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PR24 Data Table Assurance

The attached report has been prepared to describe the assurance undertaken for the data tables which accompanied Northumbrian Water Limited's PR24 submission on 2 October 2023.

The process we have used is described in the attached and was undertaken over a shorter period than would have been ideal as we understand that elements of the business plan were held back to allow more time for amendments from Government and regulators.

That being said, we were able to conclude our work as described in the attached. We found no material errors in the data tables that we reviewed that were not subsequently corrected and that all forecasts could be substantiated to a documented methodology.

I am therefore confident to recommend these data tables as being robust based on the assurance work that we have completed.

Lynn O'Brien
Internal Audit Manager
Northumbrian Water Limited
2 October 2023

INTERNAL AUDIT
REPORT ON PR24 DATA ASSURANCE

living water

Introduction

Our approach to data tables assurance is outlined in appendix A2 to our business plan (https://www.nwg.co.uk/globalassets/business-plan-2025-30/nes03.pdf) in particular in section 7 of that appendix.

Our Approach

We have a multi-layered approach to assurance of the data tables that involve the following roles:

Data Provider	This is the main owner of the data they are responsible for ensuing that the data is of good quality, supported with a methodology and be the main liaison with the assurance provider.
Data Reviewer	This is a peer review of the data, the reviewer ensures that all of the above responsibilities have been carried out.
Pre-audit check	This is a member of our Economic Regulation team who understand the structure of the tables and also the guidance in detail. This is an additional step for PR24 (over and above the process we follow for APR) and adds additional review and challenge from a regulatory viewpoint.
Assurance Provider	At this stage the data lines are provided to the relevant assurance provider (either Internal Audit or our external Technical Assurance Partner.
Senior Manager	A final sign off post audit by a member of our Executive Leadership Team.

The above process is controlled by a rigid workflow system which means that it has to be moved on from each stage to the next and if at any point it is sent back to data provider (as the data can only be amended by them) then it has to follow all of the steps back.

This robust approach ensures that we have several control points in the process to ensure that our data is of good quality

Allocating Assurance Provider

We have a risk-based approach to the allocation of work between ourselves and our Technical Assurance Partner who is Price Waterhouse Coopers (“PwC). They have been our partners for 6 years and were involved in PR19 assurance as well as every APR in between and now PR24. We have entered into a contract with them which runs until the end of 2025.

For our Annual Performance Report (APR) we risk assess the areas of non financial reporting. This is more fully described in our Data Assurance Statement (Data Assurance Statement 2022/23) This risk assessment is based on a combination of the complexity of collecting the data and the relative importance of that data (eg performance commitments are more important than cost assessment data) albeit we want all of our data to be good quality. For APR all of the financial tables are assured by our financial auditor Deloitte.

This risk assessment means that our Technical Assurance Partner assures principally water resources (including leakage), water quality, sewage treatment works compliance as well as all related data such as properties and populations and we, in Internal Audit, would review all other non financial data. This gives us roughly 50% of the data lines each.

For PR24 we allocated the non financial data lines on the same basis as for APR so all water resources, water quality etc lines were allocated to PwC while all of the other non financial, plus financial forecasts were allocated to Internal Audit.

Our Approach

As each table was presented to us for assurance we first of all agreed any historic data back to APR or, where there was no APR equivalent, to our source data.

We then reviewed the forecasting methodology and made an assessment as to its appropriateness. At this point we referenced relevant guidance to ensure that this had been considered.

Once we were happy with this methodology we ensured that the data had been properly calculated and reported in accordance with this methodology.

Our Findings

- The process described in “Our Approach” above was followed in all instances.
- There were no errors identified that were not corrected by the Data Provider and progressed back through the process.
- All tables were processed through the Assurance Provider to Senior Manager and ultimately to completion.

Conclusion

We are able to certify that that the data tables we reviewed were produced in accordance with the guidance. They were supported by source system data if historic and substantiated by an agreed methodology where they were forecasts.

We are therefore able to recommend the submission of these tables to OFWAT.

PR24 data tables

Observations from our procedures

Northumbrian Water Limited

pwc

Strictly private and confidential

Strictly private and confidential
Northumbrian Water Limited
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Observations in relation to selected information within Northumbrian Water Limited's Performance Reporting 2024 ('PR24').

Dear Sirs,

We are pleased to enclose our report in respect of our insight and observations over specific aspects of your non-financial Performance Reporting 2024 information for AMP8, the five year period ended 31 March 2030 (the full scope of our work can be found in Appendix 1).

The primary purpose of this report is to communicate our approach to the work, and the significant observations that we believe are relevant to those charged with governance.

I would like to thank all of the team at Northumbrian Water Limited for their assistance in helping us during the course of our work, and to prepare our report.

Yours faithfully

Dan Pearson
Partner

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Executive summary

Background and purpose

As part of the Price Review 2024 ('PR24') process, you are required to submit a business plan to Ofwat, alongside non-financial information to support your financial plan.

You have asked us to perform procedures over select non-financial data points to be submitted as part of your PR24 business plan, and report to you our insights and observations.

This document presents those findings on a line-by-line basis (Appendix 1).

Our approach

In performing our work, we have used the following four-step assessment process for each of the PR24 lines and tables within our scope:

1. **Understand the processes and the data**
   In order to best inform our review, we first gained an understanding of your reporting process for each line by performing interviews, walkthroughs and limited evidence inspection. As there is a large degree of overlap between the scope of our PR24 work, and the limited assurance work we have performed over your Annual Performance Report ('APR'), we combined this understanding phase where possible.
2. **Risk assessment**
   Understood how you have interpreted the Ofwat guidance for each data point and assessed whether this is appropriate. Additionally, we assessed the risk of misstating each data point and the likelihood of occurrence, whether deliberate or by error. Similarly, to above, our risk assessment for the PR24 data points leveraged our mirror process for the APR, but with consideration also given to the forward-looking element of the PR24 data tables.
3. **Design and execute our test procedures**
   We have designed bespoke test procedures for each data point which primarily comprised of:

- Agreeing the baseline and historic figures reported back to the figures reported in previous APR submissions;
- Assessing the methodology undertaken to prepare forecasts of how the 2022/23 figures are expected to change over the period 2025-2030 (and in some specific cases, beyond 2030);
- Considering the implementation of Ofwat guidance in how management has prepared the PR24 figures; and
- Corroborating the forward looking data where possible (including reconciling the information disclosed to any underlying data), and challenging management on the assumptions used in compiling the performance forecasts. We also considered the accuracy and completeness of the reported data through inspection and testing of underlying forecasting models.

4. **Conclude and report**

Key findings

Through the procedures we performed over the non-financial data points within our scope, we did not observe any themes to the misstatements identified that were consistent or pervasive across the business plan. This is testament to the strong focus on data quality that we have observed over a number of years whilst providing you with non-financial assurance over your Annual Performance Report data tables.

This meant there was robust baseline data available that could be used to determine forecasts across the Business Planning period. We also noted that Data Providers had a good understanding over their data and the methodologies being applied to forecast this data, which was supported with evidence and explanations that linked to the Business Plan narrative.

Whilst some errors were noted through the procedures we performed, these were generally simple in nature and easily resolved by the data preparers.

Our review procedures

Scope

At a high level, the scope of our review and procedures over the PR24 corresponds to non-financial reporting in relation to Performance Commitments/Outcome Delivery Incentives, Water Resources, Bioresources, Pollution, Sewage Treatment Works, Water Distribution (including leakage and demand/supply side interventions) and Properties and Population. Our scope is explored in detail, on a line by line basis, in Appendix 1.

Approach

In delivering our work, we have performed procedures over historic information, has been used, alongside relevant assumptions and calculations, to generate a forecast of NWL's expected performance for each of the PR24 areas within our scope.

Note that unlike our approach to your Annual Performance Reporting, this review does not constitute a limited assurance engagement in accordance with the International Standard on Assurance Engagements 3000 (Revised) 'Assurance engagements other than audits or reviews of historical financial information' ('ISAE 3000'), issued by the International Auditing and Assurance Standards Board, which requires the subject matter under review to be historic in nature, rather than including future-looking information.

Where we have identified observations, we have reported these to you. Where relevant, once management had taken action to address our findings, we then re-visited those PR24 lines to determine whether the issue had been remediated.

The four steps associated with our approach are explored below

1. **Understand the processes, controls and data**

In the APR Technical assurance engagement, we gained a detailed understanding of the data points within the scope of our PR24 engagement. To further build this understanding, we:

- Met with process, business and data owners for each data point to walkthrough the data measurement, recording, collation and reporting processes and controls; and
- Reviewed the Ofwat guidance ('PR24 business plan table guidance'), describing the methodology that has been adopted to report the non-financial information.

2. **Risk assessment**

Based upon the understanding we gained for each data point within our scope, we assessed the risk associated with each data point in the forecast performance reporting over AMP8/PR24 reporting.

The outcome of this risk assessment process then informs our practical approach to testing (Step 3).

3. **Design and execute test procedures**

We designed our test procedures for each data point individually based on the specific facts and circumstances identified in the previous steps in our approach to the work.

At a high level, we designed our test procedures in line with the following approach:

- **High level analysis** – Performing a fluctuation analysis on the trends/movements in the PR24 forecasts to assess whether the magnitude of the forecasts makes sense given what we know about the business and the industry, and in light of any explanations provided by management;
- **Reconciliation to the APR / WRMP** – Reconcile the baseline figures disclosing the 2022/23 figures in the PR19 tables to the work performed on APR (where the line titles are an exact match between APR and PR19) and/or the Water Resource Management Plan;
- **Validate assumptions made** – Where specific assumptions have been made which drive changes in the baseline 2022/23 figure over AMP8, we have sought to sense-check these assumptions against our knowledge of the industry and to inspect corroborating information which help to validate the appropriateness of these assumptions;
- **Re-performance of calculations** – Having tested, validated and cross-referenced the inputs to forecasting calculations, we then independently re-performed the calculations in order to determine whether we reached the same result; and
- **Comparison against Ofwat guidance** – Our final procedure type is to check your approach to producing PR24 forecasts against the requirements within the Ofwat guidance, so as to make sure that the scope and boundaries of your reporting have been set correctly, and that any mandated assumptions or methodologies have been adopted.

4. **Report our observations**

This report contains details of our key findings on a line by line basis in Appendix

Appendices

Appendix 1 – Our scope and observations

This appendix presents all of the non-financial data points within the scope of our work, including the observations from our procedures, where relevant, against each data point.

Where observations have been noted, this represents that we have identified differences beyond a tolerable threshold (set on the line-by-line basis) and the extent to which these observations have been addressed in the submitted version of the data tables.

In some instances, whilst not beyond the defined tolerable thresholds mentioned above, where we have identified internal inconsistencies between reported datasets (e.g. minor differences, of less than 1%, between the same data point reported more than once across the Business Plan data tables, or between Business Plan data tables and historic APR reporting). Due to their minor nature, observations of this sort are not reported in the table below, but impact data lines OUT1.35, OUT1.39, OUT1.43, OUT2.39, OUT4.25, OUT4.48, OUT4.52, OUT4.57, OUT4.61, OUT4.66, OUT4.70, OUT4.74, OUT4.78, LS1.19 and LS1.24.

Where no observations are listed, this means we have not identified any differences beyond our tolerable thresholds. Where observations are listed, any actions taken by management to resolve or remediate the observation have been detailed in bold.

Line ref	Line title	Observations from initial procedures
OUT1.2	Compliance risk index (CRI)	
OUT1.35	Total annual leakage (aligned with historical reporting)	
OUT1.36	Total annual leakage (aligned with PR24 reporting)	
OUT1.37	Per capita consumption (aligned with historical reporting)	
OUT1.39	Total annual leakage (aligned with historical reporting)	
OUT1.40	Total annual leakage (aligned with PR24 reporting)	
OUT1.41	Per capita consumption (aligned with historical reporting)	
OUT1.43	Total annual leakage (aligned with historical reporting)	
OUT1.44	Total annual leakage (aligned with PR24 reporting)	
OUT1.45	Per capita consumption (aligned with historical reporting)	
OUT2.2	Compliance risk index (CRI)	
OUT2.3	Customer contacts about water quality	
OUT2.9	Leakage	

Line ref	Line title	Observations from initial procedures
OUT2.10	Per capita consumption	
OUT2.11	Business demand	
OUT2.12	Total pollution incidents	
OUT2.13	Serious pollution incidents	
OUT2.15	Bathing water quality	
OUT2.16	River water quality (phosphorus)	We identified that differing approaches had been used to calculate River water quality (phosphorus) in OUT2.16 and LS1.16 and so the two data lines present differing results for River water quality (phosphorus).
OUT2.19	Unplanned outage	
OUT2.21	Leakage - region 1	
OUT2.22	Leakage - region 2	
OUT2.23	Per capita consumption - region 1	
OUT2.24	Per capita consumption - region 2	
OUT2.25	Business demand - region 1	
OUT2.26	Business demand - region 2	
OUT2.33	Total annual leakage (aligned with historical reporting)	
OUT2.34	Total annual leakage (aligned with PR24 reporting)	
OUT2.35	Per capita consumption (aligned with historical reporting)	
OUT2.36	Per capita consumption (aligned with PR24 reporting)	
OUT2.37	Total annual leakage (aligned with historical reporting)	
OUT2.38	Total annual leakage (aligned with PR24 reporting)	
OUT2.39	Per capita consumption (aligned with historical reporting)	
OUT2.40	Per capita consumption (aligned with PR24 reporting)	
OUT2.41	Total annual leakage (aligned with historical reporting)	

Line ref	Line title	Observations from initial procedures
OUT2.42	Total annual leakage (aligned with PR24 reporting)	
OUT2.43	Per capita consumption (aligned with historical reporting)	
OUT2.44	Per capita consumption (aligned with PR24 reporting)	
OUT4.7	Resident population (water) (calendar year)	
OUT4.8	Number of contacts - taste and odour	
OUT4.9	Number of contacts - discoloration	
OUT4.25	Distribution input (per day)	
OUT4.31	Total annual leakage	
OUT4.35	Total annual leakage	
OUT4.39	Total annual leakage	
OUT4.43	Total household consumption	
OUT4.44	Total household population	
OUT4.48	Total dry year household consumption	
OUT4.52	Total household consumption	
OUT4.53	Total household population	
OUT4.57	Total dry year household consumption	
OUT4.61	Total household consumption	
OUT4.62	Total household population	
OUT4.66	Total dry year household consumption	
OUT4.70	Total business consumption	
OUT4.74	Total business consumption	
OUT4.78	Total business consumption	
OUT4.81	Number of pollution incidents - category 1 (water)	
OUT4.82	Number of pollution incidents - category 2 (water)	
OUT4.96	Peak week production capacity	
OUT4.97	Unplanned outage - actual	
OUT5.28	Volume of wastewater receiving treatment	

Line ref	Line title	Observations from initial procedures
OUT5.33	Number of pollution incidents - category 1 (wastewater)	
OUT5.35	Number of pollution incidents - category 2 (wastewater)	
OUT5.37	Number of pollution incidents - category 3 (wastewater)	
OUT5.39	Number of pollution incidents - category 4 (wastewater)	
OUT5.51	Number of 'poor' bathing waters	
OUT5.52	Number of 'sufficient' bathing waters	
OUT5.53	Number of 'good' bathing waters	
OUT5.54	Number of 'excellent' bathing waters	
OUT5.63	Phosphorus emitted in 2020 from treatment works that had a phosphorus limit for the latest calendar year.	
OUT5.64	Phosphorus emitted in the latest calendar year from treatment works that had a phosphorus limit.	
OUT5.65	Phosphorus prevented from entering rivers from partnership working	
OUT8.1	Water quality compliance (CRI)	
OUT8.3	Leakage	
OUT8.4	Per capita consumption	
OUT8.6	Unplanned outage	We identified that the unplanned outage % reported for 23/24 is reported to 0 decimal places as opposed to the required 2 decimal places. As such, the figure has been reported as 3 instead of 3.35 (a 12% difference).
OUT8.8	Pollution incidents	
OUT8.10	Treatment works compliance	
OUT8.11	Visible leak repair time	
OUT8.12	Voids	
OUT8.14	Discoloured water contacts	
OUT8.15	Taste and smell contacts	

Line ref	Line title	Observations from initial procedures
OUT8.16	Event Risk Index	We identified that differing approaches had been used to calculate Event Risk Index performance in OUT8.16 and CW6.30 (with starting from historic data only, and one considering 23/24 performance year to date) and so the two data lines present differing results for Event Risk Index in 23/24.
OUT8.18	Abstraction incentive mechanism (AIM)	
OUT8.34	Bathing water compliance	
CW4.1	Total number of balancing reservoirs	
CW4.2	Total volumetric capacity of balancing reservoirs	
CW4.3	Total number of raw water transport stations	
CW4.4	Total installed power capacity of raw water transport pumping stations	
CW4.5	Total length of raw water transport mains and other conveyors	
CW4.6	Average pumping head ~ raw water transport	
CW4.7	Energy consumption – raw water transport (MWh)	
CW4.8	Total number of raw water transport imports	
CW4.9	Water imported from 3rd parties to raw water transport systems	
CW4.10	Total number of raw water transport exports	
CW4.11	Water exported to 3rd parties from raw water transport systems	
CW4.12	Total length of raw and pre-treated (non-potable) water transport mains for supplying customers	
CW4.43	Peak week production capacity	
CW4.44	Peak week production capacity having enhancement expenditure for grey solution improvements to address raw water quality deterioration	
CW4.45	Peak week production capacity having enhancement expenditure for green solutions improvements to address raw water quality deterioration	

Line ref	Line title	Observations from initial procedures
CW4.47	Number of treatment works requiring remedial action because of raw water deterioration	
CW4.48	Zonal population receiving water treated with orthophosphate	
CW4.49	Average pumping head – water treatment	
CW4.51	Total number of water treatment imports	
CW4.52	Water imported from 3rd parties to water treatment works	
CW4.53	Total number of water treatment exports	
CW4.54	Water exported to 3rd parties from water treatment works	
CW4a.1	Total number of balancing reservoirs	
CW4a.2	Total volumetric capacity of balancing reservoirs	
CW4a.3	Total number of raw water transport stations	
CW4a.4	Total installed power capacity of raw water transport pumping stations	
CW4a.5	Total length of raw water transport mains and other conveyors	
CW4a.6	Average pumping head ~ raw water transport	
CW4a.7	Energy consumption – raw water transport (MWh)	
CW4a.8	Total number of raw water transport imports	
CW4a.9	Water imported from 3rd parties to raw water transport systems	
CW4a.10	Total number of raw water transport exports	
CW4a.11	Water exported to 3rd parties from raw water transport systems	
CW4a.12	Total length of raw and pre-treated (non-potable) water transport mains for supplying customers	
CW4a.43	Peak week production capacity	

Line ref	Line title	Observations from initial procedures
CW4a.44	Peak week production capacity having enhancement expenditure for grey solution improvements to address raw water quality deterioration	
CW4a.45	Peak week production capacity having enhancement expenditure for green solutions improvements to address raw water quality deterioration	
CW4a.47	Number of treatment works requiring remedial action because of raw water deterioration	
CW4a.48	Zonal population receiving water treated with orthophosphate	
CW4a.49	Average pumping head – water treatment	
CW4a.51	Total number of water treatment imports	
CW4a.52	Water imported from 3rd parties to water treatment works	
CW4a.53	Total number of water treatment exports	
CW4a.54	Water exported to 3rd parties from water treatment works	
CW5.1	Total installed power capacity of potable water pumping stations	
CW5.2	Total volumetric capacity of service reservoirs	
CW5.3	Total volumetric capacity of water towers	
CW5.4	Water delivered (non-potable)	
CW5.5	Water delivered (potable)	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.6	Water delivered (billed measured residential properties)	

Line ref	Line title	Observations from initial procedures
CW5.7	Water delivered (billed measured businesses)	
CW5.8	Proportion of distribution input derived from impounding reservoirs	
CW5.9	Proportion of distribution input derived from pumped storage reservoirs	
CW5.10	Proportion of distribution input derived from river abstractions	
CW5.11	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	
CW5.12	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	
CW5.13	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	
CW5.14	Proportion of distribution input derived from saline abstractions	
CW5.15	Proportion of distribution input derived from water reuse schemes	
CW5.16	Total number of potable water pumping stations that pump into and within the treated water distribution system	
CW5.17	Number of potable water pumping stations delivering treated groundwater into the treated water distribution system	
CW5.18	Number of potable water pumping stations delivering surface water into the treated water distribution system	
CW5.19	Number of potable water pumping stations that re-pump water already within the treated water distribution system	
CW5.20	Number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system	
CW5.21	Total number of service reservoirs	
CW5.22	Number of water towers	
CW5.24	Average pumping head – treated water distribution	

Line ref	Line title	Observations from initial procedures
CW5.25	Total number of treated water distribution imports	
CW5.26	Water imported from 3rd parties to treated water distribution systems	
CW5.27	Total number of treated water distribution exports	
CW5.28	Water exported to 3rd parties from treated water distribution systems	
CW5.29	Peak 7 day rolling average distribution input	
CW5.31	Measured household consumption (excluding supply pipe leakage)	
CW5.32	Unmeasured household consumption (excluding supply pipe leakage)	
CW5.33	Measured non-household consumption (excluding supply pipe leakage)	
CW5.34	Unmeasured non-household consumption (excluding supply pipe leakage)	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.35	Total annual leakage	
CW5.36	Distribution system operational use	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**

Line ref	Line title	Observations from initial procedures
CW5.37	Water taken unbilled	
CW5.38	Distribution input	
CW5.39	Distribution input (pre-MLE)	
CW5.40	Measured household consumption (excluding supply pipe leakage)	
CW5.41	Unmeasured household consumption (excluding supply pipe leakage)	
CW5.42	Measured non-household consumption (excluding supply pipe leakage)	
CW5.43	Unmeasured non-household consumption (excluding supply pipe leakage)	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.44	Total annual leakage	
CW5.45	Distribution system operational use	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.46	Water taken unbilled	
CW5.47	Distribution input	
CW5.48	Distribution input (pre-MLE)	

Line ref	Line title	Observations from initial procedures
CW5.49	Measured household consumption (excluding supply pipe leakage)	
CW5.50	Unmeasured household consumption (excluding supply pipe leakage)	
CW5.51	Measured non-household consumption (excluding supply pipe leakage)	
CW5.52	Unmeasured non-household consumption (excluding supply pipe leakage)	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.53	Total annual leakage	
CW5.54	Distribution system operational use	The demand forecast was built using 21/22 data as a baseline (forecasting 22/23 data onwards). This resulted in a difference in the 22/23 figure to that reported in the APR, and the forecast would have produced a different result if 22/23 actuals were used as the baseline year. Due to the timing of creating the demand forecast and the production of the APR data, management decided to continue using 21/22 as the baseline. **As suggested, management resolved the potential for confusion here by adding a commentary alongside this table to explain the approach and reason for the difference in 22/23 figures to the APR.**
CW5.55	Water taken unbilled	
CW5.56	Distribution input	
CW5.57	Distribution input (pre-MLE)	
CW5.58	Leakage upstream of DMA	
CW5.59	Distribution main losses	
CW5.60	Customer supply pipe losses – measured households excluding void properties	

Line ref	Line title	Observations from initial procedures
CW5.61	Customer supply pipe losses – unmeasured households excluding void properties	
CW5.62	Customer supply pipe losses – measured non-households excluding void properties	An error was noted in the calculation of supply pipe losses that caused a 0.07ML/d (7%) variance in the data reported for this line (company level). **Whilst 7% of this particular line, the impact on the overall water balance was insignificant, and so the Water Resources team noted this error but determined no change to the reporting was required.**
CW5.63	Customer supply pipe losses – unmeasured non-households excluding void properties	
CW5.64	Customer supply pipe losses – void measured households	
CW5.65	Customer supply pipe losses – void unmeasured households	
CW5.66	Customer supply pipe losses – void measured non-households	
CW5.67	Customer supply pipe losses – void unmeasured non-households	
CW5.68	Leakage upstream of DMA	
CW5.69	Distribution main losses	
CW5.70	Customer supply pipe losses – measured households excluding void properties	
CW5.71	Customer supply pipe losses – unmeasured households excluding void properties	
CW5.72	Customer supply pipe losses – measured non-households excluding void properties	
CW5.73	Customer supply pipe losses – unmeasured non-households excluding void properties	
CW5.74	Customer supply pipe losses – void measured households	
CW5.75	Customer supply pipe losses – void unmeasured households	
CW5.76	Customer supply pipe losses – void measured non-households	
CW5.77	Customer supply pipe losses – void unmeasured non-households	
CW5.78	Leakage upstream of DMA	

Line ref	Line title	Observations from initial procedures
CW5.79	Distribution main losses	
CW5.80	Customer supply pipe losses – measured households excluding void properties	
CW5.81	Customer supply pipe losses – unmeasured households excluding void properties	
CW5.82	Customer supply pipe losses – measured non-households excluding void properties	An error was noted in the calculation of supply pipe losses that caused a 0.07ML/d (18%) variance in the data reported for this line (Region 2 - Essex). **Whilst 18% of this particular line, the impact on the overall water balance was insignificant, and so the Water Resources team noted this error but determined no change to the reporting was required.**
CW5.83	Customer supply pipe losses – unmeasured non-households excluding void properties	
CW5.84	Customer supply pipe losses – void measured households	
CW5.85	Customer supply pipe losses – void unmeasured households	
CW5.86	Customer supply pipe losses – void measured non-households	
CW5.87	Customer supply pipe losses – void unmeasured non-households	
CW6.29	Compliance Risk Index	
CW6.30	Event Risk Index	We identified that differing approaches had been used to calculate Event Risk Index performance in OUT8.16 and CW6.30 (with starting from historic data only, and one considering 23/24 performance year to date) and so the two data lines present differing results for Event Risk Index in 23/24.
CW6a.29	Compliance Risk Index	
CW6a.30	Event Risk Index	
CW7.22	Per capita consumption (measured)	
CW7.23	Per capita consumption (unmeasured)	
CW7a.22	Per capita consumption (measured)	
CW7a.23	Per capita consumption (unmeasured)	

Line ref	Line title	Observations from initial procedures
CW8.1	WRMP scheme 1	Our procedures identified that, for some of the schemes reported, slightly different results had been presented for this PR24 table compared to the equivalent WRMP tables. We understand that some of these differences arise from the PR24 table having been populated using more up-to-date knowledge regarding timing of scheme progress than the underlying WRMP table.
CWW5.1	Works name (existing works)	
CWW5.1	Works name (new works)	
CWW5.1	Works name	
CWW5.2	Classification of treatment works	
CWW5.3	Population equivalent of total load received	
CWW5.4	Suspended solids consent	
CWW5.5	BOD5 consent	
CWW5.6	Ammonia consent	
CWW5.7	Phosphorus consent	
CWW5.8	UV consent	
CWW5.9	Load received by STW	
CWW5.10	Flow passed to full treatment	
CWW5.17	Population equivalent of total load received (resident population and trade effluent)	
CWW6.3	Total pumping station capacity	
CWW6.4	Number of network pumping stations	
CWW6a.3	Total pumping station capacity	
CWW6a.4	Number of network pumping stations	
CWW7a.1	Load received by STWs in size band 1	
CWW7a.2	Load received by STWs in size band 2	
CWW7a.3	Load received by STWs in size band 3	
CWW7a.4	Load received by STWs in size band 4	
CWW7a.5	Load received by STWs in size band 5	
CWW7a.6	Load received by STWs above size band 5	
CWW7a.7	Total load received	
CWW7a.9	STWs in size band 1	

Line ref	Line title	Observations from initial procedures
CWW7a.10	STWs in size band 2	
CWW7a.11	STWs in size band 3	
CWW7a.12	STWs in size band 4	
CWW7a.13	STWs in size band 5	
CWW7a.14	STWs above size band 5	
CWW7a.15	Total number of works	
CWW7c.1	Load received by STWs in size band 1	
CWW7c.2	Load received by STWs in size band 2	
CWW7c.3	Load received by STWs in size band 3	
CWW7c.4	Load received by STWs in size band 4	
CWW7c.5	Load received by STWs in size band 5	
CWW7c.6	Load received by STWs above size band 5	
CWW7c.7	Total load received	
CWW7c.8	Load received from trade effluent customers at treatment works	
CWW7c.9	STWs in size band 1	
CWW7c.10	STWs in size band 2	
CWW7c.11	STWs in size band 3	
CWW7c.12	STWs in size band 4	
CWW7c.13	STWs in size band 5	
CWW7c.14	STWs above size band 5	
CWW7c.15	Total number of works	
CWW8.2	Designated coastal bathing waters	
CWW8.3	Designated inland bathing waters	

Line ref	Line title	Observations from initial procedures
CWW8a.2	Designated coastal bathing waters	
CWW8a.3	Designated inland bathing waters	
CWW20.1	Current population equivalent served by STWs	Our testing identified that the 2022/23 figure reported within this data table is inconsistent with that reported in the APR (different by 7.7% in total).
CWW20.2	Current population equivalent served by STWs with tightened/new P permits	
CWW20.3	Current population equivalent served by STWs with tightened/new N permits	
CWW20.4	Current population equivalent served by STWs with tightened/new sanitary parameter permits	
CWW20.5	Current population equivalent served by STWs with tightened/new microbiological standards	
CWW20.6	Population equivalent served by STWs with enhanced treatment capacity	
CWW20.7	Current population equivalent served by STWs with tightened/new permits for chemicals / hazardous substances	
CWW20.8	Current population equivalent served by septic tank replacement projects	
CWW20a.1	Current population equivalent served by STWs	Our testing identified that the 2022/23 figure reported within this data table is inconsistent with that reported in the APR (different by 7.7% in total).
CWW20a.2	Current population equivalent served by STWs with tightened/new P permits	
CWW20a.3	Current population equivalent served by STWs with tightened/new N permits	
CWW20a.4	Current population equivalent served by STWs with tightened/new sanitary parameter permits	
CWW20a.5	Current population equivalent served by STWs with tightened/new microbiological standards	
CWW20a.6	Population equivalent served by STWs with enhanced treatment capacity	

Line ref	Line title	Observations from initial procedures
CWW20a.7	Current population equivalent served by STWs with tightened/new permits for chemicals / hazardous substances	
CWW20a.8	Current population equivalent served by septic tank replacement projects	
RES1.1	Water from impounding reservoirs	
RES1.2	Water from pumped storage reservoirs	
RES1.3	Water from river abstractions	
RES1.4	Water from groundwater works,excluding managed aquifer recharge (MAR) water supply schemes	
RES1.5	Water from artificial recharge (AR) water supply schemes	
RES1.6	Water from aquifer storage and recovery (ASR) water supply schemes	
RES1.7	Water from saline abstractions	
RES1.8	Water from water reuse schemes	
RES1.9	Number of impounding reservoirs sources	
RES1.10	Number of pumped storage reservoirs sources	
RES1.11	Number of river abstractions sources	
RES1.12	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes	
RES1.13	Number of artificial recharge (AR) water supply schemes	
RES1.14	Number of aquifer storage and recovery (ASR) water supply schemes	
RES1.15	Number of saline abstraction schemes	
RES1.16	Number of reuse schemes	
RES1.17	Total number of sources	
RES1.18	Total number of water reservoirs	
RES1.19	Total volumetric capacity of water reservoirs	
RES1.20	Total number of intake and source pumping stations	

Line ref	Line title	Observations from initial procedures
RES1.21	Total installed power capacity of intake and source pumping stations	
RES1.22	Total length of raw water abstraction mains and other conveyors	
RES1.23	Average pumping head – raw water abstraction	
RES1.25	Total number of raw water abstraction imports	
RES1.26	Water imported from 3rd parties to raw water abstraction systems	
RES1.27	Total number of raw water abstraction exports	
RES1.28	Water exported to 3rd parties from raw water abstraction systems	
RES1.29	Water resources capacity (measured using water resources yield)	
RES1.30	Total number of impounding reservoirs assets	
BIO1.1	Total sewage sludge produced, treated by incumbents	
BIO1.2	Total sewage sludge produced, treated by 3rd party sludge service provider	
BIO1.3	Total sewage sludge produced	
BIO1.4	Total sewage sludge produced from non-appointed liquid waste treatment	
BIO1.5	Percentage of sludge produced and treated at a site of STW and STC co-location	
BIO1.6	Total sewage sludge disposed by incumbents	
BIO1.7	Total sewage sludge disposed by 3rd party sludge service provider	
BIO1.8	Total sewage sludge disposed	
BIO1.9	Total measure of intersiting 'work' done by pipeline	
BIO1.10	Total measure of intersiting 'work' done by tanker	
BIO1.11	Total measure of intersiting 'work' done by truck	

Line ref	Line title	Observations from initial procedures
BIO1.12	Total measure of intersiting 'work' done (all forms of transportation)	
BIO1.13	Total measure of intersiting 'work' done by tanker (by volume transported)	
BIO1.14	Total measure of 'work' done in sludge disposal operations by pipeline	
BIO1.15	Total measure of 'work' done in sludge disposal operations by tanker	
BIO1.16	Total measure of 'work' done in sludge disposal operations by truck	
BIO1.17	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	
BIO1.18	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	
BIO1.19	Chemical P sludge as % of sludge produced at STWs	
BIO4.1	% Sludge - untreated	
BIO4.2	% Sludge treatment process - raw sludge liming	
BIO4.3	% Sludge treatment process - conventional AD	
BIO4.4	% Sludge treatment process - advanced AD	
BIO4.5	% Sludge treatment process - incineration of raw sludge	
BIO4.6	% Sludge treatment process - other (specify)	
BIO4.7	% Sludge treatment process - Total	
BIO4.8	% Sludge disposal route - landfill, raw	The total sludge disposed through all routes (BIO4.13) should total 100% so that all sludge is accounted for. Historically, NWL has disposed of all sludge by recycling to farmland (BIO4.11) however, from 24/25 onwards this has been reported as 20% only, and the balancing 80% has has not been allocated to a particular route(s) (meaning the table in total adds up to only 20%). Through discussion with the bioresources team, we understand that this is due to an expected change in regulation which will tighten when and how sludge can be disposed of to farmland, meaning they expect only 20% of sludge will be
BIO4.9	% Sludge disposal route - landfill, partly treated	
BIO4.10	% Sludge disposal route - land restoration/ reclamation	

Line ref	Line title	Observations from initial procedures
BIO4.11	% Sludge disposal route - sludge recycled to farmland	disposed of by that route. As yet, the management is unsure which alternative route(s) will be taken to dispose of sludge so has decided to present the data in this manner. **In order to reduce the potential for misinterpretation, management also intends to report with an accompanying commentary to explain the results within this table and highlight the potential issue this new regulation may have to Ofwat and other stakeholders.**
BIO4.12	% Sludge disposal route - other (specify)	
BIO4.13	% Sludge disposal route - Total	
BIO5.1	Tonnes of dry solids treated via main sludge treatment	
BIO5.2	Tonnes of dry solids undertaking thickening/dewatering	
BIO5.3	Additional sludge storage - tank volume (pre-thickening/pre-dewatering/untreated sludge)	
BIO5.4	Additional sludge storage - tank volume (thickened/dewatered/treated sludge)	
BIO5.5	Additional sludge storage - cake pads/bays area or equivalent (cake)	
BIO5.6	Total number of sludge treatment schemes providing sludge storage	
BIO5.7	Total number of sludge treatment schemes providing sludge thickening and dewatering	
BIO5.8	Total number of sludge treatment schemes providing main sludge treatment enhancement	
BIO5.9	Volume of sludge processed via thickening or dewatering	
BIO5.10	Landbank availability	
BIO5.11	Additional Line 1; Sludge management/sludge treatment/ Bioresources cost driver	As per Ofwat's PR24 guidance, these lines only need to be populated if required to report the "number of [sludge] investigations". **Management confirmed they expect to not have any sludge investigations so they have deliberately not been populated.**
BIO5.12	Additional Line 2; Sludge management/sludge treatment/ Bioresources cost driver	
BIO5.13	Additional Line 3; Sludge management/sludge treatment/ Bioresources cost driver	

Line ref	Line title	Observations from initial procedures
BIO5.14	Additional Line 4; Sludge management/sludge treatment/ Bioresources cost driver	
BIO5.15	Additional Line 5; Sludge management/sludge treatment/ Bioresources cost driver	
DS6.9	New potable water pumping stations built - proportional allocation	
DS6.10	New potable water pumping stations built - full allocation	
DS6.11	Existing potable water pumping stations upsized - proportional allocation	This data line is to report the number of pumping stations that have been enhanced. In the data table, we identified that a formula error was causing 8 pumping stations to be reported rather than 4.
DS6.12	Existing potable water pumping stations upsized - full allocation	
DS6.13	Additional potable water pumping capacity installed - proportional allocation	
DS6.14	Additional potable water pumping capacity installed - full allocation	
DS6.15	New pumping stations built on sewerage network - proportional allocation	
DS6.16	New pumping stations built on sewerage network - full allocation	
DS6.17	Existing stations upsized on sewerage network - proportional allocation	In the data table for 24/25 reporting, it was identified that the percentage change was reported as 8.1% but should have been reported as 0.8%. This difference also had a subsequent impact upon figures reported for future years which build from the 24/25 figure.
DS6.18	Existing stations upsized on sewerage network - full allocation	
DS6.19	New pumping capacity installed on sewerage network - proportional allocation	
DS6.20	New pumping capacity installed on sewerage network - full allocation	
LS1.2	Compliance risk index (CRI)	
LS1.3	Customer contacts about water quality	
LS1.9	Leakage	
LS1.10	Per capita consumption	
LS1.11	Business demand	
LS1.12	Total pollution incidents	
LS1.13	Serious pollution incidents	

Line ref	Line title	Observations from initial procedures
LS1.15	Bathing water quality	
LS1.16	River water quality (phosphorus)	
LS1.19	Unplanned outage	The data line was not completed beyond the end of AMP8 but the table had columns up to 2049-50 available to complete.
LS1.21	Leakage - region 1	
LS1.22	Leakage - region 2	
LS1.23	Per capita consumption - region 1	
LS1.24	Per capita consumption - region 2	
LS1.25	Business demand - region 1	
LS1.26	Business demand - region 2	
LS1.31	Supply-side scheme benefit	
LS2.2	Compliance risk index (CRI)	
LS2.3	Customer contacts about water quality	
LS2.9	Leakage	
LS2.10	Per capita consumption	
LS2.11	Business demand	
LS2.12	Total pollution incidents	
LS2.13	Serious pollution incidents	
LS2.15	Bathing water quality	
LS2.16	River water quality (phosphorus)	We identified that differing approaches had been used to calculate River water quality (phosphorus) in LS2.16 and LS1.16 and so the two data lines present differing results for River water quality (phosphorus).
LS2.19	Unplanned outage	We observed that this data line was not completed beyond the end of AMP8 but the table had columns up to 2049-50 available to complete.
LS2.21	Leakage - region 1	
LS2.22	Leakage - region 2	
LS2.23	Per capita consumption - region 1	
LS2.24	Per capita consumption - region 2	
LS2.25	Business demand - region 1	
LS2.26	Business demand - region 2	

Line ref	Line title	Observations from initial procedures
LS2.31	Supply-side scheme benefit	
SUP1A.1	Residential water only customers	Across the SUP1A and SUP1B tables, we identified that the data forecasts were built using 21/22 data as a baseline but 22/23 data was populated using the 22/23 APR data points. This resulted in a noticeable step-change between the 22/23 and 23/24 results for some of the SUP1A and SUP1B lines. **Having reported this observation to management, they informed us they would add a commentary alongside this table to explain the approach and reason for the step-change between 22/23 and 23/24 performance.**
SUP1A.2	Residential wastewater only customers	
SUP1A.3	Residential water and wastewater customers	
SUP1A.5	Business water only customers	In the initial data table, we identified that some data relating to voids had been omitted, giving rise to an exception within this line. **This issue was subsequently addressed in the version of the table submitted.**
SUP1A.6	Business wastewater only customers	
SUP1A.7	Business water & wastewater customers	
SUP1A.10	Residential properties billed	
SUP1A.11	Residential void properties	
SUP1A.13	Business properties billed	
SUP1A.14	Business void properties	
SUP1A.17	Resident population	
SUP1A.18	Non-resident population (wastewater)	
SUP1A.19	Household population	
SUP1A.20	Household measured population (water only)	
SUP1A.21	Household unmeasured population (water only)	
SUP1B.1	Total new residential properties connected in year	
SUP1B.2	Total number of new business properties connections	

Line ref	Line title	Observations from initial procedures
SUP1B.3	Residential properties billed at year end	
SUP1B.4	Residential properties unbilled at year end	
SUP1B.5	Residential void properties at year end	
SUP1B.7	Business properties billed at year end	
SUP1B.8	Business properties unbilled at year end	
SUP1B.9	Business void properties at year end	