulting, *Veolia (Darling Walk) Non-Potable Water Scheme; 2020 Operational Audit* (Version 2.1), 28 July 2020.

- the identification and implementation of arrangements for ensuring that out-of-specification water (CCP4 breached) is not discharged into supply; and
- the further definition of arrangements in relation to the identification and notification of incidents that threaten, or could threaten, water quality, public health or safety.

Implementation of the proposed actions will result further update of the *Water Quality Plan*, including the process flow diagram. Veolia indicated that such update will be undertaken once arrangements in respect of out-of-specification water have been investigated and an appropriate solution adopted.^{10,11}

3.3 Opportunities for Improvement

The following opportunities for improvement have been identified in respect of the audited *WIC Regulation* clauses related to the *Water Quality Plan (Non-potable Water)* under AGWR Framework Element one:

- **OFI-DW-WQP2020.01:** It is suggested that VWST consider proactive communication to stakeholders to go beyond the minimum obligations required to ensure compliance.
- **OFI-DW-WQP2020.02:** It is suggested that VWST set up a proactive process to keep its stakeholder list and contact details updated, noting that the identity of other organisations, and the relevant points of contact, is regularly changing without VWST necessarily being notified.

¹⁰ Email dated 5 August 2020 from Veolia to Cobbitty Consulting, Water Futures and IPART (re: 2020 Follow-up Licence Plan Audit of Darling Walk Recycled Water Scheme Water Quality Plan).

¹¹ Email dated 6 August 2020 from Veolia to Water Futures, Cobbitty Consulting and IPART (re: 2020 Follow-up Licence Plan Audit of Darling Walk Recycled Water Scheme Water Quality Plan).

Appendix A Detailed Audit Findings – Water Quality Plan (Non-potable Water) (WQP (npw))

Detailed audit findings in respect of the audited *Water Quality Plan (Non-potable Water)* are presented in this Appendix.

WIC Reg Sched 1 cl.7(1)(b) requires that:

“Before commencing to operate water infrastructure commercially, the licensed network operator for the infrastructure must prepare, and forward to IPART, a water quality plan, in relation to the water supplied from the infrastructure, that specifies:

- (b) if the water so supplied is non-potable water, how the 12 elements of the framework for the management of recycled water quality and use, as detailed in the Australian Guidelines for Water Recycling, have been addressed and will be implemented and, having regard to those guidelines, the purposes for which the water may be used and the purposes for which the water may not be used.”*

Furthermore, **WIC Reg Sched 1 cl.7(5)(a)** requires that:


“If the Minister or IPART so demands, or if any significant change is made to its water quality plan, the licensee:

- (a) must provide the Minister or IPART with a report, prepared by an approved auditor in such manner and form as the Minister or IPART may direct, as to the adequacy of the plan.”*

An audit conducted pursuant to WIC Reg Sched 1 cl.7(5)(a) identified a number of shortcomings in the version of the *Water Quality Plan* in respect of compliance with the requirements of WIC Reg Sched 1 cl.7(1)(b). These shortcomings related to Elements one, two, three, six, nine and ten of the *Australian Guidelines for Water Recycling*.

Detailed audit findings in respect of each of the outstanding matters are addressed in this Appendix.

Table A.1 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 1

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 1. The WQP (npw) shows a commitment to responsible use and management of recycled water quality.	 Compliant
Risk	Target for Full Compliance	
The lack of a water quality policy, up to date and accurate details for regulatory and formal requirements and contact details for stakeholders presents a small operational risk for this scheme.	A water quality policy, an up to date list of regulatory and formal requirements and an up to date list of stakeholders and their contact details.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. 		
Summary of reasons for grade		
VWST has updated the detail in its stakeholder contact list and identified their roles and its reporting requirements. Therefore, VWST is considered to be compliant with this requirement.		
Discussion and notes		
The 2019 Licence Plan Audit ¹² in respect of this obligation found (in part) that:		
<p><i>“The stakeholder information was broadly compliant but lacked sufficient specific details in relation to NSW Health, IPART and JLL to be compliant. VWST was able to find some of those details by the time of final reporting but hadn’t updated the Water Quality Plan to include those details and, as such, a non-material non-compliance is reported.”</i></p>		
For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:		
<p>“REC-DW-2019.01:</p> <ul style="list-style-type: none"> ▪ <i>VWST should update its Water Quality Plan, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, such that it is very clear precisely:</i> <ul style="list-style-type: none"> ○ <i>who is the point of contact among key stakeholders;</i> ○ <i>how they are to be engaged; and</i> ○ <i>via what contact details.</i> ▪ <i>The relevant NSW Health Water Unit, Public Health Unit, JLL and IPART entities should, as a minimum, be covered.”</i> 		
Review of the updated (Revision 8) <i>Water Quality Plan</i> reveals from page 63, <i>Appendix 2 Emergency Contacts</i> , the appropriate contact details (contact points and contact information) in full. Hence, these contact details are now adequately captured. The stakeholders are summarised from page 9, <i>section 9 Stakeholders</i> of the Plan along with their roles. The Plan covers reporting and communication from a compliance perspective which is sufficient to be compliant with the obligations of this requirement.		

¹² Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan)* (Version 5), 28 July 2019, section 3.1 and table A.1.

More proactive communication is likely to build trust and good relationships with stakeholders and pay dividends in the longer term. Therefore, an OFI has been identified as follows:

OFI-DW-WQP2020.01:

It is suggested that VWST consider proactive communication to stakeholders to go beyond the minimum obligations required to ensure compliance.

It was noted that during the audit period significant changes have occurred within NSW agencies. As a result, some of the organisation names and contact details in the updated (Revision 8) *Water Quality Plan* from page 63, *Appendix 2 Emergency Contacts* (contact points and contact information) are now outdated. The identity of organisations, and the relevant points of contact, is regularly changing without VWST necessarily being notified. A proactive approach is required to keep this information up to date. Therefore, an OFI has been identified as follows:

OFI-DW-WQP2020.02:

It is suggested that VWST set up a proactive process to keep its stakeholder list and contact details updated, noting that the identity of other organisations, and the relevant points of contact, is regularly changing without VWST necessarily being notified.

Recommendations


There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-DW-WQP2020.01:** It is suggested that VWST consider proactive communication to stakeholders to go beyond the minimum obligations required to ensure compliance.
 - **OFI-DW-WQP2020.02:** It is suggested that VWST set up a proactive process to keep its stakeholder list and contact details updated, noting that the identity of other organisations, and the relevant points of contact, is regularly changing without VWST necessarily being notified.
-

Table A.2 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 2

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 2. The WQP (npw) includes an analysis of the recycled water system.	 Non-compliant (non-material)
Risk	Target for Full Compliance	
Failure to adequately describe the system and assess risks could lead to risks being overlooked.	Adequate system description and risk assessment.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. 		
Summary of reasons for grade		
<p>The <i>Water Quality Plan</i>, including the process flow diagram, has not been adequately revised to comply with the WICA section 16 Order¹³ to:</p> <p>a) fully and accurately reflect the treatment plant operating arrangements that are currently in place.</p> <p>Specifically, process flow diagram presented in the <i>Water Quality Plan</i> (Revision 8) didn't adequately illustrate the CCPs or the alternative flow pathways for out-of-specification water and the location of the flow meter on the return line. Given that the relevant CCPs were in place and the systems were constructed so as to adequately manage risks, the non-compliance was considered non-material. As such, a non-material non-compliance was reported.</p>		
Discussion and notes		
<p>The 2019 Licence Plan Audit¹⁴ in respect of this obligation found (in part) that:</p> <p><i>“The Water Quality Plan had not been fully revised to comply with the WICA section 16 Order to:</i></p> <p>a) <i>fully and accurately reflect the treatment plant operating arrangements that are currently in place.</i></p> <p><i>The non-compliance was considered non-material given that in practice the relevant valves, SCADA systems, meters and pipelines had been constructed to manage the risk.”</i></p> <p>For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:</p> <p>“REC-DW-2019.02:</p> <ul style="list-style-type: none"> ▪ <i>VWST should update its Water Quality Plan, which should be fully revised to comply with the WICA section 16 Order to:</i> <ul style="list-style-type: none"> ○ <i>fully and accurately reflect the treatment plant operating arrangements that are currently in place.”</i> <p>Review of the updated (Revision 8) <i>Water Quality Plan</i> revealed that the process flow diagram (PFD) provided in Appendix 3 from page 66 had been improved and included some of the monitoring points for the CCPs. However, the PFD remained inadequate with respect to the level of detail included. Specifically, it didn't adequately illustrate the CCPs or the alternative flow pathways for</p>		

¹³ IPART, “Order under section 16 of the *Water Industry Competition Act 2006* (WICA): Requirement to revise and audit for adequacy the *Water Quality Plan* for the Darling Walk scheme and pay a monetary penalty of \$5,000”, dated 10 April 2019, IPART reference D19/8808.

¹⁴ Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan)* (Version 5), 28 July 2019, section 3.1 and table A.2.

out-of-specification water and the location of the flow meter on the return line.

The PFD needed to show the flow path(s) for the return of out-of-specification water, the additional valves and flow meter that have been installed and clearly delineate the CCPs. Therefore, it was concluded that the *Water Quality Plan* had not been fully revised to comply with the WICA section 16 Order.¹⁵

Following the submission of the draft audit report, Veolia updated the PFD to address most of these gaps, other than clear delineation of the CCPs. However, as at the time of audit reporting the updated PFD had not been incorporated into the *Water Quality Plan*, and it did not clearly delineate the boundaries of the critical control points (CCPs), this aspect of the *Water Quality Plan* was assessed not to be fully compliant with the requirements of the AGWR. The non-compliance was considered non-material given that in practice the relevant CCPs were in place and the systems were constructed so as to adequately manage risks; the non-compliance simply related to adequately representing them on the process flow diagram.

Accordingly, the following recommendation is made in respect of this non-compliant (non-material) finding:

REC-DW-WQP2020.01:

It is recommended that VWST finalise its process flow diagram and include it within an updated Water Quality Plan. In doing so, VWST should ensure that the off-specification water flow diversion pathways are shown (as per the most recent draft sighted) and that the boundaries of the CCPs are clearly delineated.

Recommendations

To achieve full compliance, Veolia should:


- **REC-DW-WQP2020.01:** It is recommended that VWST finalise its process flow diagram and include it within an updated *Water Quality Plan*. In doing so, VWST should ensure that the off-specification water flow diversion pathways are shown (as per the most recent draft sighted) and that the boundaries of the CCPs are clearly delineated.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

¹⁵ IPART, “Order under section 16 of the *Water Industry Competition Act 2006* (WICA): Requirement to revise and audit for adequacy the *Water Quality Plan* for the Darling Walk scheme and pay a monetary penalty of \$5,000”, dated 10 April 2019, IPART reference D19/8808.

Table A.3 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 3

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 3. The WQP (npw) outlines the preventive measures for water quality management.	 Compliant
Risk	Target for Full Compliance	
Failure to adequately define preventive measures and assess residual risks could lead to risks being overlooked.	Adequate definition of preventive measures and residual risk assessment.	
Evidence sighted		
<ul style="list-style-type: none"> VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. 		
Summary of reasons for grade		
<p>VWST has provided adequate details and documentation relating to what VWST has in scope as well as how it is working to ensure oversight of activities by JLL. As such, VWST is considered to be compliant with this obligation.</p>		
Discussion and notes		
<p>The 2019 Licence Plan Audit¹⁶ in respect of this obligation found (in part) that:</p> <p><i>“It’s not entirely clear from the documentation if the two product water tanks are in or out of scope for VWST nor how, and to what extent, VWST should take responsibility for ongoing oversight of activities by JLL, or whether that is considered completely out of scope of the licence. Whilst this lack of clarity wasn’t considered to represent a material risk to public health, it is considered to represent a non-material non-compliance.”</i></p> <p>For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:</p> <p>“REC-DW-2019.03:</p> <ul style="list-style-type: none"> <i>VWST should firmly clarify with Sydney Water, JLL and IPART the precise limits of its responsibility under its Network Operator’s Licence (as well as its contract to JLL and its sewer mining agreement with Sydney Water).</i> <i>The precise point of handover between Sydney Water, VWST and JLL should be identified from the perspective of infrastructure and, if distinct, water quality and risk management.</i> <i>The extent of infrastructure considered to be covered under the licence should be precisely clarified with IPART as should the extent, if any, to which VWST should go beyond that infrastructure scope in relation to the oversight, management and reporting on upstream (e.g. trade waste) or downstream (e.g. plumbing and awareness controls) water quality risk management. As a minimum, unless otherwise agreed with IPART, VWST may be responsible for ensuring that water quality doesn’t deteriorate in the treated water storages. Furthermore, VWST may be responsible for ensuring and providing evidence that JLL has ensured that customer’s plumbing installations were compliant during construction and continues to do so as plumbing systems become modified over time.”</i> 		

¹⁶ Water Futures, WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan) (Version 5), 28 July 2019, section 3.1 and table A.3.

Review of the updated (Revision 8) *Water Quality Plan* reveals from page 76 the creation of a detailed *Appendix 6 Responsibilities in relation to the use of recycled water at Darling Quarter* that clarifies with Sydney Water, JLL and IPART the precise limits of its responsibility under its Network Operator’s Licence (as well as its contract to JLL and its sewer mining agreement with Sydney Water). The *Water Quality Plan* sets out the battery limits of VWST’s responsibilities and has detailed from page 7 of the Plan the relevant responsibilities under section 6. *Codes of conduct*.

In relation to plumbing, VWST has discussed on pages 16 and 17 under the *Inadvertent and unauthorized use of treated water* section of the Plan how it is seeking to provide further oversight of plumbing – beyond the direct battery limits of the VWST area of responsibility.

This information is sufficiently clear and explicit to address the recommendation. Future audits should look at how the plumbing oversight negotiations have progressed.


Recommendations

There are no recommendations in respect of these obligations.

Opportunities for improvement

No opportunities for improvement have been identified in respect of these obligations.

Table A.4 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 6

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 6. The WQP (npw) includes details on the management of incidents and emergencies.	 Non-compliant (non-material)
Risk	Target for Full Compliance	
The absence of an approach for handling incidents and emergencies presents a risk of poor response to incidents arising related to the recycled water supply scheme.	An adequate management plan for incidents and emergencies.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. 		
Summary of reasons for grade		
<p>VWST has developed an approach to the management of incidents and emergencies, which is documented in the <i>Water Quality Plan</i>. The incident information requirements were considered broadly compliant but lacked sufficient specific details in relation to specific triggers to be deemed fully compliant. Those details needed to be readily available at short notice to a new user of the Plan to be compliant and, as such, a non-material non-compliance was reported.</p>		
Discussion and notes		
<p>The 2019 Licence Plan Audit¹⁷ in respect of this obligation found (in part) that:</p> <p><i>“The incident information requirements were broadly compliant but lacked sufficient specific details in relation to NSW Health, IPART and JLL to be deemed fully compliant. VWST was able to find some of those details by the time of final reporting but hadn’t fully updated the Water Quality Plan to include all of those details and, as such, a non-material non-compliance is reported.”</i></p> <p>For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:</p> <p>“REC-DW-2019.04:</p> <ul style="list-style-type: none"> ▪ <i>VWST should update its Water Quality Plan, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, such that it is very clear precisely:</i> <ul style="list-style-type: none"> ○ <i>who is to be notified;</i> ○ <i>via what contact details;</i> ○ <i>by what mechanism;</i> ○ <i>under what circumstances;</i> ○ <i>by whom from VWST; and</i> ○ <i>within what timeframe,</i> <i>in relation to clearly defined triggers relating to what constitute water quality incidents and emergencies, for the licenced infrastructure.</i> 		

¹⁷ Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan) (Version 5)*, 28 July 2019, section 3.1 and table A.6.

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- *The relevant NSW Health Water Unit, Public Health Unit, customer and IPART entities should, as a minimum, be covered in the notification process or procedure.*
 - *The process should be robust to persons being on leave or out of contact, very clear and explicit, readily available and as unambiguous as reasonably practicable, and suitable for use during incident situations.*
 - *The procedure should be subjected to testing and evaluation and mechanisms should be put in place to keep it up to date.”*

Review of the updated (Revision 8) *Water Quality Plan* reveals from page 63, *Appendix 2 Emergency Contacts*, the appropriate contact details in full. Hence, it is clear who will be notified and using what contact details. Likewise, an escalation process has been set out in the *Water Quality Plan* from page 61, *Appendix 1 Incident Management Steps*, which identifies who within VWST is responsible for undertaking notification actions. However, the documentation didn't provide clarity with respect to what precisely would trigger a notification or a notifiable event beyond very general references made in these two Appendices and on page 46 under section 11.6.2 *Incident and emergency response protocols*. For instance, the specific water quality events that might arise and that might trigger a notification were not set out in a form that made them readily accessible and clear. As such, REC-DW-2019.04 was considered to have been partly, but not fully addressed.

The incident information requirements were considered broadly compliant but lacked sufficient specific details in relation to specific triggers to be deemed fully compliant. Those details needed to be readily available at short notice to a new user of the Plan to be compliant and, as such, a non-material non-compliance was reported. Between the issuing of the draft and final audit reports Veolia staff explained that they did have an awareness of their obligations and, by reference, could identify them at short notice. However, this understanding was not documented at the time of the audit reporting either by incorporation into an updated version of the *Water Quality Plan* or a document cited therein. Therefore, the non-compliant (non-material) finding was retained and a recommendation made as follows:

REC-DW-WQP2020.02:

It is recommended that VWST update its Water Quality Plan, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, to make it very clear precisely what circumstances would constitute a water quality incident or emergency for the licenced infrastructure. This requires the clear definition of specific triggers; the relevant NSW Health Water Unit, NSW Health Public Health Unit, customer and IPART entities should also be covered in the notification process or procedure.

The process ought to be robust to persons being on leave or out of contact, very clear and explicit, readily available, as unambiguous as reasonably practicable, and suitable for use during incident situations; it should also be confirmed as being acceptable to NSW Health. The procedure is best subjected to testing and evaluation with mechanisms put in place to ensure that it is kept up to date.

Recommendations

To achieve full compliance, Veolia should:


- **REC-DW-WQP2020.02:** It is recommended that VWST update its *Water Quality Plan*, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, to make it very clear precisely what circumstances would constitute a water quality incident or emergency for the licenced infrastructure. This requires the clear definition of specific triggers; the relevant NSW Health Water Unit, NSW Health Public Health Unit, customer and IPART entities should also be covered in the notification process or procedure.

The process ought to be robust to persons being on leave or out of contact, very clear and explicit, readily available, as unambiguous as reasonably practicable, and suitable for use during incident situations; it should also be confirmed as being acceptable to NSW Health. The procedure is best subjected to testing and evaluation with mechanisms put in place to ensure that it is kept up to date.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table A.5 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 9

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 9. The WQP (npw) outlines the validation, research and development processes for the scheme.	 Compliant
Risk	Target for Full Compliance	
Inadequate validation, research and development processes present a risk of poor management of the recycled water supply scheme.	Adequate validation, research and development processes.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. ▪ VWST, Darling Quarters Recycled Water Treatment Plant Chlorination Validation Report, 18 July 2019. ▪ Koch, PURON Hollow Fiber Submerged Membrane Modules for MBR Applications, 2015. 		
Summary of reasons for grade		
<p>The update to the <i>Water Quality Plan</i> (Revision 8) describes how recommendation <i>REC-DW-2019.05</i> has been addressed with explicit references having been made to validation evidence along with a credible explanation as to why UVT isn't required to be monitored online for RO-treated water.</p>		
Discussion and notes		
<p>The 2019 Licence Plan Audit¹⁸ in respect of this obligation found (in part) that:</p> <p><i>“The validation information is broadly compliant but lacked sufficient specific detail and currency to be compliant with modern standards of validation. VWST was able to find some of those details by the time of final reporting and was able to demonstrate that the non-compliances were not material, but it hadn't updated the Water Quality Plan to include sufficient information on all of those details and still had some outstanding actions to complete and, as such, a non-material non-compliance is reported.”</i></p> <p>For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:</p> <p>“REC-DW-2019.05:</p> <ul style="list-style-type: none"> ▪ <i>VWST should update its Water Quality Plan, either through modifying the Plan, or adding a reference to one or more explicitly cited documents, such that it is very clear precisely which documents, and versions of those documents, are relied upon to provide validation.</i> ▪ <i>In relation to the membrane, the explicit citations need to be added although the evidence available to VWST appears sufficient.</i> ▪ <i>In relation to the UV disinfection system the evidence appears sufficient but:</i> <ul style="list-style-type: none"> ○ <i>the specific lower limiting UVT needs to be documented and cited; and</i> ○ <i>a detailed explanation of why online UVT monitoring is not required should be added to justify not having a UVT measurement online to ensure that the UV disinfection system is operating within its validated</i> 		

¹⁸ Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan)* (Version 5), 28 July 2019, section 3.1 and table A.9.

UVT range.

- *In relation to the chlorine dosing system, a reasonable basis should be given to explain the adequacy of the chlorine dose, given the temperature, pH, turbidity, contact time and chlorine concentration dynamic range of operation and the target pathogen under consideration.”*

Review of the updated (Revision 8) *Water Quality Plan* reveals on pages 52 and 53, under section 11.9.2 *Design of equipment*, that explicit citations have now been added in relation to the membrane, chlorine and UV system validation. A credible explanation was provided as to why online UVT monitoring is not required for RO-treated water.


Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Table A.6 WQP(npw) Audit Table – WIC Reg Sched 1 cl.7(1)(b) – AGWR Element 10

Clause	Requirement	Compliance Grade
WIC Reg Sched 1 cl.7(1)(b)	Element 10. The WQP (npw) outlines the process for management of documentation and records as well as the reporting requirements.	 Compliant
Risk	Target for Full Compliance	
Inadequate documentation, records and reporting presents a risk of poor management of the recycled water supply scheme.	Adequate documentation, records and reporting.	
Evidence sighted		
<ul style="list-style-type: none"> ▪ VWST, Water Quality Plan (DW-WQP-001-08) Rev 8, dated 5 March 2020. 		
Summary of reasons for grade		
<p>The update to the <i>Water Quality Plan</i> (Revision 8) describes how recommendation <i>REC-DW-2019.06</i> has been addressed such that a flow meter has been installed to monitor and record the return of out of-specification water.</p>		
Discussion and notes		
<p>The 2019 Licence Plan Audit¹⁹ in respect of this obligation found (in part) that:</p> <p><i>“The Water Quality Plan, including the process flow diagram and SCADA screens, have yet to be fully revised to comply with the WICA section 16 Order to:</i></p> <p><i>b) include measures to ensure that historical flow data for treated water discharged from the treatment plant, or similar alternative information, is retained as evidence to demonstrate that out-of-specification water has not been delivered into supply, in particular, flow monitoring downstream of the diversion of out-of-specification water back to the treatment train or records of the open or close status of valves at the diversion point.</i></p> <p><i>The non-compliance was considered non-material given that in practice records from the SCADA system were shown to prove that it was working.”</i></p> <p>For the purposes of this audit, IPART has requested that the auditor follow-up action taken in response to the following recommendation:</p> <p>“REC-DW-2019.06:</p> <ul style="list-style-type: none"> ▪ <i>VWST should update its Water Quality Plan which should be fully revised to comply with the WICA section 16 Order to:</i> <ul style="list-style-type: none"> ○ <i>include measures to ensure that historical flow data for treated water discharged from the treatment plant, or similar alternative information, is retained as evidence to demonstrate that out-of-specification water has not been delivered into supply, in particular, flow monitoring downstream of the diversion of out-of-specification water back to the treatment train or records of the open or close status of valves at the diversion point.”</i> <p>Review of the updated (Revision 8) <i>Water Quality Plan</i> reveals on page 16, under the heading <i>Inadvertent and unauthorized use of treated water</i>, that:</p> <p><i>“PFD as shown in in Appendix 3 has all CCPs indicated therein, controlling any inadvertent and unauthorized</i></p>		

¹⁹ Water Futures, *WICA Audit Report to IPART; Licence No. 10_008: Veolia (Darling Walk) Non Potable Water Scheme; Licence Plan Audit (Recycled Water Quality Plan)* (Version 5), 28 July 2019, section 3.1 and table A.10.

use of treated water. In addition, flow meter for the return of out-of-spec water have been installed; which monitors out-of-specification water flow back to MBR. Records of such flowmeter are monitored, to establish flow monitoring downstream of the diversion of out-of- specification water back to the MBR treatment train.”

This update to the *Water Quality Plan* describes how recommendation REC-DW-2019.06 has been addressed. Evidence of the operation of the relevant valves and SCADA records for the relevant flow meters should be made available for inspection in future operational audits.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.
