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Dear Aileen,

Adjusting for company actual performance in 2019-20: Blind Year Adjustment consultation

We welcome the opportunity to respond to Ofwat's consultation on proposed Blind Year Adjustment ("BYA") interventions for 2019-20. This letter sets out a summary of our response, with further detail and supporting evidence provided in the attached document. We are happy for these documents to be published by Ofwat.

Proposed adjustment to leakage

The key area that we have focussed on in our response is the proposed intervention on the Outcome Delivery Incentive ("ODI") for Leakage (WC2). We welcome the fact that we have been able to engage with the Ofwat team during the consultation period to understand their concerns in more detail, to answer their specific questions and to have the opportunity to help Ofwat to fully understand the approach that we have taken.

We recognise and support Ofwat's views that performance must be transparent and consistent for customers and other stakeholders. As set out in our detailed response, we have at all times acted in full compliance with our PR14 Final Determination ("FD") and Information Notice 16/07 ("IN 16/07") published in May 2016.

As a result, we are confident that the approach that we have taken is fully aligned with both Ofwat's requirements and expectations of us under the Performance Commitment ("PC").

We welcome Ofwat's statement that the BYA consultation on the proposed ODI penalty for leakage is, "distinct from specific undertakings"¹. We have had the opportunity through the leakage undertakings process to work closely with Ofwat over the last two years; this has included meetings where we have taken the Ofwat team through our proposals to improve our control and performance of leakage in order to deliver improvements for our customers. Our response draws on the materials that we have previously

¹ [Thames Water – Adjusting for actual performance in 2019-20: Blind year adjustment – Overview](#), page 5, Ofwat, September 2020

shared with Ofwat and also demonstrates that we have listened to, and acted upon, the useful and constructive feedback and questions that we have received from Ofwat during that period. We have appreciated the time that the Ofwat team have taken in relation to our leakage undertakings, including giving us the opportunity to regularly update you as we improved our leakage performance.

We recognise Ofwat's concerns regarding the need for performance to reflect "real" and not "paper" performance. Ofwat's consultation sets out the expectation that performance needs to be measured and recorded consistently, be subject to appropriate governance and assurance processes and to be transparent.

In our response we set out why we are confident that this is exactly in line with what we have done. We also note that we have deliberately taken a conservative approach to our reported leakage performance. If we had included any "paper" improvements in our performance and/or if we had extended our improved understanding of wastage to a broader set of customers, then this would have resulted in a significantly lower reported leakage position. We did not include any such adjustments because we did not consider that this would be in keeping with the requirements set for us by Ofwat or be in line with the expectations of our customers.

We have been open and transparent about our performance, including by reporting our ongoing progress and the areas where we are focussing our efforts to deliver improvement monthly on our website. This is in line with our leakage undertakings.

In addition to the above, and recognising the need to be able to demonstrate that performance is real and subject to appropriate governance and assurance processes, we commissioned PwC to undertake a specific review of our leakage performance to confirm that it was fully in line with Ofwat requirements as set out in our PR14 FD. We are pleased that PwC concluded that they had no concerns on this subject. A full copy of the PwC report has been provided to Ofwat as part of this submission to ensure that you have this additional supporting evidence to consider as you reach your decision. As is usual practice, the PwC report is confidential to Thames Water and Ofwat and will not be released for publication.

In addition to the points captured in this response, the Ofwat team have also asked a number of more technical questions. We have met with Ofwat to discuss our response to each of these points and have also submitted a written response as requested.

We also note Ofwat's statement² that they have used a similar approach with other companies during 2015-20, regarding the proposed intervention on leakage. We have not been subject to any discussions regarding this and so do not consider that it is appropriate for us to comment on bespoke arrangements and adjustments made to PCs at other companies. Our focus, as set out in this detailed response, has been

² [Thames Water – Adjusting for actual performance in 2019-20: Blind year adjustment – Overview](#), page 6, Ofwat, September 2020

to deliver improvements in our leakage performance, with consistency in measurement, appropriate governance and assurance processes and in a transparent way aligned with our PR14 FD.

In summary, we understand why Ofwat wanted us to confirm that our performance on leakage was fully in line with the PR14 FD and IN 16/07 and we have appreciated the opportunity to assist the Ofwat team in more fully understanding our approach. We are confident that the evidence provided in this response, alongside the independent report from PwC, will fully address the concerns that Ofwat set out in their Blind Year consultation document and will allow you to confirm that our final leakage position for 2019-20 was 595 MI/d and therefore no penalty (or reward) is due.

We are proud that we have exceeded our leakage performance commitment for 2019-20. This is a significant achievement for Thames Water and was the result of a great deal of hard work by colleagues across the business. We welcome the opportunity to set the record straight on this issue, and we remain focussed on delivering further improvements on leakage in line with our PC as set out by Ofwat in the PR19 FD.

Proposed adjustment related to Thames Tideway Tunnel

We are grateful for the clarification that you propose to process the revenue element of the BYA for the Thames Tideway Tunnel ("TTT") price control through PR24, as this was not included in the relevant Revenue Forecast Incentive formula in Annex 3 of the notification of the PR19 FD³. This will defer around £2m of revenue until after 2025 through no fault on our part. However, we recognise that it is difficult to amend at this stage and in the spirit of collaboration, we accept this approach. It would be helpful if the BYA decision document made the position clear on the TTT adjustment to be made at PR24.

We have also noticed a number of issues with the inputs and formulae within the In-period adjustment model, specifically relating to marginal tax rates and inflation adjustments.

We appreciate the open and collaborative approach that Ofwat have adopted with regards to the BYA. We are keen to continue working together to ensure that a fair and consistent outcome, aligned with both the regulatory regime and the AMP6 reporting requirements that were applicable to 2019-20, is reflected in both the in-period determination and the BYA.

Should you have any questions or comments on our response, please do not hesitate to contact either myself or my team.

Yours sincerely,



Nicola Cocks
Regulation Director

³ ['Notification of the PR19 final determination of price controls for Thames Water'](#), page 23, Ofwat, December 2019

Appendix 1: Representations on Blind Year Adjustment consultation – September 2020

1. Proposed intervention in respect of the leakage (WC2) ODI payment for 2019-20

Ofwat's BYA consultation proposes an intervention to be made to the 2019-20 leakage ODI payment. We have welcomed the opportunity to engage with Ofwat during the consultation period to better understand the concerns underpinning this proposal and to have the opportunity to assist Ofwat in fully understanding the approach we have taken. We have set out below a detailed summary of our approach and demonstrate that the basis for proposing to intervene was flawed.

We are strongly of the view that the evidence provided in this response, alongside the independent report from PwC, fully addresses the concerns that Ofwat set out in their BYA consultation document and will allow Ofwat to confirm that our final leakage position for 2019-20 was 595 MI/d and therefore no ODI penalty (or reward) is due.

Real performance improvements

We recognise Ofwat's concerns about the need for performance to reflect "real" and not "paper" performance. Ofwat's consultation sets out the expectation that performance needs to be measured and recorded consistently, be subject to appropriate governance and assurance processes and to be transparent.

Given this, and in line with discussions with Ofwat colleagues over the last few months, we have implemented a number of data updates in respect of specific components of our water balance. We have done so because we now have more robust data from our increased number of smart meters and from Bulk Metered Areas ("BMA"). We have been transparent with Ofwat, our stakeholders, our customers and our independent assurers that these updates have been restricted to data only and they have not resulted in any amendments to our methodology. On the contrary, our reviews and analysis did identify additional benefits that could be derived from the smart meter and BMA data but these have been specifically excluded from our reported ODI to ensure a consistent calculation for leakage as we do believe that these would constitute methodology changes.

These data updates allow a more precise allocation of water flows between wastage (plumbing losses) and leakage. Further information is provided in detail below, but in summary, across the AMP period we have seen an increase in wastage and night use. If we did not make these updates to wastage and night use, then our reported leakage would be higher than it really is i.e. we are masking real improvements in our leakage performance. Through the course of AR20 we have been able to use the data from our smart meters in London to better estimate wastage and night use, enabling the correct allocation of water flows between wastage and leakage. Ideally, we would have this as part of our in-year updates as this would have shown a lower leakage for AR16 to AR19 – i.e. AR19 would have been ~24 MI/d lower if we had undertaken these updates annually. We could not do this until the smart meter installations covered a sufficient portion of London. It is important to note that the methodology used to make these updates is

exactly the same as we used in setting our PR14 leakage targets and therefore is reflective of a “real” leakage reduction and is consistent with our PR14 FD methodology.

PR14 Final Determination and Information Notice 16/07

In its BYA – Overview document⁴, Ofwat refers directly to, “the framework and expectations set out in the PR14 FD and subsequent policy statements” and states that:

“We consider methodological changes and data updates reduce consistency and transparency for customers and other stakeholders. When proposing such changes, we expect companies to consider IN 16/07 (May 2016) which sets out our policy in relation to requests for changes to the performance commitments in the 2014 price review company specific appendices.”

We were reassured by the reference to both the PR14 FD and to IN 16/07 as we consider that we have appropriately followed all policy requirements in this respect throughout the AMP6 period.

Referring to Ofwat’s PR14 FD, December 2014⁵, specifically pages 269 - 270, Ofwat states:

“In our methodology statement, we set out our expectation that companies should demonstrate that their PCs can be measured and recorded consistently and that they will have the appropriate governance and quality assurance processes in place to achieve this. We also expect companies to be transparent with customers about their performance against their outcomes and commitments.”

In response to this, our AMP6 Outcomes Reporting Policy⁶, specifically page 7, states:

“In order to provide robust information into our monthly review, we have developed methodology statements which outline the processes and procedures for collecting data and reporting our performance commitments. These statements support the delivery of a consistent approach over time in the data used for our AMP6 outcomes reporting.”

This document demonstrates that we clearly set out our intention to comply with the requirements of the FD in our published Outcomes Reporting Policy. Furthermore, our annual assurance processes, both internal and external, were subsequently scoped in such a way to ensure that this was rigorously adhered to. Specific details of the outcomes of this assurance are included below.

In addition to the FD, Ofwat published IN 16/07 “Changes to outcomes in the 2014 price review company-specific appendices”; this notice clearly sets out what is expected of companies in respect of PCs and ODIs and states:

⁴ [‘Adjusting for company actual performance in 2019-20: Blind year adjustment – overview’](#), Ofwat, September 2020

⁵ [‘Setting price controls for 2015-20 – Final price control determination notice: company-specific appendix – Thames Water’](#), Ofwat, December 2014

⁶ [‘Thames Water – AMP6 Outcomes Reporting Policy’](#), Thames Water, March 2015

“We expect companies to use the definitions and methodologies for their PCs and ODIs as set out in their PR14 company-specific appendices for reconciliation purposes.”

It then goes on to set out the process that is expected to be followed where the company ‘suggests an improvement to the PC’ and, in effect, propose a ‘new measure’.

We have been consistently open and transparent with Ofwat, our Customer Challenge Group (“CCG”) and our customers in respect of the data updates we have made. This has been through meetings, presentations and the publication of our monthly leakage report on our website. We do not consider that any of the data updates we have made constitute a change to either a ‘definition’ or ‘methodology’ and we are firm in our view that we have not proposed a ‘new measure’.

It is our strong contention that the process set out in IN 16/07 does not apply in this instance and was therefore not relevant.

Definitions used for data updates and methodology changes and our approach to ensure consistency of reporting WC2

Reporting of leakage is very complex. The current process of reporting the water balance, and therefore leakage, uses over 600 data points and 22 systems.

To ensure consistency of reporting across the AMP6 period, at the start of the AMP, we set out our definitions and approach to data updates and methodology changes⁷, and how these would be included in our reporting. Specifically:

Data updates (reflecting changes in real water losses): Included in our WC2 ODI leakage reported number.

- Updates in data (annual and in AMP) to reflect changes that have occurred over time between reporting periods.
- Changes forced by circumstance e.g. non-household retail market and the introduction of our new billing system (we change the data source, but as far as possible we ensure that we report the information in the same way).
- These changes are incorporated into our ODI reporting but any changes that have occurred before the base year (AR12) for the setting of the PR14 targets are excluded.

Methodology reporting changes (paper changes): Excluded from our WC2 ODI reported number.

- These are changes in the reporting approach from that taken in the PR14 base year 2011-12.
- These are designed to improve reporting accuracy and move methodology towards Ofwat’s latest reporting guidance and can include the reworking of the original data used.

⁷ ‘Thames Water - Annual Return 2015-16’, Water Delivered, Thames Water, June 2016

- An example is the move away from the Ofwat Table 10 calculation⁸, moving from assuming all non-household properties are externally metered, to deriving leakage based on understanding how many properties are externally metered and how many are internally metered.
- These changes cause a step change in the reporting approach and therefore are excluded from ODI reporting, although incorporated into shadow reporting.

Because there are so many data points that go into the water balance, we do not update every data point every year. All major data items are updated every year (yearly updates) but some items are updated less frequently. These are referred to as “in AMP” data updates. An example of this is our reservoir leakage reporting:

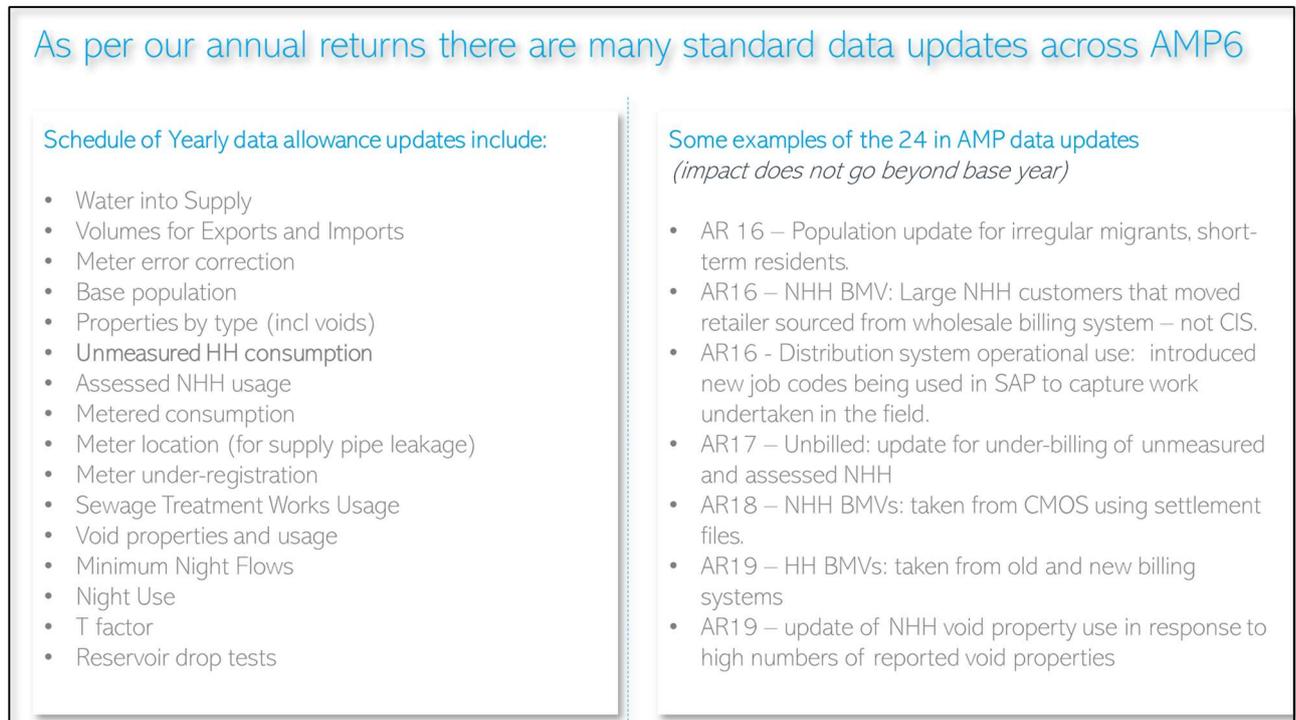
- we use drop tests (part of the 10-year statutory inspection) to evaluate the leakage for service reservoirs;
- a drop test need only be undertaken once every 10 years, so about 10% of our reservoirs have new drop tests each year; and
- every year we update the list of reservoirs to reflect change of network configuration (i.e. is it inside or outside our Flow Monitoring Zone (“FMZ”) functional sets) and if any reservoirs have been decommissioned, taken out of service, or put back into service.

Data is updated each year using the specific service reservoir tests completed in the year.

The following figure (as presented to Ofwat on 5 October 2020) provides the high-level summary/example data updates split between “annual update” and “in-AMP update”.

⁸ [‘June return reporting requirements and definitions manual 2011 \(Issue 1.1\)’](#), 04_Non_Financial_Measures, Chapter 10: Non-financial measures - Water delivered, Ofwat, March 2011

Figure 1: Standard AMP6 data updates for Annual Return reporting



Source: Thames Water

We have met with you on several occasions and answered a number of questions in writing. These included technical areas of the water balance, for example:

- the annual Maximum Likelihood Estimation (“MLE”) water balance calculations for each of the 5 years of AMP6;
- confidence intervals used in the MLE calculations throughout the AMP6 period with justifications for changes;
- the reporting of non-household measured consumption by MOSL; and
- minor components of the water balance (operational use and unbilled consumption) and the increase in numbers of reported void properties.

We have not repeated these technical aspects here but ask Ofwat to consider documents TMS-BYR-06 and TMS-BYR-07, which have already been submitted to you, in parallel with this response. Our responses on these technical elements demonstrate that we remain confident in our reported leakage figure.

In our reporting of leakage (WC2) for AR20⁹ our reported leakage figure of 595 MI/d only includes data updates. As stated above, this is to ensure that we continue to report leakage consistently with our PR14 leakage targets. Prior to APR20 we had not updated our household ‘night use’ and ‘wastage’ allowances.

⁹ [‘Annual report 2019-20’](#), Thames Water, June 2020

We last updated these for JR06. The introduction of smart meters and bulk meters allowed us to update these components of our water balance. Our methodology has remained the same throughout the AMP period, with the process of:

- basing our understanding of wastage and night use on a sample of properties that are “measured” (at high frequency) but behave as “unmeasured”;
- understanding wastage and night use in the panel and ensuring we exclude customer side leakage (through field investigations for continuous flows); and
- extrapolating wastage and night use to the unmeasured population ensuring that any known bias in the panel is compensated for.

The original study collected meter read data at 15-minute intervals at the sample properties to understand continuous flows and customer use during the night. It involved undertaking field investigations to prove whether the continuous flows were supply pipe leakage or wastage (plumbing losses within the property). It then extrapolated the results to the company using property type, customer type and occupancy.

We went to great lengths to use the smart meter and bulk metered area data in exactly the same way as the original study, and we used exactly the same parameters for property type, customer type and occupancy to extrapolate the results to the whole population of London. Throughout the process, our Independent Assurers, PwC, scrutinised the approach to ensure that the methodology used for ODI leakage reporting was entirely consistent with the original study.

As the original study was completed for JR06, and our PR14 leakage targets were set off the AR12 base year, Artesia (leading experts in the analysis of water use and leakage) were appointed by us to support the updates to the wastage and night usage data. They identified the trend that occurred over the period from 2005-06 to 2019-20 and excluded any change that occurred prior to 2011-12 (the PR14 base year).

In addition, we currently only have smart meter data available in London. Therefore, we only extrapolated the results to London and not to Thames Valley. This meant that we continued to over-report leakage in the Thames Valley area by using the older allowances for wastage and night use.

The identified increase in wastage and night use is not a surprise. There has been growing evidence from industry research that “leaky-loos” are becoming a more common cause of water loss and presently about 5% of homes in the UK have a leaky-loo, with the average water loss being between 215 and 400 litres per day¹⁰. The ‘leaky loo’ issue stems from a change in regulations around 2000 to allow the fitting of dual flush WCs with a smaller maximum flush volume. Because of this, syphon flush cisterns have been progressively replaced by ‘drop valve’ cisterns (which have a propensity to leak) and cistern overflows that now feed into the WC bowl (making dripping inlet valves more difficult to spot). Using Defra’s Market

¹⁰ [‘Leaky Loos – Summary Position Statement’](#), Waterwise, May 2019

Transformation Programme (“MTP”) report¹¹ data it is estimated that in 2011 the number of “potentially” leaky loos was around 3%. By 2019 it was about 80% and about 85% in 2020.

If we did not update our allowance for wastage and night use, then we would be incorrectly reporting the increase in wastage (plumbing losses) seen inside customers’ properties since 2012 as an increase in leakage. This would in effect redefine “leakage” to now include losses within the property, and this would introduce inconsistency in our leakage reporting. By updating the data to reflect the evidence gathered of increased wastage and night use we have ensured that reported leakage performance is consistent with the PR14 PC and in line with Ofwat’s requirements¹².

To illustrate the effect, we have calculated our AMP6 leakage targets with the increase in wastage incorporated. This shows that our leakage target for AR20 would have been 630 MI/d rather than 606 MI/d if we had not updated for the more accurate wastage data. This is provided on the bottom row of the following figure.

Figure 2: AMP6 leakage (WC2) targets

WC2: Leakage Target (MI/d)	AR 16	AR 17	AR 18	AR 19	AR 20
As set at PR14	649	630	620	612	606
Including for increasing wastage/night use	661	645	638	633	630

Source: Thames Water

Reductions in leakage between 2018-19 and 2019-20

The large reductions in reported leakage have been driven through a company wide effort to address leakage. There has been a significant increase in the level of detection and repair activity over the last two years. Some of the activity delivered during 2019-20 is set out below.

- We delivered an estimated 436 MI/d of benefit through detection and repair of leaks. We estimate that 322 MI/d of activity is required to fix the leaks that break out in an average year and so we exceeded the amount of work that would have been required to “hold” leakage constant by over 100 MI/d.
- We have also improved our repair times by 65%, with detected mains leaks now repaired three times faster than in 2017.
- Benefits derived from metering through the installation of non-revenue meters on private mains and subsequent detection and repair of supply pipe leakage delivered 20% above target and 40% of the AMP benefit.

¹¹ [‘Market Transformation Programme - BNWAT08: Modelling projections of water using products’](#), Defra, 2011

¹² [‘Reporting guidance – Leakage’](#), Ofwat, March 2018

- We also delivered 15 MI/d of pressure management and mains replacement.

Our reported reduction in leakage is backed up by a similar reduction in distribution input (water put into supply). The daily average distribution input in 2019-20 was 89 MI/d less than that for 2018-19.

Assurance that our changes are consistent with our regulatory requirements

At the start of AMP6 we documented our methodology for the calculation of leakage performance and the related ODI. We engaged with KPMG, our auditors at the time, to perform a set of Agreed Upon Procedures (“AUPs”) to evaluate our methodologies. As part of this assurance work, KPMG assessed our methodologies and the associated method statements to ensure consistency with:

- our externally published ‘AMP6 Outcomes Reporting Policy’ and associated annexes;
- Ofwat reporting guidance on the Annual Performance Report; and
- where relevant, guidance produced by the appropriate regulatory bodies (e.g. Environment Agency, Drinking Water Inspectorate).

KPMG’s review of the methodology for WC2 leakage was rated as green across all AUPs.

The methodology, as set out above, has been the starting position for all year end assurance and submissions throughout the AMP period.

KPMG continued as our auditors for the first three years of the AMP, (2015-16, 2016-17 and 2017-18). KPMG had no adverse findings in respect of our final published year end leakage performance during any of those years.

PwC were appointed as our auditors for the final two years of the AMP (2018-19 and 2019-20). PwC had no adverse findings to report in respect of our final published year end leakage performance for either of those years.

On the appointment of PwC in 2018-19, we further increased the level of assurance over Table 3A (Outcome performance table) of the APR and other elements of our non-financial performance from AUPs to a ‘Limited Assurance Engagement’ in accordance with the International Standard on Assurance Engagements 3000 (Revised) ‘Assurance engagements other than audits or reviews of historic financial information’ (ISAE 3000 (Revised)).

Specifically, for Table 3A and our PC outcomes, the scope for 2019-20 included:

1. verifying that the methodology statements used in the calculation are consistent with the Ofwat criteria set out in the Thames Water Company Specific PR14 FD and any subsequent agreed changes to this methodology;
2. validating, for all PCs, that the calculations used to derive the reported performance levels aligned with our reporting criteria; and
3. assessing the validity of all management estimates and judgements that were used to derive the reported performance levels.

In addition to the above, and as previously discussed with Ofwat, in recognition of the importance of our leakage performance for both Section 19 and ODI purposes, PwC also undertook work that would be considered 'over and above' what would normally be undertaken for our PCs. This is consistent with our approach to assurance for leakage set out in our Data Assurance Summary 2019-20¹³ published on our website. At all times, PwC were testing that we had remained consistent with the methodology set at the start of the AMP.

As we confirmed to Ofwat in our response to APR query TMS-BYR-04, PwC concluded that we were consistent in our methodology i.e. that our updates were restricted to data only and that we had processed the data in line with our stated methodology. We note that Ofwat has previously asked us to confirm if PwC formed the view that, "the inclusion of *methodological updates* was consistent with the methodology we employed in formulating our performance commitments for PR14". PwC did not specifically form this view because they concluded that our updates were restricted to data updates only and did not amount to a change in methodology. This means that there were no "methodological updates" for PwC to consider.

PwC's overall report in respect of the limited assurance engagement is included on page 234 of our Combined Report – Annual Report, Annual Performance Report and Sustainability Report 2019-20¹⁴. PwC's overall conclusion was:

"Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information for the year ended 31 March 2020 has not been prepared, in all material respects, in accordance with the Reporting Criteria."

In summary, in all five years of the AMP6 period, the scope of the year end work in respect of all of our PCs has included confirmation that the PC has been prepared in all material respects in accordance with the agreed methodology set for PR14. In 2019-20, and all previous years, we have reported WC2 to be consistent with the PR14 FD through incorporating only "data updates". Any potential methodology changes that have been identified throughout the AMP have been excluded from our AMP6 leakage reporting of WC2. They have only been applied to the "shadow" leakage measure as permitted.

In short, our leakage performance has been achieved through delivery of real performance improvements as demonstrated above. This is fully consistent with Ofwat's consultation on BYA which sets out the expectation that performance needs to be measured and recorded consistently, be subject to robust governance and assurance processes and to be transparent. Accordingly, the proposed intervention in respect of the 2019-20 leakage ODI is not warranted and we strongly contend that Ofwat should confirm that our final leakage position for 2019-20 was 595 MI/d and therefore no ODI penalty (or reward) is due.

¹³ [Data Assurance Summary 2019-20](#), Thames Water, June 2020

¹⁴ [Annual report 2019-20](#), Thames Water, June 2020

2. Removal of underperformance payment for SEMD compliance (WB7)

We note that Ofwat have decided to remove the penalty associated with our AMP6 delivery of our SEMD programme. This is because it is considered that customers' interests are best served if all outputs that were not forecast to be delivered, at the time of the PR19 FD, are reconciled using the PR19 performance commitment. We welcome this adjustment.

3. Marginal tax rate used in Blind Year Adjustment financial models

We notice that in the BYA In-period adjustment model a tax rate of 19% is being applied to the calculation of our adjustments ("In-period-adjustment-model_TMS_BYRun1.xlsx", 'Inputs' tab, cell P72), however in the PR19 FD Financial model a tax rate of 0% is calculated for the water network plus price control ("Financial-model_TMS_FD.xlsx", 'Water Network' tab, row 1814). In addition, the contribution from tax to our allowed revenues for the water network plus price control is set as zero in the PR19 FD¹⁵.

We therefore believe that the BYA In-period adjustment model needs correcting to align to the 0% tax rate used in the PR19 FD.

4. Other miscellaneous errors in the Blind Year Adjustment financial models

We have noticed a number of other minor errors in the BYA In-period adjustment model ("In-period-adjustment-model_TMS_BYRun1.xlsx") that are detailed below. References to the "Model" in this section should be read as relating to the aforementioned BYA In-period adjustment model.

- In the Model ('Inputs' tab, row 74), we noticed that the November CPIH indices for AMP7 were left blank. For the avoidance of doubt, we expect these cells to be populated with the most recent forecast available as at the time of publication of the final model.
- In the Model, the 2020-21 Dummy (TTT) K-factor is pre-populated with zero ('Inputs' tab, cell O132) which does not match the value (-19.73%) presented in the PR19 FD¹⁶. We recognise that the "Allowed revenue starting point in FD" ('Inputs' tab, cell N131) is pre-populated such that the allowed revenues for subsequent years (e.g. 'Dummy control' tab, row 39) are as expected. However, for clarity we suggest that the Model is populated with the K-factors as stated in the PR19 FD.
- We note the improvement made to the Model ('Abatements and deferrals' tab, rows 111 – 129) which adds an inflation adjustment to the ODI payments (restating from 2017-18 FYA CPIH to

¹⁵ ['PR19 final determinations: Thames Water final determination'](#), table 4.1, page 61, Ofwat, December 2019

¹⁶ ['Notification of the PR19 final determination of price controls for Thames Water'](#), table 2A, page 8, Ofwat, December 2019

2017-18 November CPIH). However, we have the following comments regarding the deflation factor applied, as shown in row 111 and exported from the 'Index' tab, cell F18.

- i. The factor seems to be calculated incorrectly on the 'Index' tab, cells F16 - F18. We suggest revising the formulae in these cells, as follows:

Table 1: Formulae amendments required on 'Index' tab

Cell reference	From	To	Revised value
Index!F16	= Inputs!F83	= Inputs!K74	101.800
Index!F17	= Inputs!F88	<i>No change</i>	104.217
Index!F18	= F17 / F16	= F16 / F17	0.977

Source: Thames Water

- ii. The label in cell E18 on the 'Index' tab does not match the expected calculation. We propose revising the label from "CPIH deflation factor from 2019-20 FYA to 2017-18 Nov" to "CPIH deflation factor from 2017-18 FYA to 2017-18 Nov".
- iii. Similarly, the label in cell D113 on the 'Abatements and deferrals' tab needs amending from "Payments after abatements and deferrals (2017-18 November CPIH prices)" to "Payments after abatements and deferrals (2017-18 FYA CPIH prices)".

With these revisions in effect, the output of this inflation adjustment is presented in a price base that is consistent with further operations within the Model, such as cell P44 on the 'Water network plus' tab.