United Utilities Water

Annual Performance Report 2023/24 Additional regulatory information commentaries for tables

July 2024

United Utilities

Water for the North West

Executive Summary

This document is designed to support and provide commentary on the data tables within UUW's 2023/24 Annual Performance Report (APR).

Tables 3A to 11A of the APR contain information on performance and the allocation of expenditure to different investment categories. They also contain information on the drivers of expenditure, such as population served or asset capacities.

Assurance

As set out in the Final Assurance Plan that is published at:
https://www.unitedutilities.com/globalassets/documents/pdf/final-assurance-plan-2023-24

We have applied a three lines of assurance review and governance approach.

Data has been subject to data owner, responsible, accountable, and executive manager sign-off as appropriately identified through risk assessment. In addition to this independent audit/peer review of supporting information and audit trails has also taken place.

The regulatory reporting process was reviewed by United Utilities Corporate Audit. The audit covered the following areas, with no issues being noted:

- The validity consistency of the data reported in Sections 3 and 4 of the Annual Performance Report. This included sample testing to agree data back to underlying UUW records and systems;
- Consistency of the commentary with the underlying data within the APR;
- Compliance of the reported data in the APR with key aspects of Regulatory Guideline 3.14 "Guideline for the format and disclosures for the annual performance report";
- Overall governance arrangements in place to ensure the regulatory data is complete and accurate and reported in line with the required timescales;
- Confirmation that assurance activities detailed in UUW's published Final Assurance Plan have been completed in line with the plan; and
- Review the proposed Assurance Report (to be published along with the Annual Performance Report 2023/24) to ensure it is a fair reflection of the associated assurance activities and results thereof.
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The data within this submission was also added to the scope of the assurance review undertaken by our technical auditor Sarah Fane from Jacobs Limited. Jacobs undertook an agreed upon procedures review and concluded that "Through a series of virtual meetings and information exchanges, we have reviewed and tested the methodologies, processes and supporting evidence on which the data and statements in the Annual Performance Report 2024 are based. With the exception of the outstanding amber actions mentioned above, we conclude that in relation to the items we reviewed, and in all material respects:

- Your processes and internal systems of control are sufficient to meet your regulatory obligations;
- Your processes for reporting performance commitments are in line with the guidance and exclusions have been correctly applied; and
- You have appropriate systems and processes in place to identify, manage and review your risks."

The results and findings from the review and assurance processes were presented to and discussed with the UUW Board, as part of its review and approval of the Annual Performance Report in June 2024.

The findings of the Jacobs review and the findings of the second line review undertaken by UU Corporate Audit are included within Appendix 1 of our APR, which is published on our website.
https://www.unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

Contents

Table 2N Household affordability support and debt

Section C – other direct bill reduction schemes for household customers struggling to pay

In this section we have included other forms of affordability support (not covered in sections A and B) that are available for household customers struggling to pay their bills. In line with the Consultation on regulatory reporting for 2023/24 – Responses document an average number of customers supported has been supplied. We have calculated the annual average as the simple average of 2023/24 opening and closing values.

2N.27a – Payment Matching

The output for this line is for customers supported by our payment match scheme. As this scheme is targeted at customers who are struggling to pay, no further refinement has been done to the number.

2N.27b – UU Trust Fund (hardship fund)

The output for this line is for customers supported by our independent trust fund. As this scheme is targeted at customers who are struggling to pay, no further refinement has been done to the number.

2N.27c – Lowest bill guarantee

The output for this line incorporates customers who have benefited from our lowest bill guarantee following a meter installation. Only customers who have saved as a result of metered charges are included. To enable identification and inclusion of only customers who are struggling to pay, customers are identified by our internal debt risk models as being at elevated risk of income deprivation.

2N.27d – Direct Debit discount

The output for this line incorporates customers who have received a discount as a result of paying by Direct Debit. To enable identification and inclusion of only customers who are struggling to pay, customers are identified by our internal debt risk models as being at elevated risk of income deprivation.

2N.27e – Local Authority discount

The output for this line incorporates customers who have received a discount as a result of paying via a social landlord collection agreement. To enable identification and inclusion of only customers who are struggling to pay, customers are identified by our internal debt risk models as being at elevated risk of income deprivation.

Section D – debt metrics

2N.28 - Number of household customers served – active accounts

The data reported for this line is aligned with table 3C.6. Accounts managed by other water companies on our behalf are included in this line.

2N.29 – Number of household customers served – final accounts

Aligned to RAG4.12 guidance we have included all final accounts with a balance greater than zero for this line i.e. payment remains outstanding and not written off. Accounts managed by other water companies on our behalf are not included in this line as only active account volumes are provided.

2N.30 – Households in arrears – active accounts with debt repayment arrangements

To enable inclusion of households in arrears we have defined arrears as active accounts with an element of unpaid charges that are over 31 days old, where they are either being pursued through debt follow up which includes early stage arrears and late arrears via our Debt Management system or where the debt is not subject to debt follow up but is sufficiently aged. The reported number only includes repayment arrangements set up directly with UUW. Any repayment arrangements set up with a Debt Collection Agency (DCA) will be included in the reported number for line 2N.32.

2N.31 – Households in arrears – final accounts with debt repayment arrangements
Aligned to RAG4.12 guidance we have included all final accounts with a balance greater than zero for this line i.e. payment remains outstanding and not written off. Any repayment arrangements set up with a DCA will be included in the reported number for line 2N.33.

2N.32 – Households in arrears – active accounts without debt repayment arrangements
To enable inclusion of households in arrears we have defined arrears as active accounts with an element of unpaid charges that are over 31 days old, where they are either being pursued through debt follow up which includes early stage arrears and late arrears via our Debt Management system or where the debt is not subject to debt follow up but is sufficiently aged. Only includes records where there is an arrangement in place.

2N.33 – Households in arrears – final accounts without debt repayment arrangements
Aligned to RAG4.12 guidance we have included all final accounts with a balance greater than zero for this line where there is no arrangement in place.

2N.34 – Households not having made any payment for the year – active accounts
Only includes records where there has been no payment in the reporting period and the customer account was opened prior to the reporting period.

2N.35 – Households not having made any payment for the year – final accounts
Aligned to RAG4.12 guidance we have included all final accounts with a balance greater than zero for this line where there has been no payment in the reporting period.

2N.36 – Households with temporarily suspended payments – payment break arrangements
Our payment break scheme requires customers to be on a payment arrangement therefore at the point of a payment break being agreed it is only the instalments on the plan that are deferred for the duration of the payment break. For example a customer is accepted for a 90 day payment break and normally pays £20 per month. The deferred amount for this customer would be £60 and not the account balance. In line with the Consultation on regulatory reporting for 2023/24 – Responses document only active records are contained in this line.

2N.37 – Households with temporarily suspended payments – breathing space arrangements
For this line we have taken the approach of using the account balance at the end of the breathing space period as the deferred amount as this will then contain any billed charges that occurred during the breathing space window. Where breathing space has not ended during the reporting period then the balance as at 31March has been used.
In line with the Consultation on regulatory reporting for 2023/24 – Responses document only active records are contained in this line.

2N.38 – Debt collected by external agents – active accounts
Our placements for debt collection activity with external agents are split into active and final placement types as such this categorisation has been used to determine ‘active accounts’ for inclusion in this line. We have only included specific debt collection placements and high court enforcement placements as confirmed in the consultation on regulatory reporting for 2023-24 – Responses document. Other specialised placements such as deceased have been excluded. Again, in line with the response document the balance at time of placement has been used to report the debt value.

If there have been multiple placements during the reporting period for one record then then the record is only counted once and the balance at the point of latest placement is reported. Priority Services Registered (PSR) customers excluded from this line and covered in 2N.40 as confirmed in the consultation response document.

2N.39 – Debt collected by external agents – final accounts
Our placements for debt collection activity with external agents are split into active and final placement types as such this categorisation has been used to determine 'final accounts' for inclusion in this line. We have only included specific debt collection placements and high court enforcement placements as confirmed in the consultation on regulatory reporting for 2023-24 – Responses document. Other specialised placements such as deceased have been excluded. Again, in line with the response document the balance at time of placement has been used to report the debt value.

If there have been multiple placements during the reporting period for one record then then the record is only counted once and the balance at the point of latest placement is reported. PSR customers excluded from this line and covered in 2N.40 as confirmed in the consultation response document.

2N.40 – Number of Priority Services Register customers with debt passed on to external debt collection agents – active and final accounts
All Priority Service registered customers are identified through a Priority Services Flag. Recognising some customers require a more tailored approach to customer service and collections we have a dedicated Vulnerable Customer Placement for customers with more complex and sensitive needs. All other PSR customers are placed with a standard debt collection agency. For reporting purposes this line includes all DCA related activities where the customer is PS registered, this therefore includes a mix of vulnerable and regular placement.
In line with the consultation response document the balance at time of placement has been used to report the debt value.

If there have been multiple placements during the reporting period for one record then then the record is only counted once and the balance at the point of latest placement is reported.

2N.41 – Debt sold to an external agency / third party debt purchaser – active accounts
Debt sale is not an activity that is undertaken by UUW as such no data has been reported for this line.

2N.42 – Debt sold to an external agency / third party debt purchaser – final accounts
Debt sale is not an activity that is undertaken by UUW as such no data has been reported for this line.

2N.43 – Number of Priority Services Register customers with debt sold to an external agency / third party debt purchaser – active and final accounts
Debt sale is not an activity that is undertaken by UUW as such no data has been reported for this line.

2N.44 – Number of county court claims
Line includes all court claims made within the reporting period. Aligned to the consultation response document the balance at the point of a record being passed to the court is used. NB this is inclusive of claim fees and costs.

2N.45 – Number of county court judgements
Line includes all court judgements made within the reporting period. Aligned to the consultation response document the balance at the point of a record being passed to the court is used. NB this is inclusive of judgement costs.

2N.46 – Number of county court judgement enforcements
Line includes all court enforcements made within the reporting period. Aligned to the consultation response document the balance at the point of a record being passed to the court is used. NB this is inclusive of enforcement fees and costs. As confirmed in the consultation response document high court enforcement activity has been excluded from this line.

If an account has more than one enforcement action in the reporting period, we have used the most recent type excluding warrant, and the value of this most recent enforcement for the record.

Warrants have been excluded from this comparison as they are usually partial warrants for the judgement instalment amount, not the full balance owed.
Therefore, if an account has another enforcement action in the reporting period, the balance of that/those other type(s) is more reflective of how much we have enforced for that record.
If an account only has warrants, the total warrant value is reflective of how much has been enforced for that account in the reporting period.

2N.47 – Number of high court claims
Following clarification in the consultation response document we have populated this line with a combination of referrals to our High Court Enforcement Agents and records that have been transferred up to the High Court. Where a record has been referred and then transferred up within the reporting period then it is only counted once and the debt value is based on the point of being transferred up.

2N.48 – Number of high court judgements
Following clarification in the consultation response document we have populated this line based on records where a writ has been issued within the reporting period. The debt value is based on the point in which the writ is issued and is inclusive of fees and costs.

2N.49 – Number of high court judgement enforcements
Following clarification in the consultation response document we have populated this line based on records where a writ has been issued and is being enforced within the reporting period. The debt value is based on the point in which the writ is enforced and is inclusive of fees and costs.

Section E – Payments to household customers made in accordance with the Guaranteed Standards Scheme (GSS)
As well as operating to the standards of the GSS scheme we will also make discretionary/goodwill payment. These are referred to as discretionary payment below. Where these payments link to or are paid alongside one of the GSS categories we have recorded this information in column F and G of lines 2N.53 to 2N.60.

Following a review and consultation, Ofwat recommended changes to some of the GSS standards. We implemented these changes from 01/01/2019. The changes included the removal of the distinction between strategic and non-strategic water mains, reduction of the timescales for each subsequent period without water from 24 hours to 12 hours and an increase to payment levels.

2N.50 – Total value of payments made to household customers under GSS
2N.51 – Total number of payments made to household customers under GSS
2N.52 – Total number of unique household customers receiving GSS payments
We have paid over 24,000 payments totalling £1.226m in GSS compensation. Compensation was paid to 22,718 unique households.

2N.53 – Keeping of appointments
Within this category we have included payments for failing to make appointments correctly, failure to provide adequate notice of cancellation and failure to keep. We have made 4,906 payments totalling C. £128,000. C.2000 of these (42 per cent) relate to our lead pipe replacement process, which has now been improved.

2N.54 – Incidences of low water pressure
We have made 306 payments totalling C. £1,600.

2N.55 – Incorrect notice of planned interruptions to supply
We have made 994 payments totalling C.£25,000.

2N.56 – Supply not restored
We have made 13,674 payments totalling C.£442,00. Payments in this category are for where the supply of water to a property has been interrupted due to planned work and was not restored by the time we notified the property. It also covers unplanned interruption to supply where the supply was not restored within the appropriate timescales. 2023/24 has seen a considerable improvement for interruptions to water supply performance compared to last year. Our performance was impacted by a number of larger scale bursts on our water network. Events where we see the most significant impact relate to bursts on large diameter (strategic 'in nature') mains or those that cover cascading areas downstream, so these continue to form a key area of focus. We write more about water interruption on page 44 of our APR.

2N.57 – Written account queries and requests to change payment arrangements not actioned on time
We have made 1,057 payments totalling C.£21,000.

2N.58 – Written complaints not responded to within 10 working days
We have made 80 payments totalling C.£2,000.

2N.59 – Properties sewer flooded internally
We have made 1,353 payments totalling C.£353,000. Payments for internal flooding include an amount equivalent to 100 per cent of the sewerage charges payable by the customer and discretionary payments for the disturbance caused and, on some occasions, it may also include an amount for uninsured losses.

During 2023/24 we have experienced prolonged wet weather conditions, alongside a high number of Met office named storms. This has led to an extremely challenging year for our flooding performance. Despite the negative impact of the weather, we continue to develop and implement a wide variety of schemes and initiatives to improve our flooding performance, acknowledging the challenges created by our regional operating circumstances. These include the deployment and development of our Dynamic Network Management (DNM) operating model, our successful customer engagement campaigns, enhanced incident targeting and management of surface water and development. We write more about internal sewer flooding on page 86 of our APR. We have made a further 2,727 discretionary payments totalling C.£500,000.

2N.60 – Properties sewer flooded externally
We have made over 1,900 payments totalling nearly £245,000. Payments for external flooding internal flooding will include an amount equivalent to 50 per cent of the sewerage charges payable by the customer, a goodwill payment for the disturbance caused and, on some occasions, it may also include an amount for uninsured losses. During 2023/24 we have experienced prolonged wet weather conditions, alongside a high number of Met Office named storms. This has led to an extremely challenging year for our flooding performance. Despite the negative impact of the weather, we continue to develop and implement a wide variety of schemes and initiatives to improve our flooding performance. These include the deployment and development of our Dynamic Network Management (DNM) operating model, our successful customer engagement campaigns, enhanced incident targeting and management of surface water and development. We write more about external sewer flooding on page 87 of our APR. We have made a further 1,914 discretionary payments totalling C.£245,000.

Goodwill/discretionary payment
We make discretionary payments throughout the year which may not relate to GSS. We have grouped these payments into five broad categories.

2N.61a – Wastewater
We have made 967 payments totalling C.£273,000 in relation to Wastewater.

2N.61b – Water
We have made 2,722 payments totalling just over £188,000 in relation to Water
2N.61c – Billing

We have made 1,953 payments totalling just over £140,000 in relation Billing

2N.61d – Developer Services
We have made 261 payments totalling just over £71,000 in relation Developer Services.
2N.61e – Metering
We have made 1.646 payments totalling C.£70,000 in relation to Metering.

2N.62 – Penalty payments
We have made 7,733 totalling £133,290. Of these C.5,000 relate to payments for supply not restored. We have subsequently made process improvements to improve the speed of payment for single no water events. A further 1,372 relate to the LCSP appointment process referred to in 2N.53 above which is now resolved.

Table 3A Outcome Performance – Water Performance Commitments (financial)

Section 1.1 of the main APR document contains further details on our Water performance commitments with financial incentives. This section outlines how we have performed this year and the number of performance commitments that have been achieved.

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

In Appendix 1 of our main APR document we set our approach to assurance. This also includes details of how we regularly share information about our performance with our YourVoice panel.

Appendix 3 of our APR also outlines which performance commitments require a non-standard calculation. One measure is included in Table 3A. 'Abstraction Incentive Mechanism (AIM)'.

Table 3B Outcome Performance – Wastewater Performance Commitments (financial)

Section 1.1 of the main APR document contains further details on our wastewater performance commitments with financial incentives. This section outlines how we have performed this year and the number of performance commitments that have been achieved.

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

Appendix 3 of our APR also outlines which Performance Commitments require a non-standard calculation. Two measures are included from Table 3B – 'Recycling Biosolids' and 'Better Air Quality'.

For our 'Improving the water environment' and 'Improving river water quality' performance commitments, the Environment Agency (EA) confirm that schemes have been satisfactorily completed in the AMP7 WINEP. We consider this position as definitive and then fully align our reporting to this position. The WINEP is saved on Defra's SharePoint site:

https://defra.sharepoint.com/teams/Team843/WINEP/Forms/AllItems.aspx

Table 3C Customer Measure of Experience (C-MeX) table

Section 1.1 of the main APR document contains further details on our Customer Measure of Experience (C-MeX) performance commitment. This section outlines how we have performed this year and contains details on our customer satisfaction surveys and results.

unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

Table 3D Developer Measure of Experience (D-MeX) table

Table 3D

Line 3D.1 – Qualitative Component Annual Results, Line 3D.2 – Quantitative Component Annual Results, Line 3D.3 – D-MeX Score, Line 3D.4 – Developer Services Revenue (Water) and Line 3D.5 – Developer Services (Wastewater)
We have no comments for these lines.

Table 3D

Line 3D.W1 – W1.1 – Pre-development enquiry – reports issued within target – 21 days (Non-statutory), Line 3D.W2 – S3.1 Sewer requisition design – offers issued within target.
We have no comments for these lines.

Line 3D.W3 – S4.1 Sewer requisition – constructed and commissioned within agreed extension, Line 3D.W4 – S7.1 Adoption legal agreement – draft agreements issued within target.
We did not have any transactions for this measure in the reporting period.

Line 3D.W5 – SAM - 3/1 Execute Adoption Agreement (Stage 3) – Sewerage Company – SAM – 3/1 – Update draft Agreement, Line 3D.W6 – SAM - 4/1 Customer notifies of construction start date and requests inspections (Stage 4) – Sewerage Company – SAM – 4/1 Inspections & construction period, Line 3D.W7 – SLPM - 2/2b Design Self-Laid Main (Stage 2) – Water Company – SLPM - S2/2b – Water Company to Provide design acceptance and Line 3D.W8 – SLPM – S1/2 POC (Stage 1C) – Water Company – SLPM – S1/2 – Review PoC proposal.
We have no comments for these lines.

Line 3D.W9 – SLPM - S2/2a Design Self-Laid Main (Stage 2) – Water Company – SLPM - S2/2a – Provide design
We did not have any transactions for this measure in the reporting period.

Line 3D.W10 - SLPM – S3 Execute Water Adoption Agreement (Stage 3) – Water Company – SLPM – S3 – Review / revise Water Adoption Agreement, Line 3D.W11 - SLPM – S4/1 Delivery Date (Stage 3 / 4) – Water Company – SLPM – S4/1 – Source of Water Delivery Date, Line 3D.W12 - SLPM – S5/1a Connect Self-Laid Main – (Stage 5) – Water Company – SLPM – S5/1a – Review request and carry out Final Connection, Line 3D.W13 - SLPM – S7/1 Make Service Connections (Stage 7 – Part 2) – Water Company – SLPM – S7/1 – Validate notification and provide consent to progress with connection, Line 3D.W14 - SN2.2 per cent Bulk discharge offer letters issued to the applicant within target period,
We have no comments for these lines.

Line 3D.W15 - SN4.1 per cent of main laying schemes constructed and commissioned within the target period
We did not have any transactions for this measure in the reporting period.

Line 3D.W16 - W1.1 Pre-development enquiry – reports issued within target, Line 3D.W17 - W17.1 Mains diversions (without constraints) - quotations within target, Line 3D.W18 - W17.2 Mains diversions (with

constraints) - quotations within target, Line 3D.W19 - W18.1 Mains diversions - construction/commissioning within target.
We have no comments for these lines.

Line 3D.W20 - W20.1 Self-lay Point of Connection report < 500 plots etc - reports issued within target, Line 3D.W21 - W21.1 Self-lay Point of Connection reports >500 plots etc - reports issued within target, Line 3D.W22 - W23.1 Self-lay design and terms request <500 plots etc - quotations within target.
We did not have any transactions for this measure in the reporting period.

Line 3D.W22 - W23.1 Self-lay design and terms request <500 plots etc - quotations within target.
We have no comments for these lines.

Line 3D.W23 - W24.1 Self-lay design and terms request >500 plots etc - quotations within target, Line 3D.W24 - W26.1 Self-lay water for pressure/bacteriological testing - provided within target, Line 3D.W25 - W27.1 Self-lay permanent water supply - provided within target. Line
We did not have any transactions for this measure in the reporting period.

3D.W26 - W3.1 s45 quotations - within target, Line 3D. W27 - W30.1 Self-lay plot references and costing details - issued within target, Line 3D.W28 - W4.1 s45 service pipe connections - within target, Line 3D.W29 - W6.1 Mains design <500 plots - quotations within target, Line 3D.W30 - W7.1 Mains design >500 plots - quotations within target, Line 3D.W31 - W8.1 Mains construction within target, Line 3D.W32 - WN1.1 per cent of confirmations issued to the applicant within target period, Line 3D.W33 - WN2.2 per cent Bulk supply offer letters issued to the applicant within target period
We have no comments for these lines.

Line 3D.W34 - WN4.1 per cent of main laying schemes constructed and commissioned within the target period
We did not have any transactions for this measure in the reporting period.

Line 3D.W35 - WN4.2 per cent of testing supplies provided within target period
We have no comment for this line.

Line 3D.W36 - WN4.3 per cent of permanent supplies made available within the target period
We did not have any transactions for this measure in the reporting period.

Table 3E Outcome Performance – Non-Financial Performance Commitments

Section 1.1 of the main APR document contains further details on our non-financial performance commitments and our overall performance in terms of the number that have been achieved this year.

https://www.unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

Table 3F Underlying Calculations for Common Performance Commitments – Water and Retail

See section 1.1 of the main APR document for further details on outcome performance:

https://www.unitedutilities.com/globalassets/documents/pdf/united-utilities-annual-performance-report-2023-24

Performance Commitments set in Standardised Units - Water

Line 3F.1 – Mains Repairs – Reactive, Line 3F.2 – Mains Repairs – Proactive and Line 3F.3 – Mains Repairs
We have no comment for this line.
Line 3F.4 – Per Capita Consumption (PCC)
We have no comment for this line.

Performance Commitments Measured against a Calculated Baseline

Line 3F.5 – Leakage
Our baseline performance can be found on page 265 of United Utilities' 2019-20 APR.
United Utilities - Annual Performance Reports 2015-2020

Line 3F.6 – Per Capita Consumption (PCC)
Our baseline performance can be found on page 269 of United Utilities' 2019-20 APR.
United Utilities - Annual Performance Reports 2015-2020

Water Supply Interruptions

Line 3F.7 – Water Supply Interruptions
We have no comment for this line.

Unplanned Outage

Line 3F.8 – Unplanned Outage
Our independent technical auditor Jacobs confirms that we are compliant with the requirement to physically test peak week production capacity of our works over a five year period.

Priority Services for Customers in Vulnerable Circumstances

Line 3F.9 – Priority Services for Customers in Vulnerable Circumstances
Data in Column 23 from Table 4R.19 plus properties using only wastewater services (84,380).

Table 3G Underlying Calculations for Common Performance Commitments – Wastewater

Line 3G.1 – Internal Sewer Flooding – Customer Proactively Reported, Line 3G.2 – Internal Sewer Flooding – Company Reactively Identified (i.e. neighbouring properties) and Line 3G.3 – Internal Sewer Flooding
This year, 21.1 per cent of all internal sewer flooding incidents were found through company reactive identification. This is an increase compared to the previous year and is reflective of the significant increase severe and hydraulic sewer flooding incidents experienced this year due prolonged wet weather conditions and a high number of Met office named storms.

Line 3G.4 – Pollution Incidents
Data in Column 4 is sewer length reported in Water and Sewerage Company Environmental Performance Assessment (EPA) Methodology (version 9), Table 2.

Line 3G.5 – Sewer Collapses
We have no comments for this line.

Table 3H Summary information on Outcome Delivery Incentive Payments

Initial Calculation of in-period Revenue Adjustment by Price Control

This is a calculated table.

Table 3I Supplementary Outcomes Information

Unplanned or planned Outage

Line 3I.1 – Planned Outage
We have no comments for this line.

Risk of Severe Restrictions in Drought

Line 3I.2 – Risk of Severe Restrictions in Drought
We have no comments for this line.

Risk of Sewer Flooding in a Storm

Line 3I.3 – Risk of Sewer Flooding in a Storm
We have no comments for this line.

Sewer collapses

Line 3I.4 – Number of patch repairs or relining undertaken on sewer and not included in reported sewer collapses
As we describe in Section 1.1 of the main APR document, we continue to develop and implement a wide variety of schemes and initiatives to improve our sewer collapse performance. These include the promotion of less disruptive 'no-dig' techniques for repairing sewers which are all reported within this line.

Table 4A Water bulk supply information

Line 4A.1 – 4A.26 Bulk supply export volumes
The volume of raw water exported from Heronbridge has again decreased in the reporting year reflecting lower demand from Dwr Cymru. There has again been an increase in the number of exports this year associated with New Appointments and Variations (NAVs) and new developments which we expect to continue for the remainder of the AMP.

Sitch Lane and Llanforda have nil values due to them being emergency supply sites which are rarely used.

Line 4A.27 – 4A.52 Bulk supply import volumes
Import volumes are slightly increased by C.3Ml on the previous reporting year.
Note that there are supplies that have been recorded on the Bulk Supply Register for which no services have yet been provided in this year or in the prior year. For supplies where no operating costs have been incurred, they have been excluded from table 4A.

Table 4F Major project expenditure for wholesale water by purpose for the 12 months ended 31 March 2024

Major project capital expenditure by purpose

In accordance with RAG 4.12 Section 16.1, there are four projects which meet the definition of a major projects. This includes:

- **Manchester and Pennine Resilience direct procurement for customers (DPC) project** (Line 4F.1)

- **Strategic water resource projects**, comprising of Water Trading - Joint Transfer (line 4F.2), Water Trading - UU Sources (line 4F.3) and Water Trading - Vyrnwy Aqueduct (line 4F.4)

Line 4F.11 – Total major project capital expenditure
Total major project capital expenditure for Wholesale Water is £1.479 million higher in 2023/24 compared to 2022/23, reflecting progression of the projects. Water Resources has seen an increased level of expenditure of £1.985 million attributed to water trading, which is partially offset by a lower level of expenditure on the Manchester and Pennine Resilience DPC project within Treated Water Distribution of £0.506 million.

No major projects include a green recovery scheme element.

Major project operating expenditure by purpose
There is no operating expenditure associated with major projects for Wholesale Water in 2023/24.

Table 4G Major project expenditure for wholesale wastewater by purpose for the 12 months ended 31 March 2024

Major project capital expenditure by purpose – Capital and operating expenditure
There are no projects in Wholesale Wastewater which meet the definition of a major project as per RAG 4.12 Section 16.1.

Table 4L Enhancement expenditure for the 12 months ended 31 March 2024 - Water Resources and Water Network+ -

In accordance with RAG 4.12 section 4.44 all costs are reported in report year prices. Costs from previous years have been in inflated using financial-year average CPIH.

All totex lines contained within this table are calculated values.

EA/NRW environmental programme (WINEP/NEP)
Line 4L.1 Ecological improvements at abstractions (capex)
This line has been populated with capital expenditure linked to programmes that are driven by statutory obligations agreed with the Environment Agency and included in the National Environment Programme.
The increased levels of expenditure in the period 2023/24 is primarily due to expenditure on Ennerdale Weir Removal Options Appraisal partly offset by lower levels of expenditure on the Thirlmere Resilience project.

Line 4L.2 Ecological improvements at abstractions (opex)
This line has been populated with expenditure linked to programmes that are driven by statutory obligations agreed with the Environment Agency and included in the National Environment Programme.
The increased levels of expenditure in the period 2023/24 are in relation to infrastructure removal schemes, and the spend profile associated with these schemes.

Line 4L.4 Eels Regulations (measures at intakes) (capex)
The reduced levels of expenditure in the period 2023/24 is primarily due to lower levels of activity on the AMP6 Eels and Elvers – Windermere, Eel Regs River Lune and Eel Regs Sites Under Investigation in 2016-17 projects reflecting the later stages of delivery and project completion.

Line 4L.7 Invasive Non-Native Species (capex)
There is a small amount of expenditure in this line relating to an Invasive Non-Native species investigation project.

Line 4L.11 Drinking Water Protected Areas (schemes) (opex)
There is a small decrease in year reflecting the spend profile of these schemes.

Line 4L.16 Investigations (capex)
There is no expenditure associated with Investigations in the AMP7 period. There is £0.143 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme. The AMP8 transition expenditure in the reporting period includes the algae/geosmin investigations and water management investigations.

Line 4L.17 Investigations (opex)
The costs in relation to investigations has reduced year on year as a result of the annual spend profile, and an over-accrual in the prior year.

Supply-demand balance

Line 4L.20 Supply-side improvements delivering benefits in 2020-2025 (capex)
The reduced levels of expenditure in the period 2023/24 is primarily due to the West Cumbria Future Strategy project. This programme is now largely complete reflected by the lower level of activity in the reporting year. There is no allowance as this was reflected in the AMP6 allowances.

Line 4L.23 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (capex)
The lower level of expenditure in the year is due to reduced spend on West Cumbria Future Strategy, Southport Demand Management Zone (DMZ) and Alston Spade Mill Transfer Pipeline projects reflecting the later stages of delivery and project completion.

Line 4L.24 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (opex)
Decreased level of spend in the period attributable to the West Cumbria Future Strategy.

Line 4L.25 Demand-side improvements delivering benefits in 2020-2025 (excl leakage and metering) (totex)
The reported cumulative expenditure is primarily associated with the West Cumbria Future Strategy project and the Alston and Spade Mill transfer pipeline projects. The West Cumbria Future Strategy project is reported as demand-side enhancement as it is a major capital project to resolve the forecast critical period and dry run year supply demand deficit in West Cumbria. In AMP7, the remaining work is associated with the treated water distribution network, which involves laying new network and slip-lining our existing distribution network across the West Cumbria region. The Alston and Spade Mill transfer pipeline is also designed to support demand management within the network. This programme is now largely complete reflected by the lower level of activity in the reporting year. There is no allowance as this was reflected in the AMP6 allowances.

Line 4L.28 Leakage improvements delivering benefits in 2020-2025 (totex)
The reported cumulative expenditure relates to the completion of our leakage loggers investment. No expenditure has been incurred in 2023/24.

Consistent with the 2022/23 query response UUW-APR-CA-001, we have reported expenditure required to meet PR19 leakage targets as enhancement spend. We are delivering a significant improvement in service, aiming to reduce leakage by a further 15% based on a 2018 baseline, which meets the definition of enhancement expenditure in RAG 4.12:

- *15.3 - "Enhancement expenditure is generally where there is a permanent increase or step change in the current level of service to a new "base" level and/or the provision to new customers of the current service level."*

This expenditure does not meet the definition of base expenditure which refers to 'maintaining the current level of service'. At PR19, we also claimed that meeting stretching leakage targets in AMP7 would require enhancement expenditure – the fact that Ofwat did not allow UUW to recover those costs as (additional) enhancement expenditure does not lessen the validity of these costs being enhancement expenditure. Our approach is also consistent with CMA's position on leakage enhancement expenditure.

Line 4L.31 Internal interconnectors delivering benefits in 2020-2025 (totex)

The increased level of expenditure in this line is wholly attributable to increased levels of activity on the West East Link Main (WELM) 150 Project.

Line 4L.34 Supply demand balance improvements delivering benefits starting from 2026 (totex)

There is no expenditure associated with supply demand balance improvements starting from 2026.

Line 4L.37 Strategic regional Water Resources (totex)

The expenditure in this line relates to the three regional water resource projects:

- Joint transfer
- UU sources
- Vyrnwy Aqueduct

The strategic project expenditure on these three named Water Resources schemes has been reported line 4L.35 and listed individually in Table 4F. The expenditure on each of these schemes reflects the activity in the last financial year.

Total major project capital expenditure for Wholesale Water is £1.479 million higher in 2023/24 compared to 2022/23, reflecting progression of the projects. Water Resources has seen an increased level of expenditure of £1.985 million attributed to water trading, which is offset by a lower level of expenditure on the Manchester and Pennine Resilience DPC project within Treated Water Distribution of £0.506 million.

Strategic regional Water Resources costs are below the allowance due to changes in deliverables since the FD.

Metering

Line 4L.39 New meters requested by existing customers (optants) (capex)

There has been a minor increase in Free Meter Options (FMO) reported activity in the year which is consistent with previous year's rising levels of activity.

Line 4L.42 New meters introduced by companies for existing customers (capex)
Consistent with the 2022/23 reporting, there has been a cost allocation to this line in the 2023/24 period associated with new meters introduced by companies for existing customers and consistency of reporting with Table 6D.

Line 4L.45 New meters for existing customers – business (capex)
Consistent with the 2022/23 reporting, there has been a cost allocation to this line in the 2022/23 period associated with new meters existing customers – business.

Line 4L.60 Smart Metering
There is no expenditure associated with Smart Metering in the AMP7 period. There is £2.703 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4L.63 Total metering expenditure
Cumulative expenditure to date is higher than the allowed expenditure reflecting the increased levels of FMO activity in the later years of the AMP together with investment on new meters introduced by companies for existing customers and new meters for existing customers (business).

Other enhancement

Line 4L.66 Improvements to taste, odour and colour (totex)
The adverse variance compared to the allowed expenditure is the consequence of the increased levels of activity on our Taste and Odour projects. These include Granulated Activated Carbon (GAC) projects at Castle Carrock and Mitchells. This line is also capturing additional expenditure relating to further reducing Taste, Smell and Appearance issues for our customers, this includes the relining project at Vyrnwy and a programme of cast iron mains replacement. These are additional enhancement programmes that were not part of our PR19 submission.

Line 4L.67 Addressing raw water deterioration (grey solutions) (capex)
The lower level of expenditure in the 2023/24 period is primarily due to the late stages of delivery and completion of previously high spending projects, including the WTW taste and odour and GAC programme.

Line 4L.72 Addressing raw water deterioration (green solutions) (totex)
Expenditure in this line is attributable to the Catchment Peatland Restoration project and is reported in the total green recovery line of 4S.1 Accelerating partnerships to deliver natural solutions.

Line 4L.81 Enhancing resilience to low probability high consequence events (totex)
The reduced spend in this reporting line in the 2023/24 period is primarily associated with the A6 Stockport 12 and 15 project.

Line 4L.87 Lead communication pipes replaced or relined for water quality (capex)
There has been a minor reduction in the 2023/24 period reflecting the delivery in the year on the lead and/or common supply pipe replacement scheme (LCSP).

Line 4L.89 Other lead reduction related activity (opex)
Other lead reduction activity relates to grant payments made to customers as part of our Lead ODI scheme. The increase in expenditure relates to increased number of eligible customers applying for the scheme.

Line 4L.93 Meeting lead standard (totex)
Our cumulative expenditure exceeds our cumulative allowed expenditure due to higher activity volumes in relation to our lead communication pipe replacement ODI scheme. Under the performance commitment for lead communication pipe replacement, we were granted an incentive rate of £1,120 (17/18 prices) which is equivalent to a replacement cost of £2,240 (17/18 prices) or £2,791 in real terms (23/24 prices).

Our actual unit cost for the work completed in AMP7 to date is £2,629 (23/24 prices) and below the real allowed unit cost.

Line 4L.94 Security – SEMD (capex)
This line includes expenditure required to comply with security enhancement obligations under the Security and Emergency Measures Direction (SEMD). The lower levels of spend in the year reflects the completion of the programme of works.

Line 4L.100 Innovation Competition (capex)
Expenditure incurred on projects awarded as part of the innovation competition fund, for 2023/24 these include Alternative Phosphorus (Natural Coagulants) and Catchment Systems Thinking Cooperative projects.

Line 4L.101 Innovation Competition (opex)
Expenditure incurred on projects awarded as part of the innovation competition fund, for 2023/24 this related to Industrial Symbiosis.

Line 4L.102 Concessionary Supplies (capex)
The expenditure relates to a DWI regulatory commitment to improve the water supply at a number of Concessionary Supply sites. This meets the definition of enhancement as it increases the current level of service being provided to these sites. This is consistent with AMP6 reporting, where investment in Concessionary Supplies has been classified as enhancement.

Table 4M Enhancement expenditure for the 12 months ended 31st March 2024 - Wastewater Network+ and Bioresources

In accordance with RAG 4.12 section 4.52, all costs are reported in report year prices. Costs from previous years have been in inflated using financial-year average CPIH.

The incremental operating costs from the capital schemes, whether positive or negative, have been included against the relevant programme.

All totex lines contained within this table are calculated values.

EA/NRW environmental programme (WINEP/NEP)

Line 4M.1 Conservation drivers (capex)
There is no expenditure associated with Conservation drivers.

Line 4M.6 Event Duration Monitoring (EDM) at intermittent discharges (totex)
The reduced spend in the 2023/24 period is primarily due to the Flow Programme - MON3

Line 4M.9 Flow monitoring at sewage treatment works (totex)
The increased spend in the 2023/24 period is primarily due to the delivery of the Flow Programme - MON4

Line 4M.12 Schemes to increase flow to full treatment (totex)
There is no expenditure associated with Schemes to increase flow to full treatment in 2023/24.

It is worth noting that the scope of the projects within this programme, particularly those with secondary outputs such as Burnley WwTW and Newbiggin WwTW, have been reviewed. Whilst the solutions continue to require an increase to flow to full treatment the regulatory drivers in the WINEP do not meet the definition for the table line 4M.12 (AMP7 driver code: U_IMP5). As a result, expenditure has been allocated to other lines, most notably schemes to increase storm tank capacity, and as such expenditure appears lower than the allowance reported against this line.

Line 4M.13 Schemes to increase storm tank capacity (capex)
The higher levels of expenditure above the cumulative allowed expenditure to the reporting year end reflects the accelerated levels of activity in the programme on a number of high value schemes.

The increased spend in the 2023/24 period is primarily due to the delivery of the Gosforth, Bolton and Bury WwTW enhancement projects.

This line includes 1.059m of green recovery expenditure associated with Sustainable Drainage Solutions which is included in the total green recovery line of 4T.1 Accelerating partnerships to deliver natural solutions, and 1.940m of green recovery expenditure associated with investment at Bury which is included in the total green recovery line of 4T.4 AMP8 WINEP Investments at Bury.

There is £3.165 million of expenditure in the period 2023/24 attributable to the AMP8 accelerated programme and £0.075 million attributable to the AMP8 transition programme.

Two overflow solutions were delivered in 2023/24:

- CHR0021 delivered 2,500m^3 in 2023/24.
- CHR0012 was a treatment solution. Solution is a constructed wetland, the EDM is upstream of the treatment therefore the environmental benefit is from the treatment through the wetland rather than a spill frequency reduction.

This is why we have reported one network, grey spill frequency reduction (CHR0021). CHR0012 does not fit the line criteria and is noted on line 7E.13 'CHR0012 not included as driver met through installation of treatment solution (reed beds) no additional storage provided this differs from the PR19 solution to deliver 1,100m^3 of storage.

Line 4M.14 Schemes to increase storm tank capacity (opex)
Expenditure in this line is higher in the 2023/24 period reflecting the full year impact of projects completed in the previous year plus Harrisons Farm, Nether Peover and PEN 0056 coming into use in FY24.

Line 4M.18 Schemes to provide additional effective storage at sewage treatment works through green infrastructure (totex)
There is no expenditure associated with schemes to provide additional effective storage at sewage treatment works through green infrastructure.

Line 4M.19 Storage in the network to reduce spill frequency at CSOs etc (grey solutions) (capex)
Expenditure in this line is lower than in the 2022/23 period reflecting the completion of a number of previously high value schemes, including the CRH0021 Harrisons Farm Storm Spill project.

There is £13.581 million of expenditure in the period 2023/24 attributable to the AMP8 accelerated programme and £0.020 million attributable to the AMP8 transition programme.

Line 4M.20 Storage in the network to reduce spill frequency at CSOs etc (grey solutions) (opex)
Expenditure in this line is higher than in the 2023/24 period due to King Street CSO coming into use in March 2023.

Line 4M.22 Effective storage in the network to reduce spill frequency at CSOs etc (green solutions) (capex)
This line includes £4.241m of green recovery expenditure associated with investment at Bury and is included in the total green recovery line of 4T.4 AMP8 WINEP Investments at Bury.

Line 4M.25 Total for storage schemes in the network to reduce spill frequency at CSOs etc (grey + green) (totex)

The higher levels of expenditure above the cumulative allowed expenditure to the reporting year reflects the increased levels of activity in the programme on a number of high value schemes. This line also includes expenditure related to the green recovery CSO scheme (BRY0002) and some expenditure to complete AMP6 schemes which was not included in the allowances.

Line 4M.28 Chemical removals schemes (totex)
There is no expenditure associated with Chemical removals schemes.

Line 4M.29 Chemicals monitoring/ investigations/ options appraisals (capex)
Expenditure is lower than in the 2022/23 period due to reduced activity on the CIP3 Quality Investigations programme.

There is £0.328 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4M.32 Nitrogen removal (capex)
There is no expenditure associated with Nitrogen removal schemes.

There is £0.003 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4M.35 Phosphorus removal (capex)
Expenditure in this line is higher than in the 2022/23 period reflecting the continued higher levels of activity in the delivery of the AMP7 regulatory projects.

There is £0.002 million of expenditure in the period 2023/24 attributable to the AMP8 accelerated programme and £4.343 million attributable to the AMP8 transition programme.

Line 4M.36 Phosphorus removal (opex)
Expenditure in this line is higher in the 2023/24 period reflecting the full year impact of projects completed in the previous year plus Wrenbury, Alderley Edge, Audlem, Betley, Buerton South, Eccles, Kidsgrove, Little Budworth, Middlewich, Oldham, Rushton, Wilpshire coming into use during 2023/24. These schemes are delivering solutions that provide treatment to a significantly higher standard, as per our WINEP.

Line 4M.37 Phosphorus removal (totex)
The higher levels of expenditure above the cumulative allowed expenditure to the reporting year end reflects the higher levels of activity in the delivery of the AMP7 regulatory projects together with the impact of costs incurred to complete AMP6 projects as shown in table 7F.

Line 4M.38 Reduction of sanitary parameters (capex)
The higher levels of expenditure above the cumulative allowed expenditure to the reporting year end reflects the increased levels of activity in the programme on a number of high value schemes.

Expenditure in this line is higher than in the 2022/23 period reflecting the delivery of the AMP7 regulatory projects and the delivery of high value schemes, including Macclesfield WwTW - UWWTD and WFD.

This line includes £0.223 million of green recovery expenditure associated with investment at Bury and is included in the total green recovery line of 4T.4 AMP8 WINEP Investments at Bury.

There is £0.713 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4M.39 Reduction of sanitary parameters (opex)
Expenditure in this line is higher in the 2023/24 period reflecting the full year impact of projects completed in the previous year plus Buerton South and Wilpshire coming into use during 2023/24.

Line 4M.41 UV disinfection (or similar) (capex)
The lower level of expenditure in the 2023/24 period is primarily due to the late stages of delivery and completion of previously high spending projects, including Carlisle WwTW - Shellfish Waters - AMP7.

Line 4M.42 UV disinfection (or similar) (opex)
Expenditure is in line with the 2022/23 period.

Line 4M.44 Investigations (capex)
Expenditure in this line is higher than the 2022/23 period primarily due to increased levels of activity on the green recovery SOAF Investigations and ICM modelling project. A total of 2.133m of green recovery expenditure associated with these two schemes is included in the total green recovery line of 4T.7 Tackling storm overflows.

There is £0.014 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Other enhancement

Line 4M.48 Growth at sewage treatment works (excluding sludge treatment) (capex)
Expenditure in this line is higher than in the 2022/23 period reflecting the delivery of the AMP7 regulatory projects and the delivery of high value schemes, including Macclesfield WwTW - UWWTD and WFD.

Line 4M.53 Reduce flooding risk for properties (totex)
This line includes all expenditure incurred by the company to minimise the risk of flooding within the region.

Line 4M.54 First time sewerage (capex)
Expenditure in this line is higher in the 2023/24 period primarily due to the Crank Road septic tank project.

Line 4M.59 Sludge enhancement (quality) (totex)
There is no expenditure associated with Sludge enhancement (quality) schemes in 2023/24.

Line 4M.62 Sludge enhancement (growth) (totex)
There is no expenditure associated with Sludge enhancement (growth) schemes.

Line 4M.65 Odour (totex)
There is no expenditure associated with odour schemes.

Line 4M.68 Enhancing resilience to low probability high consequence events (totex)
There is no expenditure associated with enhancing resilience to low probability high consequence events.

Line 4M.71 Security – SEMD (totex)
There is no expenditure associated with Security – SEMD schemes.

Line 4M.74 Security - Non-SEMD (totex)
There is no expenditure associated with Security - Non-SEMD schemes.

Line 4M.75 NEP Discharge Relocation (capex)
There is no expenditure associated with Discharge Relocation in 2023/24.

Line 4M.77 NEP requirement for bathing water shellfish driver delivered through long sea outfall or increased FTFT (capex)
The higher levels of expenditure above the cumulative allowed expenditure to the reporting year end reflects the increased levels of activity in the programme is wholly attributable to the completion of the AMP6 Blackburn and Darwen project.

Line 4M.78 NEP requirement for bathing water shellfish driver delivered through long sea outfall or increased FTFT (opex)
Expenditure in this line is higher in the 2023/24 period reflecting inflation increases.

Line 4M.79 Innovation Competition (capex)
Expenditure incurred on projects awarded as part of the innovation competition, for 2023/24 these are made up of Sewer AI (WRC)" and "Alternative P (Natural Coagulants).

Line 4M.80 Innovation Competition (opex)
Expenditure incurred on projects awarded as part of the innovation competition, for 2023/24 this related to Industrial Symbiosis.

Line 4M.81 NEP phase 5 WFD schemes - treatment increased storage or investigations (capex)
There is no expenditure associated with NEP phase 5 WFD schemes - treatment increased storage or investigations.

Line 4M.83 WINEP / NEP - Eels Regulations (measures at outfalls) (capex)
There is no expenditure associated with WINEP / NEP - Eels Regulations (measures at outfalls) schemes.

Line 4M.87 Restoration management (marine conservation zones etc) (capex)
This line has been added as part of the 2023/24 reporting exercise. The small spend is wholly attributable to a proportional allocation from the Leigh WwTW AMP7 Biodiversity project.

Line 4M.89 Continuous river water quality monitoring (capex)
This line has been added as part of the 2023/24 reporting exercise. The small spend is wholly attributable to Windermere Catchments Strategy and Continuous WQ Monitoring Investigations.

There is £0.005 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4M.91 Catchment management - nutrient balancing (capex)
This line has been added as part of the 2023/24 reporting exercise. There is £0.006 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Line 4M.95 Septic tank replacements – treatment solution (capex)
This line has been added as part of the 2023/24 reporting exercise. There is £0.021 million of expenditure in the period 2023/24 attributable to the AMP8 transition programme.

Table 4Q Developer services - New connections, properties and mains

Connections volume data

Line 4Q.1 New connections (residential – excluding NAVs), Line 4Q.2 New connections (business – excluding NAVs)
The number of new residential connections is 13,376 which is C.10,000 lower than business plan anticipated volumes and C.3,000 less than 2023/23. We believe overall demand for new properties has continued to decline

due to cost of living pressures. Higher cost of living means lower disposable income and potentially lower number of buyers. High inflation rates mean higher mortgage rates, which may put people off buying.
For wastewater connections we do not explicitly track or record new connections to the sewer network. All new connections are carried out by the developer or their agents, not us, and we are not notified of all new connections to sewers. Connection can be made direct to the sewer, an existing drain or adoptable network. On the basis that each new property with a water connection will usually need separate drainage for foul and surface water, we have allowed two connections per property. We have then applied a small reduction factor for water only connections e.g. (existing properties) and foul only connections (e.g. water to soakaway).

Line 4Q.3 Total new connections served by incumbent
This is a calculated line.

Line 4Q.4 New connections – SLPs
The majority of new connections are undertaken by SLP's (Self Lay Partners)

Properties volume data

Line 4Q.5 New properties (residential - excluding NAVs), Line 4Q.6 New properties (business - excluding NAVs)
The number of new properties at C.20,000 is lower than the previous year.

Line 4Q.7 Total new properties served by incumbent
This is a calculated line.

Line 4Q.8 9 New residential properties served by NAVs, Line 4Q.9, New business properties served by NAVs, Line 4Q.10 Total new properties served by NAVs
These are new lines for AMP7. We have reported the numbers available to us but recognise that, as we are reporting on customers connected to another company's network, we are reliant on NAVs providing accurate information. As more NAV sites are granted, the assumptions being made will potentially reduce confidence in the data being reported.

Line 4Q.11 Total new properties
This is a calculated line.

Line 4Q.12 New properties – SLP connections
We have no comments for this line.

New water mains data

Line 4Q.13 Length of new mains (km) – requisitions and Line 4Q.14 Length of new mains (km) – SLPs
We have almost 102km of new mains – the majority, 88km, are laid by SLPs and the remainder 14.6km are requisitions. This is lower than the previous year and is likely to be linked to the slowdown in the developer arena and slowdown in new house building activity.

Table 4R Connected properties, customers and population

Customer numbers - average during the year

Line 4R.1 Residential water only customers, Line 4R.2 Residential wastewater only customers, Line 4R.3 Residential water and wastewater customers

There has been an overall increase of C.44,000 customers. This is largely attributable to the number of new connections and the ongoing work as part of the Voids performance commitment. See page 79 of section 1.1 of the main APR for further details about Voids.

Line 4R.4 Total residential customers
This is a calculated line.

Line 4R.5 Business water only customers, Line 4R.6 Business wastewater only customers, Line 4R.7 Business water & wastewater customers, Line 4R.8 Total business customers
There has been a small increase of C.1,850 business customers.

Line 4R.9 Total customers
This is a calculated line.

Property numbers - average during the year

Residential properties
Line 4R.10 – Residential properties billed
The average number of households billed for water has increased by C.42,000 which is due to the number of new properties and our continued targeted work towards the voids performance commitment. See page 79 of section 1.1 of the main APR for further details.

Line 4R.11 - Residential void properties
The average number of void properties is C.23,500 less than the previous year due to continued targeted work towards the retail voids performance commitment.

Line 4R.12 Total connected residential properties
This is a calculated line.

Business Properties
Line 4R.13 Business properties billed
The average number of business properties billed for water has increase by C.700.

Line 4R.14 Business void properties
The average number of void business properties billed for water has decreased by C.4,000.

Line 4R.15 Total connected business properties
This is a calculated line.

Line 4R.16 Total connected properties
This is a calculated line

Property and meter numbers - at end of year (31st March)

Line 4R.17 Total new residential properties connected in year, Line 4R.18 Total new business properties connected in year
There are no new unmeasured properties – all new properties will be measured.

Line 4R.19 Residential properties billed at year end
We have reported the number properties billed for water. This includes properties billed for water and wastewater and properties billed for water only.

Line 4R.20 Residential properties unbilled at year end
We do not have any unbilled accounts at year end. All active accounts in our billing system are liable to be charged and a bill issued to the customer.

Line 4R.21 Residential void properties at year end
We have seen a further significant reduction on void property numbers which is largely due to the performance within the voids performance commitment. See page 79 of section 1.1 of the main APR for further details.

Line 4R.22 Total connected residential properties at year end
This is a calculated line.

Line 4R.23 Business properties billed at year end
There has been an increase of C.1,800 properties as more properties are billed reflecting the work done on business voids and gap sites.

Line 4R.24 Business properties unbilled at year end
We identify eligible business premises in line with the Ofwat eligibility guidance. All premises deemed eligible are registered in the non-household market and wholesale charges raised accordingly. If the criteria is not met, a premises would not be registered in the market and therefore we do not have any unbilled non-household premises. Exceptions to this rule would be gap sites, which by their very nature means we are unaware of them and therefore do not bill.

Line 4R.25 Business void properties at year end
The number of void properties at year end has decreased by C.3,100 reflecting the work done on business voids and gap sites. See pages 74 to 75 and 79 of section 1.1 of the main APR for further details.

Line 4R.26 Total connected business properties at year end
This is a calculated line.

Line 4R.27 Total connected properties at year end
This is a calculated line. There has been an overall increase of C.25,000.

Population data

Our population continues to grow steadily year on year. This growth is a combination of expected regional growth and an improvement in data quality as a result of improvements to the accuracy of the area mapping data used to assign population.

Line 4R.28 Resident population (Water)
The resident population has increased by C.49,000 an increase of 0.67 per cent over the previous reporting period. A population increase is expected each year, therefore this is in line with expectation and is within the historic range.

Line 4R.28 Resident population (Wastewater)
Resident population has increased by C.40,000 an increase of 0.54 per cent over the previous reporting period.

Line 4R.29 Non-Resident population
The contribution to non-resident population from tourism and clandestine population has increased by 46,836, an increase of 17 per cent over the previous reporting period. Tourism data is always a lagging indicator due to the nature of when the data becomes available. As the best available data this allows a degree of consistency as the trend carries through the reporting years even though the data set is not a direct match to the reporting year. The Tourism data is for 2022 so as anticipated numbers are recovering post COVID-19 and would have expected this to have impacted data and tourism in the area.

Line 4R.30 Household population

Line 4R.31 Measured household population

Line 4R.32 Unmeasured household population

Overall household population as increased by 1.1 per cent or C.79,000. Measured population has increased by C.90,000 and unmeasured has decreased by C,11,000.
Non-resident population is not used in the calculation and is reported as zero.

Table 4S Green recovery expenditure for the 12 months ended 31 March 2024 - Water Resources and Water Network+

A detailed overview of our green recovery activity and expenditure for 2023/24 can be found in our green recovery progress report at:
https://www.unitedutilities.com/globalassets/documents/pdf/green-recovery-2024

Table 4T Green recovery expenditure for the 12 months ended 31 March 2024 - Wastewater Network+ and bioresources

A detailed overview of our green recovery activity and expenditure for 2023/24 can be found in our green recovery progress report at:
https://www.unitedutilities.com/globalassets/documents/pdf/green-recovery-2024

Table 4U Impact of green recovery on RCV

Line 4U.1 Approved bid
The green recovery allowance for 2023/24 as issued by Ofwat on 7 June 2022 within document 'UUW Enh by year (revised)_07.06.22'.

Line 4U.2 Actual totex
Calculated as the sum of lines 4S.15 and 4T.15.

Line 4U.3 – 4U.5 Variance
In 2023/24, green recovery spend of £10.7 million is below the planned profile of £32.6 million. Underspend is classified as timing, as we expect equivalent increases in green recovery spend later in this AMP, and AMP8 for WINEP investments at Bury.

A detailed overview of our green recovery activity and expenditure for 2023/24 and future can be found at:
https://www.unitedutilities.com/globalassets/documents/pdf/green-recovery-2024

Line 4U.6 – 4U.11 Customer cost sharing rate
As per the 'Green economic recovery: Final decisions' document published by Ofwat. Given the uncertainty over the true costs of the innovative schemes, underspend will be subject to a 90 (customer share):10 (company share) sharing rate, to ensure underspend variances are weighted heavily in customers' favour, while still providing companies with an incentive to act efficiently. Overspend is subject to an equal 50/50 share between customers and the company.

Line 4U.13
In period funding does not apply to our green recovery programme.

Table 4X Accelerated infrastructure delivery project expenditure for the 12 months ended 31 March 2024 – Water Resources & Water Network +

Accelerated infrastructure delivery project

Not applicable as there are no approved accelerated infrastructure delivery projects in Water for United Utilities.

Table 4Y Accelerated infrastructure delivery project expenditure for the 12 months ended 31 March 2024 – Wastewater Network + & Bioresources

Accelerated infrastructure delivery project

The £16.748 million of expenditure associated with the accelerated infrastructure delivery project is reported in across three lines in table:

4M.13 Schemes to increase storm tank capacity has £3.059 million of expenditure.

4M.19 Storage in the network to reduce spill frequency at CSOs etc (grey solutions) £13.581million.

4M.35 Phosphorus removal £0.107 million.

The breakdown of expenditure of each of the accelerated programme schemes is summarised as:

Accelerated infrastructure delivery project	RAG 4 reference and line description	Foul, surface water and highway drainage	Sewage treatment and disposal
Scheme ENV2 - Accelerating habitats improvement in the Eden catchment	4M.35 Phosphorus removal	0.000	0.107
Scheme ENV2 - Accelerating habitats improvement in the Eden catchment	**Total**	**0.000**	**0.107**
Scheme ENV4 - Reducing the frequency of storm overflow discharges in Windermere catchment	4M.13 Schemes to increase storm tank capacity	1.143	0.000
Scheme ENV4 - Reducing the frequency of storm overflow discharges in Windermere catchment	4M.19 Storage in the network to reduce spill frequency at CSOs etc (grey solutions)	0.462	0.000
Scheme ENV4 - Reducing the frequency of storm overflow discharges in Windermere catchment	**Total**	**1.606**	**0.000**
Scheme ENV10 - Bathing waters	4M.13 Schemes to increase storm tank capacity	0.096	0.000
Scheme ENV10 - Bathing waters	4M.19 Storage in the network to reduce spill frequency at CSOs etc (grey solutions)	0.318	0.000
Scheme ENV10 - Bathing waters	**Total**	**0.414**	**0.000**
Scheme ENV3 - Delivering improvements to storm overflows	4M.13 Schemes to increase storm tank capacity	1.820	0.000
Scheme ENV3 - Delivering improvements to storm overflows	4M.19 Storage in the network to reduce spill frequency at CSOs etc (grey solutions)	12.801	0.000
Scheme ENV3 - Delivering improvements to storm overflows	**Total**	**14.621**	**0.000**
Total accelerated infrastructure delivery projects	**Total**	**16.641**	**0.107**

Table 5A Water Resources asset and volumes data for the 12 months ended 31 March 2024

Water Resources

Line 5A.1 – Water from impounding reservoirs
There has been an increase in water from impounding reservoirs of 69.86 Ml/d in the report year. This is due to variations in water sources used to meet operational requirements.

Line 5A.2 – Water from pumped storage reservoirs
We do not have any pumped storage reservoirs.

Line 5A.3 – Water from river abstractions
There has been a decrease in water from river abstractions of 77.836 Ml/d in the report year. This is due to the variations in water sources used to meet operational requirements.

Line 5A.4 – Water from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes
There has been a decrease in water from ground water works of 17.65 Ml/d in the report year. This is due to variations in water sources used to meet operational requirements.

Line 5A.5 – Water from artificial recharge (AR) water supply schemes, Line 5A.6 – Water from aquifer storage and recovery (ASR) water supply, Line 5A.7 – Water from saline abstractions and Line 5A.8 – Water from water reuse schemes
We do not currently have any of these water sources therefore the number is zero.
Line 5A.9 – Number of impounding reservoirs
The number of impounding reservoir sources in use varies from year to year depending on weather, demand and asset outages. The number reported has decreased to 46 this year from 53 reported in 2022/23.
The reduction in the report year is due to preferential abstractions opportunities and the reduction of operational sites due to completion of the West Cumbria scheme.

Line 5A.10 – Number of pumped stored reservoirs
We have not currently classed any of our reservoirs as pumped storage reservoirs therefore the number is zero.
Line 5A.11 – Number of river abstractions
The number of sources varies from year to year depending on weather, demand and asset outages. We have reported 18 river abstractions in this year compared to 24 in 2022/23.
Crummock, Dask Beck, Ennerdale, Hause Gill and River Ellen are no longer in operation following completion of the West Cumbria Compensatory Measures Scheme.

Line 5A.12 – Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes
The number of sources varies from year to year depending on weather, demand and asset outages. This year we used 61 sources compared to 69 in the previous year.
Four of groundwater sites have been mothballed due to the cessation of production at Ennerdale WTWs.

Line 5A.13 – Number of artificial recharge (AR) water supply schemes
Line 5A.14 – Number of aquifer storage and recovery (ASR) water supply schemes
Line 5A.15 – Number of saline abstraction schemes
Line 5A.16 – Number of reuse schemes
We do not currently have any of these water sources therefore the number is zero.
Line 5A.17 – Total number of sources
The number of sources varies from year to year depending on weather, demand and asset outages. 125 sources were used in 2023/24 compared to 146 in 2022/23.
The reduction is primarily due to the completion of the West Cumbria scheme, and to a lesser extent the preferential selection of sources at a local operational level.

Line 5A.18 –Total number of water reservoirs
This is the same as the previous report year.

Line 5A.19 – Total volumetric capacity of water reservoirs
This is the same as the previous report year.
Line 5A.20 – Total number of intake and source pumping stations
The number of intake and source pumping stations has reduced from 142 in 2022/23 to 138 in 2023/24.

Line 5A.21 – Total installed power capacity of intake and source pumping stations
The slight decrease in capacity is due to the reduction in the number of pumping stations.

Line 5A.22 – Total length of raw water abstraction mains and other conveyors
There has been a decrease in the length of raw water abstraction mains and other conveyors. This is due to updated GIS information following a data cleanse.

Line 5A.23 – Average pumping head – raw water abstraction
In response to the Turner and Townsend and WRc 'Average Pumping Head: data quality improvement' report in March 2022, a review of the Average Pumping Head (APH) methodology was carried out for last reporting year. We reviewed our methodology in line with the rest of the industry and are continuing to identify opportunities to improve our data quality in future periods.
During the reporting year, we have carried out further validation of the estimation methods employed. This has included reviewing and updating asset details and attributes (e.g. height, destination and meter reference information) to the corporate data system and the APH calculation model. We will continue to look for opportunities to improve data quality in the coming year.
For the Raw Water Abstraction price control:

- 0 per cent of sites have measured data for lift **and** volume. These sites contribute 0 per cent of the APH for the price control.
- 94 per cent of sites have measured data for lift **or** volume. These sites contribute 98 per cent of the APH for the price control.
- Where measured data is not available, estimations are used. Static ground level measurements and standard hydraulic formula are used to estimate lift, and network demand data is used to estimate volume. Where these estimation methods are not available, typical values are used based on similar assets.

Variance between 2022/23 and 2023/24
Raw water abstraction APH has reduced from 10.76 in 2022/23 to 8.59 in 2023/24. The decrease can be attributed to changes due to the removal of four borehole sites following completion of the West Cumbria scheme, and decreased use of other groundwater sources to maximise the use of more cost-efficient gravity sources.
Variance between 2022/23 and FBP forecast
The 2023/24 APH is higher than the business plan forecast. This is due to changes to our methodology since we submitted our business plan forecasts. Also, our water network is a dynamic system and operation of sources and pumps differs depending on a number of variables such as changes in demand, weather, how much we abstract from different sources and operational changes to assets to ensure we meet demand in the most efficient way.

Line 5A.24 – Energy consumption - raw water abstraction, Line 6A.7 Energy consumption - raw water transport, Line 6A.35 Energy consumption - water treatment and Line 6B.23 Energy consumption – treated water distribution
From 2020/21 the reporting lines for the water business changed, splitting water into abstraction, transport, treatment and distribution. This has remained the same for 2023/24 reporting.

Overall Water Wholesale (which includes abstraction, transport, treatment and distribution) has seen an 8per cent decrease from 2022/23 to 2023/24. Overall energy consumption in 2022/23 was 364,910 MWh, and in 2023/24 it was 337,174 MWh.

The decrease in energy consumption is due to:

- 1per cent decrease in water production, along with reduction in water demand, and use of different water sources meaning less pumped demand compared to 2022/23, which has resulted in 8per cent less electricity consumption.
- A milder winter, resulting in 11per cent less natural gas consumption for heating on Water Treatment sites over the year compared with 2022/23.
- Improvement in business area allocation for stationary fuel use, by using cost centres paying for the fuel, resulting in 14per cent less stationary fuel consumption compared with 2022/23.

Note - the inclusion of stationary fuel for UUW hired equipment (pumps and generators), which was not included before 2023/24 as the data was not available, has resulted in an increase of 991 MWh on stationary fuel total for the Water Business. This is a relatively small allocation compared to the quantity consumed by the Wastewater Business.

Line 5A.25 – Total number of raw water abstraction imports,
Line 5A.26 – Water imported from 3rd parties' raw water abstraction systems
We do not currently have any raw water abstraction imports.

Line 5A.27 – Total number of raw water abstraction exports and
Line 5A.28 – Water exported to 3rd parties' from raw water abstraction systems
We have one raw water abstraction export at Heronbridge. The volume of raw water exported from Heronbridge has again decreased in the reporting year reflecting lower demand from Dwr Cymru.

Line 5A.29 – Water resources capacity (measured using water resources yield)
The total capacity company forecast is based on the summation of the individual capacities for each of the UUW water resource zones. This is consistent with last year's reported figure.

Line 5A.30 – Total number of completed investigations (WINEP/NEP), cumulative for AMP
There are 25 WINEP investigations that have been completed so far in this AMP. The number of completed WINEP investigations will not change going forward, as all the investigations that were agreed to be delivered in AMP7 have now been completed.

Table 5B Water Resources operating cost analysis for the 12 months ended 31 March 2024

Line 5B.1 – Power
All energy costs, including the climate change levy and the carbon reduction commitment.

Where possible costs are allocated down to supply point level and therefore the associated asset class within the Water Resources price control. In comparison to 2022/23 power costs have decreased slightly in year which is mainly attributable to an increase power price and decreased river abstraction and use of boreholes.

Line 5B.2 – Income treated as negative expenditure
Income received from Renewable Obligation Certificates, Gas Exports and Electricity Exports. There is no value allocated to Water Resources.

Line 5B.3 – Abstraction charges/ discharge consents
Total cost of abstraction charges and service charges from the Environment Agency (EA), Canal and River Trust and Severn Trent (service charge for use of Vyrnwy). For EA abstraction charges the costs are individually listed by each licence and therefore the associated Water Resource asset types, using this information, a percentage of total cost for each water resource category is calculated.

Line 5B.4 – Bulk supply
In line with the updated guidance in the RAGs, bulk supply import costs are allocated across upstream services in proportion to total cost of the supplying company (previously all bulk supply costs were reported in Treated Water Distribution). For 2023/24 the cost has been allocated to the asset category of the supplying company which drives the water resource allocation as opposed to the water supply source.

Line 5B.5 – Renewals expensed in year (Infrastructure)
Reduced costs have been incurred in the Impounding Reservoir IRE programme compared to last year reflecting the project specific construction activity.

Line 5B.6 – Renewals expensed in year (Non-Infrastructure)
We have not included any expenditure within this line.

Line 5B.7 – Other operating expenditure excluding renewals
Sum of all costs in the Water Resources price control. The costs have decreased when compared to 2022/23 due to dry weather incident costs and other provisions in the prior year.

Line 5B.8 – Local authority and Cumulo rates
The cost of local Cumulo rates are allocated based on the total of the Central List (Cumulo) Rates payments which are then allocated to upstream services and water resource asset type on a proportionate basis to GMEAV of all Water Assets (both Infrastructure and Non-Infrastructure). Costs have decreased on prior year due to a reduction in rateable value.

Line 5B.9 – Total operating expenditure (excluding 3rd party)
This is a calculated line.

Table 6A Raw water transport, raw water storage and water treatment data for the 12 months ended 31st March 2024

Raw water transport and storage
Line 6A.1 - Total number of balancing reservoirs
There has been no change in the number compared with last year.

Line 6A.2 - Total volumetric capacity of balancing reservoirs
There has been no change in the number compared with last year.

Line 6A.3 Total number of raw water transport stations
There has reduced from eight in 2022/23 to seven in 2023/24.

Line 6A.4 Total installed power capacity of raw water transport pumping stations
There has been a slight decrease due to the reduction in the number of pumping stations.

Line 6A.5 Total length of raw water transport mains and other conveyors
This is consistent with last year.

Line 6A.6 Average pumping head - raw water transport

In response to the Turner and Townsend and WRc 'Average Pumping Head: data quality improvement' report in March 2022, a review of the Average Pumping Head (APH) methodology was carried out for last reporting year. We reviewed our methodology in line with the rest of the industry and are continuing to identify opportunities to improve our data quality in future periods.

During the reporting year, we have carried out further validation of the estimation methods employed. This has included reviewing and updating asset details and attributes (e.g. height, destination and meter reference information) to the corporate data system and the APH calculation model. We will continue to look for opportunities to improve data quality in the coming year.

For the Raw Water Transport price control:

- 3 per cent of sites have measured data for lift **and** volume. These sites contribute 0 per cent of the APH for the price control.
- 100 per cent of sites have measured data for lift **or** volume. These sites contribute 100 per cent of the APH for the price control.
- Where measured data is not available, estimations are used where possible. Static ground level measurements and the standard hydraulic formula are used to estimate Head and network demand data is used to estimate Flow. Where these estimation methods are not available, typical values are used based on similar assets.

Variance between 2022/23 and 2023/24

Raw water transport APH has reduced from 21.90 in 2022/23 to 19.34 in 2023/24. The decrease can be attributed to changes due to the removal of four Borehole sites following completion of the West Cumbria scheme, and decreased use of other groundwater sources to maximise the use of more cost-efficient gravity sources.

Variance between 2023/24 and FBP forecast

The 2023/24 APH is higher than the business plan forecast. This is due to changes to our methodology since we submitted our business plan forecasts. Also our water network is a dynamic system and operation of sources and pumps differs depending on a number of variables such as changes in demand, weather, how much we abstract from different sources and operational changes to assets to ensure we meet demand in the most efficient way.

Line 6A.7 Energy consumption - raw water transport

See commentary for Line 5A.24

Line 6A.8 Total number of raw water transport imports, Line 6A.9 Water imported from 3rd parties' raw water transport systems, Line 6A.10 Total number of raw water transport exports, Line 6A.10 Total number of raw water transport exports and Line 6A.11 Water exported to 3rd parties raw water transport systems

We do not have any imports/exports to/from 3rd parties' raw water transport systems.

Line 6A.12 Total length of raw and pre-treated (non-potable) water transport mains for supplying customers.

This is consistent with last year

Water treatment - treatment type analysis

We are required to report water treatment works that have not been used in the year but have not been decommissioned. The water treatment works in the table below have not been used in the year because they were not required to meet demand.

Site	Treatment type	Site	Treatment Type
Newton WTW	GW2	Heaton Park WTW	SW4
Delamere New WTW	GW5	Springfield WTW	GW2

Buttermere WTW	SW4	Mill Brow WTW	GW3
Daresbury WTW	GSD	Walton WTW	GSD
Mow Cop WTW	GSD		

Line 6A.13 All simple disinfection works
We have no surface water simple disinfection works. The volume of water treated at ground water simple disinfection works was slightly below the previous year.

Line 6A.14 W1 works
None of our WTWs fall into the ground or surface water W1 category.

Line 6A.15 W2 works
We have seen a decrease in water treated at surface water sites (-63.03Ml/d) – this has been primarily driven by decreased flows from Woodgate Hill WTW; the output from this site is determined by demand. This year we have seen lower production volumes at the site due to a decrease in demand.
We have reported a decrease in groundwater production (-20.54Ml/d). A detailed review of WTWs processes has been undertaken during the report year and five GW2 sites were identified as having UV disinfection installed in previous years. These sites have been reclassified as GW4 in the report year. The UV was installed in November 2018 and therefore these sites should have been reported in the GW4 category from the 2018/19 report year. We will update previous year's figures in our PR24 response to draft determination data tables.

Line 6A.16 W3 works
There has been a decrease in production volumes at surface water sites (-24.39Ml), primarily due to reduced output at Watchgate and Lostock.

Line 6A.17 W4 works
There has been an increase in production at surface water sites (+22.89), attributable to higher flows at Williamsgate (now fully commissioned).
Following a detailed review of WTWs processes, several sites were identified as having UV disinfection installed in previous years. This correction has resulted in six sites being recategorised as GW4. This has affected following sites - Lymm, Netherley, Pex Hill, Prenton, Stockswell and Water Lane. Five of these sites were previously listed as GW2, one listed as GSD. The process changes at these sites i.e. installation of UV was completed in November 2018, to mitigate water quality risks, apart from Prenton which had Amazon Filters installed in in 2021. This operational change was identified during 2023/24 Regulatory Reporting via the additional data validation stage completed by the Risk Managers. We will update previous year's figures in our PR24 response to draft determination data tables.

Line 6A.18 W5 works
We have seen a slight increase in production volumes at both surface (+12.78) and groundwater (+2.76) W5 works – in-line with normal operational variation.

Line 6A.19 W6 works
None of our WTWs fall into the ground or surface water W6 works category.

Water treatment – works size

Line 6A.20 - 27 WTWs in size band 1 - 8
Total number of WTWs remains unchanged from the previous year. As a result of the annual PWPC capacity review a small number of WTWs have changed size bandings. This has resulted in a net increase of Bands 2 (+2) and 3 (+1) and a decrease in Bands 1 (-2) and 4 (-1).

The WTWs affected are Bearstone (1.30Ml/d - Band 1 to 2.02Ml/d - Band 2), Tarnwood (1.92Ml/d - Band 1 to 2.17Ml/d – Band 2) and Thorncliff Road (9.47Ml/d - Band 4 to 7.63Ml/d – Band 3).

Line 6A.28 Peak week production capacity (PWPC)

PWPC varies from year to year. This year we have seen a slight decrease from the previous year .

Line 6A.29 Total peak week production capacity (PWPC) having enhancement expenditure for grey solution improvements to address raw water quality deterioration

We have no comment for this line.

Line 6A.30 Total peak week production capacity (PWPC) having enhancement expenditure for green solutions improvements to address raw water quality deterioration

A benefit of 789.82 Ml/d PWPC has been delivered through the delivery of green solution enhancement schemes.

Line 6A.31 Total water treated at more than one type of works

We have seen a decrease in water treated at more than one site (-54.68 Ml), primarily due to decreased production volumes at Woodgate Hill WTWs.

Line 6A.32 Number of treatment works requiring remedial action because of raw water deterioration

We have undertaken remedial action at Castle Carrock WTW, Mitchells WTW and Laneshaw WTW to address taste and odour issues.

Line 6A.33 Zonal population receiving water treated with orthophosphate

There has been no real change in the area of coverage with phosphate dosing in 2023/24. The increase in reported population receiving orthophosphate is down to a change in the source population figures. This line has been calculated using 2024 mid-year population projections.

Line 6A.34 Average pumping head – water treatment

In response to the Turner and Townsend and WRc 'Average Pumping Head: data quality improvement' report in March 2022, a review of the Average Pumping Head (APH) methodology was carried out for last reporting year. We reviewed our methodology in line with the rest of the industry and are continuing to improve our data quality.

During the reporting year, we have carried out further validation of the estimation methods employed. This has included reviewing and updating asset details and attributes (e.g. height, destination and meter reference information) to the corporate data system and the APH calculation model.

We reviewed our methodology in line with the rest of the industry and are continuing to identify opportunities to improve our data quality in future periods.

For the Water Treatment price control:

- 0 per cent of sites have measured data for lift **and** volume. These sites contribute 0 per cent of the APH for the price control.
- 31 per cent of sites have measured data for lift **or** volume. These sites contribute 25 per cent of the APH total for the Water Treatment Price Control.
- Where measured data is not available, estimations are used where possible. Static ground level measurements and the standard hydraulic formula are used to estimate Head and network demand data is used to estimate Flow. Where these estimation methods are not available, typical values are used based on similar assets.

Variance between 2022/23 and 2023/24

Raw water treatment APH has increased from 12.75 in 2022/23 to 13.89 in 2023/24. The increase can be attributed to variances in operation and improved data quality.

Variance between 2023/24 and FBP forecast

The 2023/24 APH is higher than the business plan forecast. This is due to changes to our methodology since we submitted our business plan forecasts. Also, our water network is a dynamic system and operation of sources and

pumps differs depending on a number of variables such as changes in demand, weather, how much we abstract from different sources and operational changes to assets to ensure we meet demand in the most efficient way.

Line 6A.35 Energy consumption - water treatment
See commentary for Line 5A.24

Line 6A.36 Total number of water treatment imports, Line 6A.37 Water imported from 3rd parties' water treatment works, Line 6A.38 Total number of water treatment exports and Line 6A.39 Water exported to 3rd parties' water treatment works
We do not currently import from or export to 3rd parties' water treatment works.

Table 6B Treated water distribution - assets and operations for the 12 months ended 31st March 2024

Water treatment – Assets and operations

Line 6B.1 Total installed power capacity of potable water pumping stations
There has been an increase in potable water pumping station capacity. The change in capacity is due to the addition and removal of pumps and updates to corporate data. One pumping station has been closed and four new pumping stations have been added.

Removed	Added
Quarry Hill	Aubrey BP2
	Clatterbridge
	Danebent
	Pike Lowe

Line 6B.2 Total volumetric capacity of service reservoirs
There has been a decrease in the number and capacity of service reservoirs. We have decommissioned three service reservoirs in the report year.

Removed
Clarkes Hill SR
Silloth SR
Summergrove SR

Line 6B.3 Total volumetric capacity of water towers
There has been a decrease to the volumetric capacity of water towers due to one water tower at Prenton being decommissioned in 2023/24.

Line 6B.4 Water delivered (non-potable)
There has been an increase in the water delivered (non-potable) over the reporting period.

Line 6B.5 Water delivered (potable)
Line 6B.6 Water delivered (billed measured residential)
Line 6B.7 Water delivered (billed measured business)
We have seen an increase in potable water delivered, water delivered (billed measured residential) and water delivered (billed measured residential) in the report year. These increases are due to a review of supply pipe losses which has impacted the split between distribution main losses and supply pipe losses, this has had no material impact to total leakage.
We carried out the review of supply pipe losses with methodological alignment to the previous industry best practice study carried out in 2018/19 and have updated per property supply pipe losses estimates, based on monitoring a sample of measured/metered and unmeasured/unmetered properties.

Line 6B.8 Proportion of distribution input derived from impounding reservoirs
We have applied the following guidance from RAG 4.12 when calculating the distribution input proportions. 'If multiple sources feed a works (for example a river and a number of boreholes) and the flow from these sources is combined prior to treatment, then all of the flow entering the works can be categorised as the more difficult to treat water. (In this example, all of the water would be categorised as river water.)'

We have seen an increase in the distribution input derived from impounding reservoirs reflecting increased output from the new Williamsgate WTW.

Line 6B.9 Proportion of distribution input derived from pumped storage reservoirs
We have not currently classed any of our reservoirs as pumped storage reservoirs therefore the number is zero.

Line 6B.10 Proportion of distribution input derived from river abstractions
We have seen a decrease in the proportion of distribution input derived from river abstractions following the completion of the West Cumbria scheme.

Line 6B.11 Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes
The number reported is consistent with last year.

Line 6B.12 Proportion of distribution input derived from artificial recharge (AR) water supply schemes, Line 6B.13 Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes, Line 6B.14 Proportion of distribution input derived from saline abstractions and Line 6B.15 Proportion of distribution input derived from water reuse schemes
We do not currently have any of these schemes therefore the number is zero.

Line 6B.16 Total number of potable water pumping stations that pump into and within the treated water distribution system
The number of potable water pumping stations has increased from last year. One pumping station has been decommissioned and there are four new pumping stations reported this year.

Removed	Added
Quarry Hill	Aubrey BP2
	Clatterbridge

	Danebent
	Pike Lowe

Line 6B.17 Number of potable water pumping stations delivering treated groundwater into the treated water distribution system

The number of potable water pumping stations delivering treated ground water into the treated water distribution system has decreased to 23 in the report year from 27 reported in the previous year. This is because of changes in classification of WTWs.

Castle Carrock has changed from ground water to surface water with an associated movement of three pumping stations. Hug Bridge has changed from ground water to surface water with an associated movement of two pumping stations. Quarry Hill has changed from surface water to ground water with an associated movement of one pumping station.

Line 6B.18 Number of potable water pumping stations delivering surface water into the treated water distribution system

The number of potable water pumping stations delivering treated ground water into the treated water distribution system has increased to 62 in the report year from 59 reported in the previous year. This is because of changes in classification of WTWs.

Castle Carrock has changed from ground water to surface water with an associated movement of three pumping stations. Hug Bridge has changed from ground water to surface water with an associated movement of two pumping stations. Quarry Hill has changed from surface water to ground water with an associated movement of one pumping station. We have also seen the closure of a pumping station at Quarry Hill.

Line 6B.19 Number of potable water pumping stations that re-pump water already within the treated water distribution system

There has been an increase in the number of potable water pumping stations that re-pump water already within the treated water system. four pumping stations have been added (new assets).

Added
Aubrey Street BP2
Clatterbridge
Danebent
Pike Lowe

Line 6B.20 Number of potable water pumping stations that pump water imported from a 3rd party supply into the treated water distribution system

No pumping stations fall into this category; no change from previous reporting year.

Line 6B.21 Total number of service reservoirs

This year we have decommissioned three service reservoirs in the report year.

Removed
Clarkes Hill SR

Silloth SR
Summergrove SR

Line 6B.22 Number of water towers
There has been a decrease in the number of water towers due to one water tower at Prenton being decommissioned in 2023/24.

Line 6B.23 Energy consumption – treated water distribution
See commentary for Line 5A.24

Line 6B.24 Average pumping head – treated water distribution
In response to the Turner and Townsend and WRc 'Average Pumping Head: data quality improvement' report in March 2022, a review of the Average Pumping Head (APH) methodology was carried out for last reporting year. We reviewed our methodology in line with the rest of the industry and are continuing to improve our data quality.
During the reporting year, we have carried out further validation of the estimation methods employed. This has included reviewing and updating asset details and attributes (e.g. height, destination and meter reference information) to the corporate data system and the APH calculation model. We reviewed our methodology in line with the rest of the industry and are continuing to identify opportunities to improve our data quality in future periods.

For the Treated Water Distribution price control:

- 10 per cent of sites have measured data for lift **and** volume. These sites contribute 10 per cent of the APH for the price control.
- 75 per cent of sites have measured data for lift **or** volume. These sites contribute at least 65 per cent of the APH for the price control.
- Where measured data is not available, estimations are used where possible. Static ground level measurements and the standard hydraulic formula are used to estimate Head and network demand data is used to estimate Flow. Where these estimation methods are not available, typical values are used based on similar assets.

Variance between 2022/23 and 2023/24
Treated water distribution APH has reduced from 71.95 in 2022/23 to 61.65 in 2023/24. The decrease is due to variations in operations (e.g. what sources and water treatment works are used) from year to year and the addition and removal of pumping stations.
Variance between 2023/24 and FBP forecast
The 2023/24 APH is higher than the business plan forecast. This is due to changes to our methodology since we submitted our business plan forecasts. Also our water network is a dynamic system and operation of sources and pumps differs depending on a number of variables such as changes in demand, weather, how much we abstract from different sources and operational changes to assets to ensure we meet demand in the most efficient way.

Line 6B.25 Total number of treated water distribution imports
There has been no change to the total number of treated distribution imports.

Line 6B.26 Water imported from 3rd parties treated water distribution systems
This is has increased slightly in the current reporting year.

Line 6B.27 Total number of treated water distribution exports
This has increased in the reporting year with the increased number of NAVs.

Line 6B.28 Water exported to 3rd parties' treated water distribution systems
This has increased in the reporting year with the increased number of NAVs.

Line 6B.29 Peak 7 day rolling average distribution input
Line 6B.30 Peak 7 day rolling average distribution input/annual average distribution input
The period with the highest peak 7 day rolling average distribution input during 2023/24 occurred between 11/06/2023 and 17/06/2023. This was 111per cent of the annual average distribution input. The reason for the high demand was a period of hot, dry weather.

Water Balance
Line 6B.31 Measured household consumption (excluding supply pipe leakage)
Line 6B.32 Unmeasured household consumption (excluding supply pipe leakage)
In the report year we have seen an increase in measured household consumption and a decrease in unmeasured household consumption as we continue to deliver our AMP7 metering programme and better understand customer consumption.

Line 6B.33 Measured non-household consumption (excluding supply pipe leakage)
Line 6B.34 Unmeasured non-household consumption (excluding supply pipe leakage)
This is consistent with the previous year.

Line 6B.35 Total annual leakage
We have derived this figure from the same leakage data that is used in both leakage performance reporting (as an input to the three-year average calculation) and annual water resources management plan reporting. The table below shows total annual leakage reported for the 2022/23 and 2023/24 reporting years and the target performance from the Final Determination.

	2022/23 APR	2023/24 APR	2023/24 FBP
Total Annual Leakage (Ml/d)	423.0	408.6	412.8

Variance between 2022/23 and 2023/24
We have seen a reduction in leakage in the report year. During 2022/23 we had a particularly severe freeze/thaw incident that impacted our leakage performance. In the report year although we have experienced prolonged periods of dry weather followed by a couple of freeze/thaw incidents that impacted our leakage performance, the impact has not been as severe. We are working with our teams and suppliers to ensure we are appropriately targeting leak detection and implementing leak size prioritisation to ensure the highest priority leaks are addressed first and more leaks are fixed overall. Our leakage programme also focuses on other activities such as leak prevention through optimised pressure management and leak prediction using advanced analytics to maximise leakage performance improvements.

Variance between 2022/23 and FBP forecast
We continue to outperform our PR19 business plan forecast and are on track to deliver the forecast 15 per cent improvement over AMP7 and we are working towards our longer term WRMP target.

Line 6B.36 Distribution system operational use
Consistent with previous year.

Line 6B.37 Water taken unbilled
Consistent with previous year.

Line 6B.38 Distribution input
Line 6B.39 Distribution input (pre-MLE)

This is broadly consistent with last year. In the report year we have seen a movement in the water balance reconciliation gap from -0.1per cent to +1.6per cent which has resulted in a negative reconciliation adjustment applied to distribution input.

Components of total leakage (post MLE) – Company level
Line 6B.58 Leakage upstream of DMA
Consistent with previous year.

Line 6B.59 Distribution main losses
Line 6B.60 Customer supply pipe losses – measured households excluding void properties
Line 6B.61 Customer supply pipe losses – unmeasured households excluding void properties
Line 6B.62 Customer supply pipe losses – measured non-households excluding void properties
Line 6B.63 Customer supply pipe losses – unmeasured non-households excluding void properties
Line 6B.64 Customer supply pipe losses – void measured households
Line 6B.65 Customer supply pipe losses – void unmeasured households
Line 6B.66 Customer supply pipe losses – void measured non-households
Line 6B.67 Customer supply pipe losses – void unmeasured non-households
We have seen a decrease in distribution mains losses and across customer supply pipe losses in the report year. These decreases are due to a review of supply pipe losses which has impacted the split between distribution main losses and supply pipe losses, this has had no material impact to total leakage.

We carried out the review of supply pipe losses with methodological alignment to the previous industry best practice study carried out in 2018/19 and have updated per property supply pipe losses estimates, based on monitoring a sample of measured/metered and unmeasured/unmetered properties.

Table 6C Water Network+ - Mains, communication pipes and other data for the 12 months ended 31st March 2024

Treated water distribution – mains analysis

Line 6C.1 Total length of potable mains as at 31 March
There are small movements in the km of mains reported each year as new mains are installed and other mains are abandoned. This year has seen a slight increase in the length of main.

Line 6C.2 Total length of potable mains relined
We have not relined any of our water mains.

Line 6C.3 Total length of potable mains renewed
There has been a decrease in the length of potable mains renewed in the report year following the completion of the ‘cast iron mains replacement programme’ that had led to an increase in the previous report year.

Line 6C.4 Total length of new potable mains
The length of new potable mains has decreased from last year.

Line 6C.5 Total length of potable water mains (< ≤320mm), Line 6C.6 Total length of potable water mains >320mm and ≤ 450mm, Line 6C.7 Total length of potable water mains >450mm and ≤610mm and Line 6C.8 Total length of potable water mains > 610mm
There are small movements in length of different sizes of mains reported each year as new mains are installed and other mains are abandoned.

Treated water distribution - mains age profile
Line 6C.9 Total length of potable mains laid or structurally refurbished pre-1880
Line 6C.10 Total length of potable mains laid or structurally refurbished between 1881 and 1900

Line 6C.11 Total length of potable mains laid or structurally refurbished between 1901 and 1920
Line 6C.12 Total length of potable mains laid or structurally refurbished between 1921 and 1940
Line 6C.13 Total length of potable mains laid or structurally refurbished between 1941 and 1960
Line 6C.14 Total length of potable mains laid or structurally refurbished between 1961 and 1980
Line 6C.15 Total length of potable mains laid or structurally refurbished between 1981 and 2000
Line 6C.16 Total length of potable mains laid or structurally refurbished between 2001 and 2020 Line 6C.17 Total length of potable mains laid or structurally refurbished during and after 2021
The mains length in each category is relatively stable with only slight variation. There have been decreases in the number of mains laid before 2000. This is to be expected due to replacement activity.
Other year on year changes are due to ongoing improvements to our GIS data; for example, mains with previously unverified characteristics (i.e. laid date and diameters) have now become verified.

Communication pipes
Line 6C.18 Number of lead communication pipes
There has been a reduction in the number of lead communications pipes in-line with the number replaced and reported in 6C.21.

Line 6C.19 Number of galvanised iron communication pipes
There has been a small change in the number of galvanised iron communication pipes due to updated data.

Line 6C.20 Number of other communication pipes
The small increase compared to last year is in-line with anticipated connection growth and movement of lead pipes to the other materials.

Line 6C.21 Number of lead communication pipes replaced or relined for water quality
We have no comment to make on this line.

Other

Line 6C.22 Company area
The company reported company area is the same as last year.

Line 6C.23 Compliance Risk Index
The CRI score is forecast to be 5.92 we are waiting for confirmation of the final score from the DWI.

Line 6C.24 Event Risk Index
The estimated score for calendar year 2023 is 206, the ERI score reported is a provisional score and we are waiting for confirmation of the final score from the DWI.

Line 6C.25 Properties below reference level at end of year
This number of properties has reduced in the reporting year following the completion of a number of schemes based on a programme that identifies all viable solutions for the current year and beyond, to remove as many properties as practical below the reference level.

Table 6D Demand management - Metering and leakage activities for the 12 months ended 31 March 2024

Smart metering

This year has seen us fit Advanced Meter Infrastructure (AMI) meters as part of a localised smart metering trial of a few thousand meters to help us fully understand and validate the benefits of using AMI in our smart metering strategy and to establish the requirements for us to unlock its value. This trial also helped to shape our procurement strategy as well as making the required organisational changes for our people, systems and processes.

We have continued to install Automated Meter Reading (AMR) enabled meters and will do so to the end of the AMP. We are in the tendering process for an AMI smart metering solution to be in place in time for a mass roll-out of AMI meters from the beginning of AMP8. In addition to getting weekly reads from many customers, the roll out of AMI will enable us to remotely receive reads at least daily at a higher granularity of either 15mins or hourly depending on the type of customer.

Metering activities - Totex expenditure

Metering activities – Explanatory variables

Line 6D.1 New optant meter installation for existing customers
Expenditure has increased from 2022/23 in line with a marginal increase in take up of meters to c25,000, as well as a rise in contractor costs in line with inflation.

Line 6D.2 New selective meter installation for existing customers
Increase in expenditure due to higher contractor costs in FY24, from inflationary pressures and other price increases. FY23 costs are also lower than expected due to c7,000 excavations and boundary boxes being installed in FY22 for installations made in FY23, with a delay due to implementing changes to billing systems.

Line 6D.3 New business meter installation for existing customers
Business meter fits have reduced due to a reduction in application volumes.

Line 6D.4 Residential meters renewed and Line 6D.5 Business meters renewed
Basic and AMR residential metering expenditure has increased marginally due to increased meter exchanges from investigating meters registering zero consumption. As discussed in last year's APR, we have also begun our smart metering trial for AMP7, where we have installed a total of 734 meters at a cost of approximately £0.5m. Business metering expenditure is broadly consistent with the previous year.

Line 6D.6 New optant meters installed
We installed almost 25,000 meters which is broadly similar to the number installed in 2022/23 but C.10,500 lower than FBP.

	2021/22 APR	2022/23 APR	2023/24 APR	2023/24 FBP
New optant meters	21,301	24,866	24,926	35,493

Our Lowest Bill Guarantee (LBG) introduced in 2020 will mean that customers who have a free meter fitted will pay on their cheapest tariff for each billing period within the two year reversion timescale. If the customers measured charges are higher than their rateable value charges, we will bill them on their rateable value charges. The offer has been designed to reduce the potential 'loss aversion' that customers tell us is preventing them from moving to a meter, whilst still offering a potential financial saving to reduce water use, along with the use information that a meter provides.

Line 6D.7 New selective meters installed
We have fitted C.19,000 selective meters. This brings the total number of meters (selective and optant) fitted in the year to nearly 44,000. We continue to promote free meter options and our Lowest Bill Guarantee (LBG) scheme by targeting customers who we believe will make a saving based on their current charges and send letters, texts and emails and we will included flyers inside second half yearly unmeasured bills.
The total number of meters installed over the first four years of the AMP is C.16,000 below the AMP target. In year five we plan to fit C.24,000 meters which along with a similar amount of FMO's, will enable us to achieve our AMP7 target of 180,000 meters. Additionally, we will also be installing 40k new meter boxes in Carlisle and Manchester and will use these boxes to start our smart meter rollout from April 2025.

Line 6D.8 New business meters installed
A small number of business meters have been installed.

Line 6D.9 Residential meters renewed
We have renewed just over 10,000 residential meters which is C.900 fewer than the prior year and C.700 more than planned.

Line 6D.10 Business meters renewed
The number of non-household meter exchanges is broadly the same as 2022/23 due our continued work investigating meters which have been registering zero consumption and exchanging these meters where required.

Line 6D.11 Replacement of basic meters with smart meters for residential customers
We have replaced 6,645 basic meters with AMR meters and 510 with AMI meters.

Line 6D.12 Replacement of AMR meter with AMI meters for residential customers
We have replaced 224 AMR meters with AMI meters.

Line 6D.13 Replacement of basic meters with smart meters for business customers
There have been a small number of basic meters replaced with AMR meters.

Line 6D.14 Replacement of AMR meter with AMI meters for business customers
We have not made any AMI replacements for business customers.

Line 6D.15 New residential meters installation – supply-demand balance benefit
We have reported 1.33 Ml/d based on the number of new smart meters installed.

Line 6D.16 New business meters installation – supply-demand balance benefit, Line 6D.13 Residential meters renewed - supply-demand balance benefit and Line 6D.14 Business meters renewed - supply-demand balance benefit
We have reported zero in these lines and have no further comments.

Line 6D.21Residential properties - meter penetration
Meter penetration is slightly increased from last year at 49.6 per cent

Leakage activities

Line 6D.22 Total leakage activity – totex expenditure
Our networks are dynamic systems and multiple leakage activities are often carried out in district metered areas therefore leakage totex and the associated leakage savings are based on a number of assumptions. These assumptions may differ from company to company meaning data is not comparable. The comparison of costs and benefits is further complicated by the delay between incurring the expenditure and delivering the benefit. For example acoustic logger enhancement costs incurred in a specific year will not deliver benefits instantaneously, however they will deliver benefits in future years for the whole of their useful economic life. Likewise, investment in historic years will have delivered leakage benefits in the current year.

Total leakage expenditure has reduced in 2023/24 from the prior year due to a number of factors; 2022/23 was a challenging year due to extreme weather incidents which required extensive recovery efforts to return leakage to pre-incident levels which increased maintain expenditure in the year alongside profiling of planned mains replacement programmes.

Previously, we have included spend on acoustic logger enhancement activity in Table 4L as it represented a step change in performance capability. Due to profiling over the AMP, the value for this activity in 2023/24 was nil

however we continue to allocate expenditure to the reduce leakage category to reflect the achievement of reduced leakage through other base expenditure. Expenditure reported includes cast iron mains replacement/rehabilitation expenditure and elements of our reactive repair and maintenance programme in line with our methodology in prior years.

To identify leakage totex costs we have combined a bottom up and top down approach. IRE and Capex spend has been analysed on a project by project basis to identify those contributing to leakage performance. Costs incurred in relation to specific projects associated with leakage loggers, active leak control, pressure management and mains replacement/rehabilitation have been included. Where the project delivers multiple drivers we have allocated costs to leakage/non leakage dependent on the type of activity with Opex costs following the same activity methodology used for IRE and Capex

The following direct costs associated with leakage detection and repair activities have been reported in totex including:

- customer enquiries;
- work scheduling;
- internal resource and associated spend for investigation;
- external partner costs for the repairs;
- health and safety;
- street works (including permit costs;)
- commercial support costs

With an allowance for indirect corporate overheads.

A bottom up review of all leakage costs is then undertaken to allocate totex to one of the following categories:

- 100 per cent maintaining leakage
- 100 per cent reducing leakage
- Costs associated with both maintaining and reducing leakage allocated based on management estimate
- Repair and maintenance contract partner spend driver allocated based on natural rate of rise.

It is not feasible to identify if repair and maintenance contract partner costs contribute to maintaining or reducing leakage from a bottom up approach due to the high volume of relatively low value work (C.30,000+ leak repairs carried out per annum). We have therefore used the natural rate of rise to allocate spend which has allocated C.6 per cent of expenditure to reduce leakage in 2023/24.

As with all cost allocations, we continue to review and refine our methodology for the allocation of leakage totex to improve the accuracy of expenditure reported. As both the RAG guidance for Table 6D and any additional Prevent, Aware, Locate, Mend (PALM) analysis develops over time we expect cost allocation methodologies to change and improve across all companies.

Line 6D.23 Leakage improvements delivering benefits in 2020-25
The incremental leakage enhancement delivered during the reporting year to the supply-demand balance has been calculated by subtracting last year's total annual leakage from this years reported total annual leakage. 423.01 – 408.64 = 14.37 Ml/d.

Per capita consumption (excluding supply pipe leakage)

Line 6D.24 Per capita consumption (measured customers)
Line 6D.25 Per capita consumption (unmeasured customers)

For commentary on our PCC performance please see section 1.1 of the main APR pages 46 to 48.

Table 6F WRMP annual reporting on delivery - non-leakage activities

The expenditure and cost allocations relating to these projects are consistent with table 4L for each of the different classifications (appropriate lines are 4L.22, 4L.25 and 4L.31). Forecasted years expenditure represents our current best view of the projects but may vary as the projects deliver.

Table 7A Wastewater Network+ - Functional expenditure for the 12 months ended 31 March 2024

Costs of STWs in size bands 1 to 5

7A.1 Direct costs of STWs in size band 1, Line 7A.2 Direct costs of STWs in size band 2, Line 7A.3 Direct costs of STWs in size band 3, Line 7A.4 Direct costs of STWs in size band 4 and Line 7A.5 Direct costs of STWs in size band 5

This year we have seen increases in power price costs, chemical price costs and employment costs.

For all of the works in size bands one to five we have continued to allocate the expenditure based on the numbers of full time equivalent operational staff for each treatment works.
These lines are directly influenced by the movement in size bands of our treatment works, most notably between bands 5 and 6. However, this year the number of size band six works has decreased to 62 as Clitheroe has dropped out due to a reduction in trade effluent.

Details of these movements are described in the commentary for lines 7D.9 to 7D.14 below.

Line 7A.6 General and support costs of STWs in size bands 1 to 5

This year we have experienced a reduction in the principal use recharge primarily due shared use assets coming out of life since the prior year and reduced depreciation on shared use IT systems following a review of asset lives.

Line 7A.7 Functional expenditure of STWs in size bands 1 to 5

This is a calculated line.

Costs of STWs in size band 6

As described in line 7D.14, the number of size band six work has decreased to 62 as Clitheroe has dropped out due to a reduction in trade effluent.

Line 7A.8 Service charges for STWs in size band 6

The majority of the costs in this line are associated with our Environment Agency Permits. We continue to review our consent charges with the Environment Agency to ensure that we pay the correct amount for our discharges.

Line 7A.9 Estimated terminal pumping costs size band 6 works

These are estimated costs, based on power and a proportional allocation of maintenance costs. We routinely review our terminal pumping station assets and these estimated costs are largely in line with those reported in the previous period but taking into account the increases in electricity prices.

Line 7A.10 Other direct costs of STWs in size band 6

This line includes power, employment costs, hired and contracted services, materials and consumables and other direct costs. Income from generation is treated as negative expenditure. Sludge liquors recharges have been

reflected in direct costs (which was previously only shadow reported) and the RAG 2.09 allocation of other business activities (regulation costs). This is in line with RAG 4.12 guidance which states that functional expenditure should take into account improved cost allocations between the sewage treatment and bioresources units in relation to sludge liquors, energy generation and overheads.

We have seen real increases in power price costs, chemical price costs and employment. These have been offset party by the inclusion of the sludge liquors recharge.

Line 7A.11 Direct costs of STWs in size band 6
This is a calculated line.

Line 7A.12 General and support costs of STWs in size band 6
This year we have experienced a reduction in the principal use recharge primarily due shared use assets coming out of life since the prior year and reduced depreciation on shared use IT systems following a review of asset lives.

Line 7A.13 Functional expenditure of STWs in size band 6
This is a calculated line.

Costs of STWs – all sizes

Line 7A.14 Total operating functional expenditure (excluding 3rd party services)
This is a calculated line (sewage treatment)

Table 7B Wastewater Network+ - Large sewage treatment works for the 12 months ended 31 March 2024

Sewage treatment works - Explanatory variables

Line 7B.1 Works name
This is standard information linking the works to the Environment Agency consent. The number of large sewage works has reduced by one this year, with 62 being reported.

WwTW name	Annual change	Reason for change
Clitheroe WWTW	Removed	Site has come out of the large works table due to a reduction in Trade Effluent volume

Line 7B.2 Classification of treatment works
The treatment works classifications remain consistent with those reported in the previous period.

Line 7B.3 Population equivalent of total load received
The table below highlights the significant changes in population equivalent of total load received.

WwTW name	Annual change	Reason for change
Colne WWTW	Increase	24 per cent increase in load contribution from Trade Effluent (TE)
Ellesmere Port WWTW	Increase	170 per cent increase in load contribution from TE. Increase in volume/COD/Solids, this is attributable to one discharge site
Salford WWTW	Increase	7 per cent increase in total connected population

Stockport WWTW	Increase	49 per cent increase in load contribution from TE
Blackburn WWTW	Reduction	30 per cent reduction in load contribution from TE
Burnley WWTW	Reduction	52 per cent reduction in load contribution from TE
Crewe WWTW	Reduction	48 per cent reduction in load contribution from TE
Dukinfield WWTW	Reduction	95 per cent reduction in load contribution from TE
Morecambe WWTW	Reduction	47 per cent reduction in load contribution from TE
Walton-le-dale WWTW	Reduction	57 per cent reduction in load contribution from TE
Wigan (Hoscar) WWTW	Reduction	21 per cent reduction in load contribution from TE
Clitheroe WWTW	Reduction	Site no longer in the large works table

Line 7B.4 Suspended solids consent, Line 7B.5 BOD_5 consent, Line 7B.6 Ammonia consent, and Line 7B.7 Phosphorus consent

There are no notable changes to the permit levels in this financial year, with the exception of the four limit variations shown in the table below.

As described in the commentary to 7B.1, Clitheroe WwTW has been removed from the table, so the permit limits associated with that site have been removed accordingly.

WwTW name	Annual change	Previous	New	Reason for change
Blackburn WWTW	Permit change	20	7	PERMIT VARIATION – BOD5 limit tightened
Blackburn WWTW	Permit change	3	1	PERMIT VARIATION - Ammonia limited tightened
Eccles WwTW	Permit change	0	1.1	PERMIT VARIATION – New Phosphorous limit introduced 29/09/23
Oldham WwTW	Permit change	0	0.7	PERMIT VARIATION – New Phosphorous limit introduced 20/09/23

Line 7B.8 UV Consent

There have been no notable changes to the stated UV consents this year.

Line 7B.9 Load received by STW

This is a calculated line.

Line 7B.10 Flow passed to full treatment

During the last financial year the average flow at all measured works increased by an average of approximately 15 per cent across the data set.

Sewage treatment works – Functional expenditure

Line 7B.11 Service charges

The majority of the costs in this line are associated with our Environment Agency Permits. We continue to review our consent charges with the Environment Agency to ensure that we pay the correct charges for our discharges.

Line 7B.12 Estimated terminal pumping expenditure
These are estimated costs, based on power and a proportional allocation of maintenance costs. We routinely review our terminal pumping station assets and these estimated costs are largely in line with those reported in the previous period but taking into account the increases in electricity prices.

Line 7B.13 Other direct expenditure
This line includes power, employment costs, hired and contracted services, materials and consumables and other direct costs. Income from generation is treated as negative expenditure. Sludge liquors recharges have been reflected in direct costs (which was previously only shadow reported) and the revised RAG 2.09 allocation of other business activities (regulation costs), in accordance with RAG 4.12 definition of functional expenditure.

7A.10 above, we have seen increases in power price costs, chemical price costs and employment costs. These have been offset party by the inclusion of the sludge liquors recharge.

Line 7B.14 Total direct expenditure
This is a calculated line.

Line 7B.15 General and support expenditure
This year we have experienced a reduction in the principal use recharge primarily due to shared use assets coming out of life since the prior year and reduced depreciation on shared use IT systems following a review of asset lives.

Line 7B.16 Functional expenditure
This is a calculated line.

Table 7C Wastewater Network+ - Sewer and volume data for the 12 months ended 31 March 2024

Line 7C.1 Connectable properties served by s101A schemes completed in the report year and Line 7C.2 Number of s101A schemes completed in the report year
The number of first time sewerage schemes can vary depending on the number of applications that are received from customers. One scheme has been completed this financial year, this scheme connected three properties to the UUW network.

Line 7C.3 Total pumping station capacity and Line 7C.4 Number of network pumping stations
Total pump capacity has reduced by 137 kW compared to the previous year. The reduction is because of our continued data improvement programme and the ongoing replacement of pumps.
In the report year an additional four sites have been added. This is made up of four new sites, no sites have been removed.

Line 7C.5 Total number of sewer blockages
Our blockages performance of 17,986 incidents is continuation of our year-on-year improvement. This is our best ever performance, and when normalised, we are industry leading to date in this measure over AMP7.
Whilst blockages from our existing assets have reduced over the long term, the proportion of blockages from transferred assets has continued to remain stable. Historically United Utilities' legacy assets benefitted from a programme of maintenance that has kept them in better condition, whilst transferred assets were in varying degrees of asset condition when transferred to us from private ownership in 2011. Transferred assets are, typically, smaller in diameter than existing assets, meaning that they tend to be more prone to blockages, particularly during times of stress due to increased load or demand. They are, typically, subject to a higher percentage of blockage incidents due to customer misuse.

We continue to develop and implement a wide variety of schemes and initiatives to improve our performance. These include the implementation of a regional blockage plan focussing on increased customer engagement. We have continued to use the impactful 'Stop the Block!' identifier to badge our communications campaign activities in raising awareness of 'what not to flush/pour'. We are continuing to work with food service establishments to reduce fats, oils and grease discharges at source.
Whilst it is difficult to quantify an exact relationship between the success of our awareness campaigns and blockage reduction, we are confident that they are effective, and we have experienced a reduction in customer misuse related blockages between 2022/23 and 2023/24 in the region of 1,800 incidents.
We are also seeing benefits of investment in our Dynamic Network Management (DNM) model, with our in-sewer monitors telling us when blockages are forming, allowing our dedicated blockage teams to proactively attend site to resolve the issue before a customer experiences a service interruption and needs to contact us. During 2023/24, DNM allowed our teams to proactively identify 2,081 potential blockages.

Line 7C.6 Total number of gravity sewer collapses
There have been 971 gravity sewer collapse incidents in this reporting period. This is compared to 1,040 in 2022/23.
Over recent years we have also enhanced the use of CCTV surveys and fully utilised our programme to identify structural defects and sewer deformations. We have also trialled and are rolling out innovative artificial intelligence sewer CCTV technology (VAPAR). This technology allows us to quickly and consistently review CCTV data to support and prioritise our investment decisions.

Line 7C.7 Total number of sewer rising main bursts
There have been 59 rising main burst incidents in this reporting period. This is compared to 77 in 2022/23 and 60 in 2021/22, which is in line with the previous numbers of incidents from the AMP6 methodology.
Whilst there is a 24 per cent reduction in the number of rising main bursts this year, this should be taken in the context that these defects represent less than 6 per cent of the overall reportable sewer collapse number and can only be attributed to year on year natural variation.

Line 7C.8 Number of combined sewer overflows
Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and from the discovery that some assets do not exist (the permits for these assets are then surrendered). We are continuously reviewing our assets against our data records.

The total number of combined sewer overflows (CSOs) in this reporting period has decreased from 2,089 to 2,075. This is an overall net decrease of 14 due to the reduction of unpermitted storm overflows – 7 have now been permitted and 7 have been confirmed not to exist.

Line 7C.9 Number of emergency overflows
Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously owned private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and from the discovery that some assets no longer exist (the permits for these assets are then surrendered).

The total number of emergency overflows (EOs) in this reporting period has remained at 645.

Line 7C.10 Number of settled storm overflows
Our profile of overflows changes over time. Increases in the number of overflows can be as a result of the adoption of previously private assets or the discovery and permitting of previously unknown/unpermitted assets. Decreases occur when assets are closed and also from the discovery that some assets do not exist (the permits for these assets are then surrendered).
The number of settled storm overflows (SSOs) reported in this financial year has remained at 191.

Line 7C.11 Sewer age profile (constructed post 2001)
The length of sewer laid or structurally refurbished post 2001 has increased this year by 121 km.

Line 7C.12 Volume of trade effluent
There has been an overall increase of 5.04 per cent in the trade effluent flow discharged to the sewerage system recorded this year.

This variance can be attributed to a recovery of trade in the North West after the impact of COVID-19 on the regions industry, the change in the way trade effluent volumes have been captured since the Retail market opened in 2017, and the steps that have been taken since then to improve the accuracy of the data in the market.

Line 7C.13 Volume of wastewater receiving treatment at sewage treatment works
The total volume reported is the sum of foul, surface water and highway drainage, so is the sum of all flows received at the treatment works, not just domestic flows.
This number has increased by 16.4 per cent this year as we have seen increases in each of the component elements, with the surface water and highway drainage materially affected by the wet weather.

Line 7C.14 Length of gravity sewers rehabilitated
The length of gravity sewer rehabilitated can vary across a five year period. This is to be expected as our work prioritisation can flex to accommodate emerging customer priorities. However, the lengths of gravity of sewer rehabilitated for this reporting year is consistent with the previous year.

Line 7C.15 Length of rising mains replaced or structurally refurbished
We have only seen a small 0.22km length of rising main refurbished this year. Like last year, this is primarily due to no observed major capital projects (MCP) including this asset type, and a reduction in numbers of reactive bursts captured. However, when reported to 0 decimal places, this length will be displayed as zero.

When a reactive rising main burst occurs, our operations teams input all the reactive incident data into our corporate system. An output report is produced, containing information on the type of repairs made, length and depth of rising main, pipe material and photographs, which is all taken from the corporate system and validated by the local operational teams and thereafter our strategic teams. In this instance we therefore interpret 'structurally refurbished' as any pipeline rehabilitation technique which results in a repair to a burst rising main, that by its action improves the structural integrity of the pipe.

Line 7C.16 Length of foul (only) public sewers, Line 7C.17 Length of surface water (only) public sewers, Line 7C.18 Length of combined public sewers, Line 7C.19 Length of rising mains, Line 7C.20 Length of other wastewater network pipework, Line 7C.21 Total length of "legacy" public sewers as at 31 March and Line 7C.22 Length of formerly private sewers and lateral drains (s105A sewers)
We have continued with our sewer length data improvement checks this financial year. These checks have focused on improving the quality of our sewer records, and saw a small growth in the mapped network as a result of replacing records that were previously inferred. This has led to a small increase in our existing asset length, whilst transferred assets have remained the same.

Line 7C.23 Number of combined sewer overflows (as at 1 January)
This is a new reporting line for this year. The total number of combined sewer overflows (CSOs) as at 1 January 2023 is 2,089. This total includes combined sewer overflows located on both our network and treatment sites. The total also includes both permitted and unpermitted assets. This figure is consistent with line 7C.8 from the 2022/23 APR.

Line 7C.24 Number of settled storm overflows (as at 1 January)
This is a new reporting line for this year. The total number of settled storm overflows (SSOs) as at 1 January 2023 is 191. This total includes combined sewer overflows located on both our network and treatment sites. The total

also includes both permitted and unpermitted assets. This figure is consistent with line 7C.10 from the 2022/23 APR.

Line 7C.25 Number of storm overflows - other (as at 1 January)
This is a new reporting line for this year. The total number of storm overflows (other) as at 1 January 2023 is zero.

Line 7C.26 Number of storm overflows - pending investigation (as at 1 January)
This is a new reporting line for this year. The total number of storm overflows - pending investigation (as at 1 January) is 85. This reporting line relates to unpermitted assets that were being investigated as per 1 January 2023.

Line 7C.27 Number of permitted storm overflows closed in the previous reporting year (as at 1 January)
This is a new reporting line for this year. The total number of permitted storm overflows closed in the previous reporting year is one. This relates to MAN0054 which was surrendered 01 May 2023.

Line 7C.28 Number of storm overflows - consistent with PR24 performance commitment definition
This is a calculated line.

Line 7C.29 Number of storm overflows closed in the previous reporting year - (as at 1 January)
This is a new reporting line for this year. The reported figure is seven storm overflows which have been confirmed closed, bifurcations, or where it is discovered the asset does not exist.

Line 7C.30 Number of storm overflows with event duration monitors installed (as at 1 January)
This is a new reporting line for this year. The number of storm overflows with event duration monitors installed (as at 1 January) is 2,000.

Line 7C.31 Proportion of the time that event duration monitors on storm overflows were operational (from 1 January to 31 December)
This is a new reporting line for this year. The proportion of time that EDMs on storm overflows were operational was 97.04 per cent.

Line 7C.32 Number of spills from storm overflows (from 1 January to 31 December)
This is a new reporting line for this year. The number of spills from storm overflows (from 1 January to 31 December) was 97,537. This number is taken from the EA reporting period (Jan to Dec 2023).

Line 7C.33 Number of emergency overflows - sewage pumping stations (as at 1 January)
This is a new reporting line for this year. The number of emergency overflows - sewage pumping stations as at 1 January 2023 was 645. This total includes emergency overflows located at pumping stations on both our network and treatment sites. The total also includes both permitted and unpermitted assets. Any EOs that are due to be converted to SOs are recorded within this line. As per the definition we have not included any EOs where there is a corresponding SO. There are 355 sites that have these combined discharge permits (both EO and SO).

Line 7C.34 Number of emergency overflows - network (as at 1 January)
This is a new reporting line for this year. The number of emergency overflows - network as at 1 January 2023 was one. This asset is not located on a pumping station, so is not included in line 7C.33 above. The asset (ROC0158) is an emergency overflow in case of a blockage on a siphon.

Line 7C.35 Number of emergency overflows - other (as at 1 January)
This is a new reporting line for this year. The number of emergency overflows - other as at 1 January 2023 was zero.

Line 7C.36 Number of emergency overflows - all (as at 1 January)
This is a calculated line.

Line 7C.37 Number of emergency overflows with event duration monitors installed (as at 1 January)
This is a new reporting line for this year. The number of emergency overflows with event duration monitors installed was 17. These 17 have emergency overflow EDM permit requirements. As per the definition we have not included any EOs where there is a corresponding SO. There are 355 sites that have these combined discharge permits (both EO and SO) and therefore have an EDM already installed on the SO.

Line 7C.38 Number of emergency overflows with an MCERTS certified event duration monitors installed (as at 1 January)
This is a new reporting line for this year. There were zero emergency overflows with MCERTS certified event duration monitors in 2022.

Line 7C.39 Proportion of the time that event duration monitors on emergency overflows were operational (from 1 January to 31 December)
This is a new reporting line for this year. The proportion of time that EDMs were operational was 99.41 per cent. Unlike lines 7C.33 to 7C.38 above, this figure refers to the 1 January 2024 position, which utilises 2023 calendar year data (1 January 2023 to 31 December 2023). The number therefore refers to the average operability for the 17 sites listed in 7C.37 as per the 2023 Environment Agency return.

Line 7C.40 Number of spills from emergency overflows (from 1 January to 31 December)
This is a new reporting line for this year. The number of spills from emergency overflows was 428. Unlike lines 7C.33 to 7C.38 above, this figure refers to the 1 January 2024 position, which utilises 2023 calendar year data (1 January 2023 to 31 December 2023). Therefore, this number corresponds to the number of spills for the 17 sites listed in 7C.37 as per the 2023 Environment Agency return.

There are 355 sites that have a combined discharge permit (both EO and SO discharges), which can often discharge through a single discharge outlet/point. Discharges made through this type of outlet are recorded as SO discharges. As per the definition these have not been included as EO spills.

As part of our business as usual process we are investigating and validating spill data. As an example, we are currently investigating spills at Sands Pumping Station due to the unconventional arrangement of the EDM monitoring equipment at this location. This site accounted for 27 of the spills contained in Line 7C 40.

Table 7D Wastewater Network+ - Sewage treatment works data for the 12 months ended 31 March 2024

Load received at sewage treatment works

Line 7D.1 Load received by STWs in size band 1, Line 7D.2 Load received by STWs in size band 2, Line 7D.3 Load received by STWs in size band 3, Line 7D.4 Load received by STWs in size band 4, Line 7D.5 Load received by STWs in size band 5 and Line 7D.6 Load received by STWs above size band 5

The total number of wastewater treatment works has decreased from 584 to 583 this year. Details of the sites that have been added or removed and the movements between size bands categories is described in the commentary for line 7D.9 below.

Changes in the size band of treatment works have affected the distribution of loads across treatment works and also the distribution of the numbers of treatment works.

Load distribution has also been influenced by tightening of existing consent limits and introduction of new limits at WwTW. Due to various quality improvement drivers there is a developing general trend of tighter phosphorus limits at treatment works.

Line 7D.7 Total load received
This is a calculated line

Line 7D.8 Load received from trade effluent customers at treatment works
The overall load received from trade effluent customers at treatment works has decreased this year by 16.8 per cent.

Number of sewage treatment works

The number of sewage treatment works can be used as a basic indicator of the size of a water company. However, for it to be used as an effective comparator, it must be used in conjunction with consent, load and WwTW classification information.

Line 7D.9 STWs in size band 1, Line 7D.10 STWs in size band 2, Line 7D.11 STWs in size band 3, Line 7D.12 STWs in size band 4, Line 7D.13 STWs in size band 5 and Line 7D.14 STWs above size band 5
The total number of works has decreased by one from the previous reporting period, down from 584 to 583. A summary of the movements between the numbers of works in each size band is shown below.

	Size bands		
Works Name	2022/23	2023/24	Change
Aglionby	1	2	Increase in banding
Castle Carrock	1	2	Increase in banding
Gisburn	2	3	Increase in banding
Warick Bridge	3	4	Increase in banding
Arlecdon	3	2	Decrease in banding
Braystones	5	4	Decrease in banding
Wigton Trade Effluent Sewer	5	4	Decrease in banding
Clitheroe	6	5	Decrease in banding
Crank Road	1	-	Site closed

Size band	In	Out	Net	Number of works (2022/23)	Number of works (2022/24)	Net
1	0	3	**-3**	318	315	**-3**
2	3	1	**2**	63	65	**2**
3	1	2	**-1**	60	59	**-1**
4	3	0	**3**	47	50	**3**
5	1	2	**-1**	33	32	**-1**
6	0	1	**-1**	63	62	**-1**
			-1	**584**	**583**	**-1**

The Phosphorus, BOD and Ammonia permit condition bandings associated with these 583 works are also displayed in lines 7D.9 to 7D.14

Line 7D.15 Total number of works
This is a calculated line.

Population equivalent

Line 7D.16 Current population equivalent served by STWs
The population equivalent (PE) served by WwTWs has decreased by 207,813, which is a decrease of 2.29 per cent over the previous reporting period.
The contribution from resident population to the current population equivalent served has increased, however there has been an overall reduction in the current population equivalent. This is primarily due to a reduction in the contribution from Trade effluent (TE) entering the sewerage network.
The load from trade effluent discharges is variable annually and depends on numerous factors including but not limited to:

- Confidence in the economy
- Demand for services and products
- Introduction of treatment and pre treatment stages at trader premises
- Action plans to achieve compliance with UUW issued trade effluent consents
- Closures and relocations

The concentration of TE discharged into the sewer network and hence received at STWs has reduced during this reporting period, with the overall volume discharged increasing.
Reductions in trade effluent load have been recorded at 56 per cent of the STWs which receive TE. Whilst the reduction this period deviates from the last two years of increasing load, historic data does show periods of short lived reduction which subsequently rebound.

Line 7D.17 Current population equivalent served by filter bed or activated sludge STWs with tightened/new P consents
The relevant schemes claimed in the WINEP this year are detailed below, along with the associated tightened P limit. The total population equivalent served by these schemes is 536,128.

The projects were delivered by capex solution. In any instance where this is not the case, the population equivalent benefitting from the primarily opex solutions would be shown.

WINEP Reference	Works Name	Delivery	Driver	Tightened P Limit	Population equivalent (000s)
7UU200736	Alsager WwTW	22/12/2023	WFD_IMPm	0.25	15.01
7UU200772	Audlem WwTW	31/12/2023	WFD_IMPg	1.5	1.979
7UU200774	Betley WwTW	22/10/2023	WFD_IMPg	1	0.973
7UU100064	Buerton South WwTW	31/12/2023	WFD_IMPg	1.5	0.248
7UU200731	Bury WwTW	31/05/2023	WFD_ND	Stretch Limit - 0.4mg/l	196.37
7UU300126a	Eccles WwTW	30/09/2023	WFD_ND	1.1 mg/l	111.222

7UU100070c	Kingsley WwTW	30/06/2023	WFD_IMPg	0.3	4.478
7UU300127	Oldham WwTW	30/09/2023	WFD_ND	0.7mg/l	202.878
7UU100013c	Wilpshire WwTW	31/12/2023	WFD_IMPg	0.5	2.97
					536.128

Line 7D.18 Current population equivalent served by STWs with tightened/new N consents
We have no new/tightened N consents in this reporting period, so the population equivalent is reported as zero.

Line 7D.19 Current population equivalent served by STWs with tightened/new sanitary parameter consents

The relevant schemes claimed in the WINEP this year are detailed below, along with the associated tightened sanitary parameter. The total population equivalent served by this scheme is 7,448.

Typically projects are delivered by capex solution. In any instance where this is not the case, the population equivalent benefitting from the primarily opex solutions would be shown.

WINEP Reference	Works Name	Delivery	Driver	Tightened sanitary parameter	Population equivalent (000s)
7UU100070a	Kingsley WwTW	30/06/2023	WFD_IMPg	Ammonia	4.478
7UU100013a/ 7UU100013b	Wilpshire WwTW	31/12/2023	WFD_IMPg	Ammonia, BOD	2.97
					7.448

Line 7D.20 Current population equivalent served by STWs with tightened/new UV consents
We have no new/tightened UV consents in this reporting period, so the population equivalent is reported as zero.

Line 7D.21 Population equivalent treatment capacity enhancement
This year we have delivered two projects; one at Audlem WwTW and one at Preston WwTW. The total additional population accommodated through these schemes is 48,156.

Line 7D.22 Current population equivalent served by STW with tightened / new consents for chemicals
All projects which meet the requirements for this line were completed in 2022. There is nothing further to report for the remainder of AMP7.

Table 7E Wastewater network+ - Energy consumption and other data for the 12 months ended 31 March 2024

Other

Line 7E.1 Total sewerage catchment area
We have seen a one per cent reduction in sewerage catchment area due to continuing data improvements and updates to our corporate GIS system.

Line 7E.2 Designated coastal bathing waters
We currently have 29 designated bathing waters in our region. 25 of these are coastal bathing waters and four are inland bathing waters. As per the reporting guidance, we are now only reporting the 25 coastal bathing waters on this line.

There is the potential for additional designation of bathing waters, particularly where open water swimming becomes more popular in inland waterways and lakes. We will treat newly designated bathing waters in the same manner as existing ones; promoting improvements where appropriate and supported by customers, to ensure our assets are not preventing bathing waters achieving excellent status by 2040.

Line 7E.3 Number of intermittent discharge sites with event duration monitoring
This year, 31 event duration monitoring (EDM) installations have been completed. The number of installations varies year on year, but as we near the end of the AMP and conclude our programme, the number will naturally be smaller than reported in previous years.

Line 7E.4 Number of monitors for flow monitoring at STW's
In 2023/24, 29 monitors were delivered within the reporting period. This is an increase from the number delivered in the previous year.

The number of schemes delivered each year aligns to the regulatory dates agreed with the Environment Agency and published in the WINEP. As a consequence we expect to see fluctuations within the annually reported figures.

Line 7E.5 Number of odour related complaints
The number of odour related complaints has decreased again this year, down to 853 from 1,304 in the previous period, which is our lowest ever total.

We continue to employ our odour plans at the relevant operational sites and the reduction in overall numbers is in line with our predicted trend. Additionally, a lower number of blockages and increased rainfall/wet weather have also aided the reduction of complaints.

Energy consumption

Line 7E.6 Energy consumption – sewage collection, Line 7E.7 Energy consumption – sewage treatment and Line 7E.8 Energy consumption – Wastewater Network +
From 2020/21 the wastewater business consumption was split between collection and treatment and this has remained the same for 2023/24 reporting.
Overall Wastewater (which includes wastewater collection and treatment) has seen a 20 per cent increase from in 2022/23 to 2023/24. Overall energy consumption in 2022/23 was 475,380 MWh and in 2023/24 it was 521,145 MWh.
The increase in energy consumption is due to:

- Higher rainfall. In year four of AMP7 (FY24) we experienced the wettest 12-month period since 1871 for Greater Manchester, Merseyside and Cheshire, and the second wettest overall for the North-West as a region. This prolonged wet weather, alongside 10 storms being named by the Met office, has led to an extremely challenging year for our Wastewater network and process assets. This resulted in a 7 per cent increase in electricity consumption compared with 2022/23.
- Overall stationary fuel increased by 18,544 MWh, which equates to a 91 per cent increase from 2022/23. This is a result of:
    - Improvement in business area allocation for stationary fuel use, by using cost centres paying for the fuel, resulting in a notable shift from Water Business allocation over to Wastewater Business Allocation.
    - Inclusion of stationary fuel for UU hired equipment (pumps and generators), which was not included before 2023/24, as the data was not available. The inclusion accounts for 15,827 MWh additional fuel, which is 85 per cent of the total 18,544 MWh increase from 2022/23.

- In 2022/23, stationary fuel use increased due to increased site power demand at Ellesmere Port WwTW, which could only be met by utilising diesel generators rather than grid import, as grid import is constrained whilst awaiting a local network upgrade by the Distribution Network Operator. This has continued in 2023/24 and will continue in future years until the grid constraint is resolved, and Ellesmere Port WwTW has used an additional 1,143 MWh compared with 2022/23.
- The remaining 1,575 MWh that makes up the 91 per cent increase from 2022/23 is a result of additional consumption in 2023/24 spread across numerous sites rather than attributed to one main site.

Scheme delivery

Line 7E.9 Cumulative shortfall in FFT addressed by WINEP / NEP schemes to increase STW capacity and Line 7E.10 Number of sites with an increase in sewage treatment works capacity delivered to address a shortfall in FFT

We have delivered no WINEP schemes to address FFT shortfall in this reporting period, so the equivalent flow is reported as zero.

Line 7E.11 Additional storm tank capacity provided at STWs (grey infrastructure), Line 7E.12 Additional effective storm storage capacity at sewage treatment work (delivered through green infrastructure), Line 7E.15 Total number of sewage treatment works sites where additional storage has been delivered (grey infrastructure), Line 7E.16 Number of sewage treatment works sites where additional storage has been delivered with pumping (grey infrastructure) and Line 7E.17 Number of sewage treatment works benefitting from green infrastructure replacing the need for storm tank storage

There has been no additional storage tank capacity delivered this year.

Line 7E.13 Additional volume of network storage at CSOs etc. to reduce spill frequency (grey infrastructure), Line 7E.14 Additional effective storage in the network delivered through green infrastructure Line 7E.18 Number of sites delivering additional network storage (grey infrastructure), Line 7E.19 Number of sites delivering additional network storage including pumping (grey infrastructure) and Line 7E.20 Number of sites delivering additional network storage through green infrastructure

One additional network storage scheme was delivered through grey infrastructure. This shown in the table below. CHR0012 is not included as the driver was met through installation of treatment solution. The solution was constructed as wetland, the EDM is upstream of the treatment therefore the environmental benefit is from the treatment through the wetland rather than a spill frequency reduction.

There were no green infrastructure schemes delivered.

WINEP Reference	Scheme Name	Delivery	Volume (m3)
6UU0524	Harrisons Farm Storm Spills (CHR0021)	17/05/2023	2,500

Line 7E.21 Surface water separation drainage area removed

The surface water separation drainage area removed has increased by 115 per cent from last year due to an increase in the number of surface water separation projects completed. This increase in scale has been supported by the introduction of a new rainwater management team at United Utilities. Some of these projects include PR24 pilots, along with green recovery.

Line 7E.22 Number of schemes delivered to meet tightened or new sanitary consents

This year, three schemes have been delivered to meet tightened or new sanitary consents.

WINEP Reference	Works Name	Delivery	Driver
7UU100070a	Kingsley WwTW	30/06/2023	Ammonia
7UU100063	Buerton South WwTW	31/12/2023	Ammonia
7UU100013a/ 7UU100013b	Wilpshire WwTW	31/12/2023	Ammonia

Line 7E.23 Number of installations requiring civils for flow monitoring at sewage treatment works
All of our installations are placed into one of the three following categories:

1. **Permit update only** – Where no additional kit is used and no additional work required.
2. **Simple install** – Installation of kit e.g. level sensors, controller for data feed and connection of telemetry.
3. **Complex/Civils install** – in addition to the simple install there was civil work required, for example digging a new duct route or adding a new access panel.

This year, there have been fifteen installations requiring civils.

WINEP ID	Site	Type
7UU200244	Kirkbride	Complex/Civils
7UU200342	Wilpshire	Complex/Civils
7UU200119	Askham-in-Furness WwTW	Complex/Civils
7UU300153c	Crag Bank PS	Complex/Civils
7UU200182	Crosscanonby WwTW	Complex/Civils
7UU300167b	Heversham Sewage PS	Complex/Civils
7UU300145	Irthington PS	Complex/Civils
7UU300181a	Little Corby PS	Complex/Civils
7UU300167a	Milnthorpe Sewage PS	Complex/Civils
7UU300181b	Newby East PS	Complex/Civils
7UU300181c	Warwick Bridge PS	Complex/Civils
7UU200562	Betley WwTW	Complex/Civils
7UU300160	Heads Nook WwTW	Complex/Civils
7UU300167c	Sandside PS	Complex/Civils
7UU300153b	St Nicholas Lane PS	Complex/Civils

Line 7E.24 Number of installations requiring civils for event duration monitoring at intermittent discharges
Using the same definition as described above in line 7E.23, there have been six EDM installations requiring civils this year.

WINEP Reference	Works Name	Driver	Delivery	Type	No. of installs
7UU200563	Betley WwTW	U_MON3	22/10/2023	Complex/Civils	1
7UU200343	Wilpshire WwTW	U_MON3	31/12/2023	Complex/Civils	1
7UU300196b	Heversham Sewage PS	U_MON3	31/03/2024	Complex/Civils	1
7UU200615	Hyde WwTW	U_MON3	31/03/2024	Complex/Civils	1
7UU200277	Millom Borwick Rails WwTW	U_MON3	31/03/2024	Complex/Civils	1
7UU200673	Stretford WwTW	U_MON3	31/03/2024	Complex/Civils	1
					6

Line 7E.25 Number of storm overflows where improvements have been made to reduce harm or reduce spill frequencies

This year there have been two storm overflows where improvements have been made to reduce harm or spill frequencies.

Scheme ID	Site	Primary Driver code
6UU0522	South Park Hall Road/Stocks Lane CSO CHR0012	WFD1g
6UU0524	Harrisons Farm CHR0021 CSO	WFD1g

Table 7F Wastewater Network+ - WINEP phosphorus removal scheme costs and cost drivers

Table 7F was a new table for 2021/22 and revised in 2022/23. The list of phosphorus schemes has been populated from the WINEP (as per position in April 2023). This includes all schemes with a phosphorus driver regardless of delivery status. Any changes to the list of WINEP schemes will be updated as appropriate in future APR submissions.

Costs are reported in 2022/23 prices consistent with RAG 4.12 Section 7.15. Incremental opex is assumed to commence once the solution or asset comes into use. This is known as the Project In Use (PIU) milestone. Projects with PIU dates from 1 April 2020 are included in enhancement opex in tables 4M and 7F.

For 2023/24 the population of projects with an expenditure forecast in the years from and after 2024/25 have been added to the table, specifically:

Scheme name	WINEP ID reference
APPLEBY WwTW	08UU100908
BARTON WwTW	08UU102433
BASSENTHWAITE WwTW	08UU100909
BRAMPTON (CARLISLE) WwTW	08UU100911

BRAMPTON (EDEN) WwTW	08UU100912
BRIDEKIRK WwTW	08UU100865
CARLISLE WwTW	08UU100916
CLITHEROE WwTW	08UU100885
DALSTON WwTW	08UU100919
DAVYHULME WwTW	08UU100878
DUFTON WwTW	08UU100113
DUKINFIELD WwTW	08UU102360
GREAT ASBY WwTW	08UU100926
KINGS MEABURN WwTW	08UU100929
KIRKBY STEPHEN WwTW	08UU100930
KNOCK WwTW	08UU100057
LONG MARTON EAST WwTW	08UU100932
LONG MARTON WEST WwTW	08UU100933
MILBURN WwTW	08UU100935
MORLAND WwTW	08UU100936
NETHER KELLET WwTW	08UU100863
NETHER PEOVER WwTW	08UU100873
ORTON WwTW	08UU100874
OVER KELLET WwTW	08UU100864
PARTINGTON WwTW	08UU100953
PENRITH WwTW	08UU100939
POOLEY BRIDGE EAST WwTW	08UU100940
RAVENSTONEDALE WwTW	08UU100941
TORPENHOW WwTW	08UU100870
WARWICK BRIDGE WwTW	08UU100975
WIGAN (HOSCAR) WwTW	09UU100060

The PE has been populated using the current design forecast as required in RAG 4.12. For schemes still in the design phase this forecast may change as the final solution is developed. Where the design population forecast is not available the current PE has been used within the site PE column. PE will be updated as appropriate in future APR submissions. Where phosphorus removal is being delivered via a catchment or wetland solution. The PE for the WwTW listed in the WINEP has been given.

The historic and enhanced consent has been populated from the WINEP. Where there is a backstop permit and stretch limit, both have been populated in the enhanced consent column. Similarly, where phosphorus removal is delivered via a wetland or catchment solution this also populated in the enhanced content column. Petteril catchment solution will result in the removal of 98kg/annum in phosphorus across three different WINEP drivers: 7UU100007b Greystoke, 7UU100012b Motherby WwTW and 7UU200449b Southwaite WwTW. Within Table 7F 'catchment solution' has been identified within the Enhanced consent column without a value to prevent double counting.

Where a site has multiple phosphorus drivers, requiring different phosphorus limits, both WINEP references have been included under a single project line, the PE has been counted twice to reflect the two requirements.

Expenditure in this table is consistent with line 4M.37 Phosphorous Removal. This includes all expenditure relating to the listed AMP7 WINEP phosphorus removal schemes, plus expenditure of £0.732m in line 7F.80 for the completion and closedown of some AMP6 schemes. Future forecasted expenditure represents our current best view of project costs and profiling through to completion. Some schemes have multiple drivers, in these instances costs have been proportionally allocated based on the driver and solution. Further to Ofwat confirming the Accelerated Programme in April 2023, the table now includes 31 schemes on lines 7F.81-7F.111.

Table 8A Bioresources sludge data for the 12 months ended 31 March 2024

We use our Regional Sludge Operational Management (RSOM) system as the primary source of measuring sludge production.

Line 8A.1 Total sewage sludge produced, treated by incumbents
The 2023/24 figure is derived from measured data for digester feed using our RSOM system. When measured data has not been available we have applied a back calculation. We have added to this figure a raw sludge production number for the sludge that we lime. Both figures exclude any inbound sludge trading and is constrained to the sludge produced within our region. It excludes the volume of lime addition, grit and screenings from sewage treatment and excludes grit and screenings arising from sludge treatment.

It excludes our sludge that is treated using lime by a 3rd party contractor. That volume is detailed in line 8A.2. As such, none of our sludge is double-counted, it is classified as subject to either incumbent or third party treatment, never both.

Sludge production has decreased slightly this year, but in future years is expected to grow in line with our sludge forecast due to population growth / industrial discharges in the region and tighter consents on effluent discharges and associated additional treatment. The total sludge produced figure is likely to have been impacted by the heavy rainfall observed in 2023/24, due to the increased stormwater diluting the influent to wastewater treatment.

Line 8A.2 Total sludge produced, treated by 3rd party sludge service provider
This figure is a raw sludge production number and excludes any inbound sludge trading and is constrained to the sludge produced within our region. It excludes the volume of lime addition, grit and screenings from sewage treatment and excludes grit and screenings arising from sludge treatment.
Compared to 2022/23 there has been a further increase in the amount of sludge sent to reclamation untreated due to operational issues and site closures in-year. Therefore, there has been less sludge metered through digestion and a larger portion of the stated volume has been calculated from tipper volumes to reclamation.

Line 8A.3 Total sewage sludge produced
This is a calculated line.

Line 8A.4 Total sewage sludge produced from non-appointed liquid waste treatment
To calculate this figure we have interpreted "non-appointed liquid waste treatment" as septic tank and bioprocessing treatment. To estimate the figure, we firstly gather information on liquid sludge thickness from some of our representative sites that receive septic tank waste. Then we apply the average percentage dry solids value (per cent DS) from a spot sample of tanker deliveries. Using the flow and concentration, we are then able to calculate the suspended solids of the septic sludge treated. Settled COD was converted into settled BOD using a ratio of 2:1 as advised from testing undertaken by our Bioprocessing team. Using an asset standard primary tank solids removal of 50 per cent, the primary sludge from non-appointed activities was calculated.
We predominantly utilise activated sludge (ASP) sites, therefore we assumed a sludge yield ratio for ASP sites is an appropriate estimate to express the secondary sludge make (0.8kg SS/kg settled BOD). Adding the primary sludge and secondary sludge for both septic tanks and bioprocessing waste therefore gives a total sludge produced from non-appointed liquid waste treatment.
The nature of this reporting line value means that small yearly variation is expected due to external demand, the value from this year is therefore very similar to the value from last year.

Line 8A.5 Percentage of sludge produced and treated at a site of STW and STC co-location
We have interpreted the line to include all co-located indigenous sludge production and indigenous sludge from physically separate sites connected by pipeline where any sludge treatment activity takes place and where that site has the appropriate Biosolids Approval Scheme (BAS) accreditation.

This year there has been a decrease in the percentage, largely driven by Southport ceasing digestion in November 2023 and Ellesmere Port being offline and exporting raw cake. There is also some variability in indigenous sludge calculations, due to per cent DS assumptions at dewatering sites.

Line 8A.6 Total sewage sludge disposed by incumbents and Line 8A.7 Total sewage sludge disposed by 3rd party sludge service provider
For 2023/24, there was an annual decrease of 10.5ttds treated sludge disposed (-13.3 per cent) compared to 2022/23. There was an increase in raw sludge taken to restoration and a reduction in treated sludge produced, the wet weather from autumn 2023 through to spring 2024 prevented a significant number of applications to land which have carried over into April 2024 onwards.
The total volume of sewage sludge disposed by 3rd party providers has increased in 2023/24 by 5.1ttds (30 per cent) compared to 2022/23. This is due to a reduction in the number of sites carrying out primary and secondary treatment and a greater reliance on the central system to absorb the additional raw cake generated.

Line 8A.8 Total sewage sludge disposed
This is a calculated line.

Line 8A.9 Total measure of intersiting 'work' done by pipeline
The work done by pipeline has been calculated using the total tonnes dry solids moved from each start site to end location. The total volume was then multiplied by the distance in one direction to give the total work done.

We have interpreted the line to include all intersiting 'work' done by pipeline that transports both raw and treated sludge, one way only.

The reported 2023/24 figure is higher than 2022/23 reported value. This is primarily due to an increase in volume down the western leg of the Mersey Valley Sludge Pipeline (MVSP) following outage at Liverpool in 2022/23. There have also been increased flows of raw sludge from Eccles to Davyhulme in 2023/24, due to pipeline outages in 2022/23.

Line 8A.10 Total measure of intersiting 'work' done by tanker
We have interpreted the line to include all treated and untreated liquid sludge intersiting 'work' done as a liquid sludge, one way only.

The total work done via tanker has been calculated by:

- Calculating the total tTDS for each route
- Calculating the distance travelled in one direction (as opposed to estimating)
- The total distance for each route is then multiplied by the total tTDS
- The regional total is a sum of all of the routes

There has been an increase in total amount of tonnes dry solids (tDS) transported by tanker from 56,242 tDS to 61,303 tDS. However, a decrease in average distance (tDS weighted) to 24.29 km from 25.05 km results in slight overall increase in ttDS*KM.

Line 8A.11 Total measure of intersiting 'work' done by truck
We have interpreted this line to be sludge as a solid (cake), with intersiting 'work' done one way only. All of this work is raw sludge cake movements.

The total work done via truck has been calculated by:

- Calculating the total ttds for each route.
- Calculating the distance travelled in one direction.
- The total distance for each route is then multiplied by the total ttds.
- The regional total is a sum of all of the routes.

In 2023/24 there has been a large increase in the volume of cake transported. This is due to:

- Substantial increase in raw cake movements via truck, excluding reclamation (disposal), movements.
- Additional 540 ttDS*km from Ellesmere Port.
- Increased movements into the Blackburn cake pad and Manchester Bioresources Centre (MBC).
- Increased output from Crewe, Preston and Rochdale.

There has also been a decrease of 389 ttDS*km from Liverpool as this site is no longer exporting cake.
Line 8A.12 Total measure of intersiting 'work' done (all forms of transportation)
This is a calculated line.

Line 8A.13 Total measure of intersiting 'work' done by tanker (by volume transported)
The figure that we have reported is higher than the last financial year. As described in line 8A.10, despite a slight increase in work-done on a tDS basis, we are observing a further increase in work-done on a volume basis.
This is driven through a reduction in the percentage of dry solids (per cent DS) from an average of 2.97 per cent to 2.87 per cent. Percentage dry solids at sites such as Widnes, which travel further, have decreased, thus amplifying the variance between work-done on a tDS basis and m^3 basis

Line 8A.14 Total measure of 'work' done in sludge disposal operations by pipeline
We do not dispose of any sludge by pipeline.

Line 8A.15 Total measure of 'work' done in sludge disposal operations by tanker
This year we have not disposed of any sludge by tanker.

Line 8A.16 Total measure of 'work' done in sludge disposal operations by truck
From 2016/17 onwards our vehicles have been able to record distances on board to automatically calculate distances travelled.

This year there has been a 3,138ttds*km/year (26.4 per cent) increase from the previous reporting period. This is due to the increased reliance on Scottish restoration sites at 4,853.9ttds*km/year up from 1514.24ttds*km/year (221 per cent) in 2022/23 and a lack of suitable restoration availability closer to our export sites. There was also

considerable additional distance travelled for exports to agriculture, which rose to 10,185.44ttds*km/year from 8,198.39ttds*km/year in 2022/23 an increase of (24 per cent) due to lack of local demand, but mainly to access available land during the wet weather from autumn 2023 onwards.

Line 8A.17 Total measure of 'work' done in sludge disposal operations (all forms of transportation)
This is a calculated line.

Line 8A.18 Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)
As described in line 8A.15, we have not disposed of any sludge by tanker this year.

Line 8A.19 Chemical P sludge as per cent of sludge produced at STWs
There was an increase in the percentage of chemical P sludge this year. There is continual improvement at Wastewater treatment sites to remove Phosphorous before discharge, which inevitable results in additional sludge. In addition, two sites became chemical P removal sites and four sites became Low Phosphorous (LP) chemical P removal sites (permit <1mg/l) this year.

Table 8B Bioresources operating expenditure analysis for the 12 months ended 31 March 2024

Sludge transport method

Sludge transport Lines 8B.1 to 8B.10
All allocations are in line with the prior year.

Sludge treatment type

Sludge treatment Lines 8B.11 to 8B.20
Costs are allocated from ‘other’ according to the final treatment route of the sludge.

Our main sludge pipeline, the Mersey Valley Sludge Pipeline (MVSP) transports treated sludge and so we have included costs associated with this pipeline in the sludge treatment ‘Conventional AD’ column.

Sludge liquors recharges have been reflected in costs and the RAG 2.09 allocation of other business activities (regulation costs), in accordance with the RAG 4.12 definition of functional expenditure as in the prior year.

Sludge disposal route

Sludge Disposal Lines 8B.21 to 8B.30
All other allocations are in line with the prior year.

Lines 8B.1, 8B.11 and 8B.21 – Power
Sludge treatment power costs have reduced due to an increase in the power price for generation sold to WWN+.

Lines 8B.2, 8B.12 and 8B.22 – Income treated as negative expenditure
Income is generated using sludge assets, so is allocated 100 per cent to Sludge Treatment. Income treated as negative expenditure has decreased due to reduced gas availability for Export and the impact of price decreases in the wholesale energy markets.

Lines 8B.3, 8B.13 and 8B.23 – Discharge consents
We continue to review the charges that we pay for our Pollution Prevention and Control (PPC) permits and Waste Management Licenses with the Environment Agency to ensure that we pay the correct charges.

Lines 8B.4, 8B.14 and 8B.24 – Bulk discharge
No costs within Bioresources.

Lines 8B.5, 8B.15 and 8B.25 – Renewals expensed in year (infrastructure)
Infrastructure renewals expenditure on our raw sludge pipelines has been allocated to sludge transport and expenditure on our treated sludge pipeline (MVSP) has been allocated to sludge treatment. There is no spend to report for 2023/24.

Lines 8B.6, 8B.16 and 8B.26 – Renewals expensed in year (non-infrastructure)
There is no expenditure against this line.

Lines 8B.7, 8B.17 and 8B.27 – Other operating expenditure excluding renewals
Sludge liquors recharges have been reflected in other operating and the RAG 2.09 allocation of other business activities (regulation costs), in accordance with the RAG 4.12 definition of functional expenditure as in the prior year. Table 8B does not reconciles to table 4E due to the differing definition.

Other operating expenditure in sludge transport has increased mainly due to additional sludge volumes, site closures and increased distances from incidents/site closures.

Lines 8B.8, 8B.18 and 8B.28 – Total functional expenditure
This is a calculated line.

Lines 8B.9, 8B.19 and 8B.29 – Local authority and Cumulo rates
For sludge treatment (excluding MVSP and Shell Green) the Wastewater local list business rates costs cover the operational assets (excluding Network) which are allocated to Wastewater upstream services on a proportionate basis to GMEAV of non-infrastructure assets at each site.

The MVSP (Mersey Valley Sludge Pipeline) is allocated directly to sludge treatment as the pipeline transports treated sludge. Shell Green is split between sludge treatment and sludge disposal based on GMEAV of the dewatering and incineration assets.

Lines 8B.10, 8B.20 8B.30 – Total operating costs (excluding 3rd party)
This is a calculated line.

Table 8C Bioresources energy and liquors analysis for the 12 months ended 31 March 2024

Energy

Line 8C.1 Energy consumption – Bioresources
This is the gross energy consumption across Bioresources. This has increased this year mainly due to increases in the market price of electricity. The market price reflects our hedged price of electricity.

We believe there is an inconsistency between how the volumes and costs are presented in this row of the table. The total MWh column for 8C.1 is an input cell, which allows for total energy consumption from electricity, heat, biomethane and any other energy type to be reported, as per the RAG 4.12 guidance. However, for costs the £m total column is a formula that sums the total consumption from electricity, heat and biomethane, which leaves no option to include the costs of consumption from other energy types. We therefore believe that the value in the total cost cell should be £24.457 million, which includes £3.328 million of transport fuel costs in addition to the £21.129 million reported in the table.

Line 8C.2 Energy generated by and used in Bioresources control [Electricity]
This is electricity generated by undertaking activities within the Bioresources price control and which is subsequently used within the Bioresources control.

The total amount of electricity produced by Bioresources has decreased this year. This is due to the digestion process at Ellesmere Port being offline for a large portion of the year and digestion activities ceasing at Bolton. There has also been an increase in the market price of electricity which has impacted the equivalent monetary value. The market price reflects our hedged price of electricity.

Line 8C.2 Energy generated by and used in Bioresources control [Heat]
This is heat generated by undertaking activities within the Bioresources price control and which is subsequently used within the Bioresources control.

The total amount of heat used has increased this year. This is due to continuous improvement in heat efficiency at MBC, offsetting the fact that less sludge has been treated through anaerobic digestion. The reduction in sludge is due to site outages at Ellesmere Port and digestion ceasing at Southport and Bolton.

Line 8C.3 Energy generated by Bioresources and used in network plus control [Electricity]
This is electricity generated by undertaking activities within the Bioresources price control and which is subsequently used within the wastewater network plus price controls.

The total amount of electricity produced has decreased this year. As a result, Wastewater Network+ has been supplied with a smaller volume than the previous year. This is due to the digestion process at Ellesmere Port being offline for a large portion of the year and digestion activities ceasing at St. Bolton. As a consequence, there has also been a reduction in the amount of electricity exported to Network plus.

The increase in monetary value has been impacted by the increase in the market price of electricity. The market price reflects our hedged price of electricity.

Line 8C.4 Energy generated by Bioresources and exported to the grid or third party [Electricity]
This is the electricity generated by undertaking activities within the Bioresources price control and which is subsequently exported to the national grid or a third party (including non-appointee businesses).

The total amount of electricity produced has decreased this year and as such there has been a decrease in electricity exported to the grid as sites will export to grid when the engines are operating at full load. This is due to the digestion process at Ellesmere Port being offline for a large portion of the year and digestion activities ceasing at Bolton.

There has been a significant decrease in the market price of electricity which has also contributed to the decrease in exported electricity.

Line 8C.4 Energy generated by Bioresources and exported to the grid or third party [Biomethane]
This is the Biomethane generated by undertaking activities within the Bioresources price control and which is subsequently exported to the national grid or a third party (including non-appointee businesses).

The market price of Biomethane has decreased significantly since last year. Volumes have also decreased slightly with increased use of generated gas at Davyhulme reducing the volumes available to export.

Line 8C.5 Energy generated by Bioresources that is unused [Heat]
This is heat generated by undertaking activities within the Bioresources price control and which is subsequently unused by the incumbent, third parties or the national grid.

A decrease in the amount of heat unused is due to continuous improvement in heat efficiency at MBC.

Line 8C.6 Energy bought from grid or third party and used in Bioresources control [Electricity]
This is electricity that is purchased from the national grid or another third party and subsequently used within the Bioresources price control.

Although the volume purchased has reduced, there is an increase in cost due to increase in market price of electricity purchased. The market price reflects our hedged price of electricity.

Line 8C.6 Energy bought from grid or third party and used in Bioresources control [Heat]
This is the heat that is purchased from the national grid or another third party and subsequently used within the Bioresources price control.

This year there has been a reduction in the amount of fuel purchased to provide heat to Bioresources processes. This is due to some additional biogas being used in boilers to displace stationary fuels at MBC.

Line 8C.6 Energy bought from grid or third party and used in bioresources control [Biomethane]
This corresponds to the amount of Propane that has been purchased to enrich the Biomethane to meet grid entry requirements.

There has been a slight reduction in both the volume of propane used in the bioresources control and the market price.

Income from renewable energy subsidies

Line 8C.7 Income claimed from Renewable Energy Certificates
This is the ROC income that applies to bioresources assets. This has increased this year due to an increase in price, despite lower generation volumes.

Line 8C.8 Income claimed from Renewable Heat Incentives
This is the total income received from Renewable Heat Incentives that apply to bioresources assets. This has increased due to an increase in price, offsetting a decrease in eligible volumes.

Line 8C.9-11 Income claimed from other renewable energy subsidies
The total income received from renewable energy subsidies that are not Renewable Energy Certificates and Renewable Heat Incentives that apply to bioresources assets. This relates to RGGO's and RTFO's. RGGO has decreased this year due to a reduction in the volume of RGGO trades. RTFO was a new subsidy in the final quarter of 2022/23, instead of RHI, and there have not been any RTFO trades in the current year.

Line 8C.12 Total income claimed from renewable energy subsidies
This is a calculated line.

Line 8C.13 % of total number of renewable energy subsidies due to expire in the next 2 financial years
This is percentage of the total number of renewable energy subsidies claimed by the company that are due to expire within the next two financial years. There are no renewable subsidies which are due to expire in the next two years.

Line 8C.14 This year's value of renewable energy subsidies due to expire in the next 2 financial years
This is the total value of the number of renewable energy subsidies claimed by the company that are due to expire within the next two financial years. There are no renewable subsidies which are due to expire in the next two years.

Bioresources liquors treated by network plus [AMP7 shadow reported values]

Line 8C.17 Recharge to Bioresources by network plus for costs of handling and treating bioresources liquors
The sludge liquor cost for 2023/24 is £13.244 million compared to a reported figure in 2022/23 of £11.246 million. The increase is mainly due to the electricity price increases.

There has been no change to the previous two year's methodology for calculating the sludge liquors. The approach to calculating the sludge liquors is based on the Jacob's methodology but includes the change outlined as follows. The Jacobs' methodology is (naturally) focused on load, but we do not believe that it adequately recognises that wastewater treatment assets are also used to manage surface water from combined sewer systems, and that this also results in additional costs. These costs all relate to managing surface water highway drainage (SWHD) and not to managing sludge liquors and should therefore be excluded from the calculation of liquor recharge costs, for example through the sizing of the treatment processes. In other words, if we were to allocate wastewater treatment Capex based solely on load, as the load of SWHD is assumed to be negligible, this would allocate too little costs to SWHD and too much to foul sewerage/trade effluent and sludge liquors. As such, our methodology takes into account the capacity of WwTWs designed for Peak flows. In practice, this means that we have allocated a share of Capex for wastewater treatment assets to surface water drainage, based on the design capacity of WwTWs, which is excluded from the calculation of sludge liquor costs. The per cent adjustment reduces the capex charge to 41 per cent. The remaining capex is allocated between sludge liquors and foul/sewerage trade effluent based on Load. It is assumed that SWHD does not impact on this allocation (and so does not result in double counting) as SWHD load is assumed to be negligible. We have assumed that all asset components of a WwTW are scalable to flow volumes and have applied the same percentage allocation to each of these. This is consistent with the approach used for allocating the costs of combined sewers between foul sewerage and surface water drainage for APR proformas 4E and 4K. Whilst some classes of assets, e.g. instrumentation, are potentially less scalable to flow volumes than others, this accounts for less than 6 per cent of NMEAV and using a different approach for these would not materially affect the overall costs being allocated to surface water drainage. For opex, this adjustment is not considered appropriate, as the sizing of assets for peak flows is not a key driver of cost.

Table 8D Bioresources sludge treatment and disposal data for the 12 months ended 31 March 2024

Sludge treatment process

This table has been populated on the basis of the sludge treatment centre (STC) capability not the product that is produced.

Line 8D.1 per cent Sludge – untreated
The volume of sludge untreated by incumbent (e.g. sent to reclamation) has increased from 8.6 per cent to 9.7 per cent. This is due to the closure of Southport and Bolton sludge treatment and temporary outages for maintenance at Ellesmere Port.
Line 8D.2 per cent Sludge treatment process - raw sludge liming
There is no material change to the reported number, as it remains consistent with the previous year.

Line 8D.3 per cent Sludge treatment process - conventional AD and Line 8D.4 per cent Sludge treatment process - advanced AD
Sludge treatment by conventional AD has increased slightly from 26.6 per cent to 26.9 per cent and treatment by advanced AD has decreased from 62.7 per cent to 60.9 per cent compared to the previous reporting year.
The increase in conventional AD is due increases in throughput at Liverpool and Bolton. However, there have been reductions at Southport and Bolton due to site closures.

The maintenance outage Ellesmere Port and the Enhanced Enzmic Hydrolysis (EEH) plant being offline at Lancaster have resulted in a decrease in advanced AD. However, there has been increased throughput at Blackburn and Manchester Bioresources Centre (MBC).
A small percentage (0.2 per cent) of sludge was sent for conventional AD third party treatment at Yorkshire Water (Huddersfield). In addition, 0.5 per cent of sludge was sent for advanced AD third party treatment at Yorkshire Water (Esholt - Bradford) and Severn Trent (Strongford).

Line 8D.5 per cent Sludge treatment process - incineration of raw sludge
We do not utilise this treatment process.

Line 8D.6 per cent Sludge treatment process - other (specify)
We do not utilise any other treatment processes in addition to the ones described in lines 8D.1 to 8D.4.

Line 8D.7 per cent Sludge treatment process – Total
This is a calculated line.

(Un-incinerated) sludge disposal and recycling route

Line 8D.8 per cent Sludge disposal route - landfill, raw and Line 8D.9 per cent Sludge disposal route - landfill, partly treated
We do not currently use landfill as a disposal route.

Line 8D.10 per cent Sludge disposal route - land restoration/ reclamation
We have interpreted the line to be calculated from a treated sludge figure. The total volume of sewage sludge disposed by 3rd party providers in 2023/24 increased by 6.1 per cent when compared to 2022/23. This is due to a reduction in the number of treatment sites and some occasions in the year where raw sludge temporary treatment process capacity issues have occurred.

Line 8D.11 per cent Sludge disposal route - sludge recycled to farmland
We have interpreted the line to be calculated from a treated sludge figure (regardless of origin i.e. sludge traded in has been included in scope). We have interpreted this line to include the volume of lime addition, where relevant, as this is the physical volume of material actually disposed.

The figure for sludge disposed to farmland by incumbents in 2023/24 has decreased by 6.1 per cent compared to 2022/23. This was due to an increase in raw sludge to restoration, and a carryover of treated sludge in temporary stockpiles due to weather conditions.

Line 8D.12 per cent Sludge disposal route - other (specify)
We do not utilise any other disposal routes in addition to the ones described in lines 8D.10 to 8D.11.

Line 8D.13 per cent Sludge disposal route – Total
This is a calculated line.

Table 9A Innovation Competition

Line 9A.1 Allocated innovation competition fund price control revenue
The allowed amount of revenue to be collected from customers in relation to the innovation fund in 2023/24 as per the PR19 Final determination, inflated to nominal prices for the year using Actual November CPIH.

Lines 9A.2 Innovation fund income from customers
The revenue collected from customers in 2023/24, which aligns to the allowance reported in line 9A.1

Lines 9A.3 – Income from customers to fund innovation projects the company is leading on
During 2023/24, UU won 3 projects: Mainstreaming Nature Based Solutions, Biopolymers in the Circular Economy and Water Industry Printfrastructure.

Line 9A.4 – Income from customers as part of the inflation top-up mechanism
During 2023/24, UU received income for inflation for two projects: Catchment Systems Thinking and Alternative Phosphorus.

Line 9A.5 – Income from other water companies to fund innovation projects the company is leading on
During 2023/24, UU won 3 projects: Mainstreaming Nature Based Solutions, Biopolymers in the Circular Economy and Water Industry Printfrastructure.

Line 9A.6 Income from customers that is transferred to other companies as part of the innovation fund
As per the payment schedule that is issued from Nesta and Ofwat following the announcement of the winners of each round. £7.1million paid into the innovation fund in 2023/24

Line 9A.8 Administration charge for innovation partner
As per the annual invoice issued to us by Ofwat for the running of the fund, which has been paid in 2023/24, as well as the MOSL charges incurred at each round payment run.

Lines 9A.9 – 9A.23 Project detail
Expenditure breakdown on our 7 successful bids in securing for lead projects, across the four rounds awarded so far. A total of £8.7 million spend on innovation projects in 2023/24 (excluding 10 per cent partnership contribution).
Note that the table does not include the contributions to other water companies for their lead bids.

Line 9A.24 Total
This is a calculated line

Table 10A Green recovery data capture additional items for the 12 months ended 31 March 2024

Our activities for green recovery do not have an impact on the activities listed in lines 10A.1 to 10A.21.Therefore the reported values for these lines are stated as ‘N/A’.

Our green recovery activities do potentially impact on lines 10A.22 and 10A.25. However, as detailed below in our commentary for table 10E, there have been no outputs completed under green recovery this year.

Table 10B Green recovery data capture outcome performance for the 12 months ended 31 March 2024

Our activities for green recovery do not have an impact on the activities listed Table 10B. Therefore the reported values for these lines are stated as ‘N/A’.

Table 10C Green recovery data capture outcome performance for the 12 months ended 31 March 2024

Performance commitments set in standardised units

Line 10C.1 Internal sewer flooding - customer proactively reported, Line 10C.2 Internal sewer flooding - company reactively identified (i.e. neighbouring properties), Line 10C.3 Internal sewer flooding, Line 10C.4 Pollution incidents, Line 10C.5 Risk of sewer flooding in a storm and Line 10C.6 Risk of sewer flooding in a storm

As detailed below in our commentary for table 10D, our green recovery activities only potentially impact on three of our performance commitments. This potential impact excludes all of the common performance commitments outlined in table 10C, therefore the reported values are stated as N/A.

Table 10D Green recovery data capture outcome performance for the 12 months ended 31 March 2024

Bespoke performance commitments relevant to green recovery reporting

Line 10D.1 Enhancing natural capital for customers, Line 10D.2 Hydraulic internal flood risk resilience and Line 10D.3 Hydraulic external flood risk resilience

There is the potential for some of our 'sustainable drainage and natural flood management' green recovery activities to provide additional benefit under both our 'hydraulic internal flood risk resilience' and 'hydraulic external flood risk resilience' performance commitments. However, in 2023/24, none of our activities delivered any benefit in this area.

Likewise, there is the potential for some of our 'catchment phosphorus' green recovery activities to provide additional benefit under our 'enhancing natural capital for customers' performance commitment. Again, none of our activities delivered any benefit in this area in 2023/24.

Table 10E Green recovery data capture reconciliation model input for the 12 months ended 31 March 2024

A detailed overview of our green recovery activity for 2023/24 and future milestones can be found at: https://www.unitedutilities.com/globalassets/documents/pdf/green-recovery-2024

Table 10F Additional reporting to account for impacts of the accelerated infrastructure delivery projects for the 12 months ended 31 March 2024

Our activities for accelerated infrastructure delivery projects do not have an impact on the activities listed Table 10F. Therefore the reported values for these lines are stated as 'N/A'

Table 10G Additional reporting to account for impacts of transition expenditure for the 12 months ended 31 March 2024

Lines 10G.3, 10G.4, 10G.5 and 10G.6 - Metering activities – Totex expenditure
In 2023/24, the transitional expenditure on metering was associated with preparatory activities, which included investment in smart meter infrastructure and investigations. The activities did not include the installation of new meters or the replacement of existing meters and as such, did not deliver a supply-demand balance benefit, and are therefore reported as zero.

Lines 10G.7 to 10G.20 - Metering activities - Explanatory variables
In 2023/24, the transitional expenditure on metering was associated with preparatory activities, which included investment in smart meter infrastructure and investigations. The activities did not include the installation of new meters or the replacement of existing meters and as such, did not deliver a supply-demand balance benefit, Lines 10G.7 to 10G.20 are therefore reported as zero.

Lines 10G.21 to 10G.23 – PCC and Leakage – Explanatory variables
There is no transitional investment associated with these lines, so they are therefore reported as zero.

Lines 10G.24 to 10G.37 - Wastewater network+ and bioresources – Explanatory variables
In 2023/24, the transitional expenditure in Wastewater Network+ was associated with preparatory activities. These activities did not include the delivery of any schemes or notable outputs, and as such, did not deliver any storage capacity or permit variation benefit. Lines 10G.24 to 10G.37 are therefore reported as zero.

Table 10H Accelerated schemes data capture reconciliation model input for the 12 months ended 31 March 2024

Within Table 10H we will report the delivery of the agreed project completion. Once a project has been completed and confirmation the output has been achieved, we will then demonstrate completion through an evidence pack and output in use certificate. This year no outputs have been delivered, therefore all cells will be recorded as zero.

It is important to note that the way the table is set out for ENV2 Accelerating habitats improvement in the Eden Catchment will only show progression when the schemes are completed (achieving 0.25 mg/l). Therefore it is important to note that any associated spend with this programme, appearing in Table 4M, prior to completion of the project will not reconcile with this table.

In the guidance it states ‘This table is intended to provide information to apply the midnight adjustment to the RCV at the start of the 2025-30 period and to reconcile against companies' price control deliverables at the end of the 2025-30 period.’ However, it is our view that this table cannot be used for this purpose for two reasons. Firstly, it does not profile expenditure spend, which is required in order to be able to calculate the additional financing costs that Ofwat confirmed companies can recover through the midnight adjustment. Secondly, the criteria for transition investment and/or accelerated delivery does not require that schemes must be complete in order to qualify and therefore this table would significantly understate the required midnight adjustment if schemes (major capital projects) do not complete before the end of FY25. We recommend that Ofwat uses tables 4L and 4M to inform the midnight adjustment reconciliation.

Table 11A Operational greenhouse gas emissions reporting for the 12 months ended 31 March 2024

This table has been populated where possible directly from the 'Ofwat Annual Performance Reporting' lines on the '11A data' worksheet of the Carbon Accounting Workbook (CAW) v18.3(AR5) with data for the 12 months ending 31 March 2024. Where values are not in a suitable format in the '11A data' worksheet details were obtained from other worksheets within the same CAW v18.3(AR5). A consistent approach was used across the industry using the 'Mapping of Table 11A (Apr 10 2024) from CAW v18.3 Final' document produced by the carbon accounting strategy group. Remaining values were obtained from United Utilities Group scope 3 inventory.

Line 11A.1 Burning of fossil fuels (location-based) and Line 11A.2 Burning of fossil fuels (market-based)
The GHG Protocol states that location / market-based methodologies only apply to scope 2 emissions. Ofwat recognised this in the June 2 2023 update of the 'Greenhouse gas emissions data request 2023' template but reverted to including both lines 11A.1 and 11A.2 in RAG 4.12.
In this table both lines are populated from the CAW line described as 'Burning of fossil fuels (including CHP generated onsite)' to enable lines 11A.6 and 11A.7 to auto calculate.

Line 11A.3 Process and fugitive emissions and Line 11A.4 Vehicle transport
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.5 Emissions from land
As per the GHG protocol Corporate Value Chain Accounting Standard emissions from land resulting from disposal of waste are not scope 1 emissions regardless of the owner of the land. Such emissions should be reported under Scope 3 Category 5: Waste Generated in Operations. Therefore, all emissions associated with biosolids recycling are scope 3 category 5 emissions and are reported in Line 11A.30 Disposal of waste.

Line 11A.6 Total scope one emissions (location-based) and Line 11A.7 Total scope one emissions (marketbased)
These are calculated lines.

Line 11A.8 Scope one emissions; GHG type CO2, Line 11A.9 Scope one emissions; GHG type CH4 and Line 11A.10 Scope one emissions; GHG type N2O
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.11 Scope one emissions: GHG other types
Populated directly from relevant lines in CAW v18.3 (AR5) 'Full Results' worksheet.

Line 11A.12 Purchased electricity (location-based)
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.13 Purchased electricity (market-based)
Populated directly from relevant lines in CAW v18.3 (AR5) 'Results by account' worksheet.
Line 11A.14 Purchased heat, Line 11A.15 Electric vehicles and Line 11A.16 Removal of electricity to charge electric vehicles at site
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.17 Total scope two emissions (location-based) and Line 11A.18 Total scope two emissions (marketbased)
These are calculated lines.

Line 11A.19 Scope two emissions; GHG type CO2, Line 11A.20 Scope two emissions; GHG type CH4 and Line 11A.21 Scope two emissions; GHG type N2O
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.22 Scope two emissions: GHG other types
There are no emissions by GHGs other than CO_2, CH_4 and N_2O for the scope 2 emissions sources in the UK government conversion factors for company reporting of GHG emissions. Therefore the emissions of other GHG types are assumed to be zero.

Line 11A.23 Business travel
Populated directly from relevant lines in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.24 Outsourced activities
We outsource a small portion of our sludge transport. The emissions are calculated using the tonne-kilometres transported and use the emission factor below from the UK government conversion factors for company reporting of GHG emissions https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023

- DEFRA 2023: Freighting goods, HGV (all diesel), All HGVs, Average laden

Line 11A.25 Purchased electricity; extraction, production, transmission and distribution (location-based) and Line 11A.26 Purchased electricity; extraction, production, transmission and distribution (market-based)
This line is calculated with the scope 3 emissions from purchased electricity using the following three emissions factors from the UK government conversion factors for company reporting of GHG emissions https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023.

- DEFRA 2023: Transmission and distribution, T&D- UK electricity
- DEFRA 2023: WTT- UK electricity, WTT- UK electricity (generation)
- DEFRA 2023: WTT- UK electricity, WTT- UK electricity (T&D)

It was not possible to populate directly from the CAW v18.3 (AR5) '11A data' worksheet as only the Transmission and distribution emissions are included. The 'Mapping of Table 11A (Apr 10 2024) from CAW v18.3 Final' document produced by the carbon accounting strategy group outlines where the Well To Tank (WTT) can be found and the lines were populated with the sum of Transmission and Distribution and WTT emissions.
The GHG Protocol states that location / market-based methodologies only apply to scope 2 emissions. Therefore, both lines are populated with the same numbers, as described above to enable lines 11A.31 and 11A.32 to auto calculate.

Line 11A.27 Purchased heat; extraction, production, transmission and distribution
We do not purchase any heat.

Line 11A.28 Purchased fuels; extraction, production, transmission and distribution
This line is populated with the scope 3 emissions from purchased fuels calculated using the relevant emissions factors from the UK government conversion factors for company reporting of GHG emissions https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023.

It was not possible to populate directly from the CAW v18.3 (AR5) '11A data' worksheet so the 'Mapping of Table 11A (Apr 10 2024) from CAW v18.3 Final' document produced by the carbon accounting strategy group was used to locate the fuel WTT emissions to populate the line.

Line 11A.29 Chemicals
Populated directly from relevant lines in CAW v18.3 (AR5) 'Summary' worksheet. This is a change for 2024.
The key deliverable of the Chemicals and greenhouse gasses task and finish group, December 2023 to March 24, was an industry wide agreed list of commonly used chemicals and chemicals products with their associated emission factors. This output was captured in the 'Water Industry Chemicals and GHG Task and Finish group March 2024 FINAL report'. The emission factors from this document were populated into CAW table 5.1.1 and with the quantities of each chemical purchased by UUW used to estimate the emissions.

Line 11A.30 Disposal of waste
Populated directly from relevant lines in CAW v18.3 (AR5) 'Summary' worksheet. This line includes emissions arising from disposal of grit and screenings and wastewater sludge only and does not include any other waste or water sludge emissions data as confirmed by Ofwat on 2 June 2023.

Line 11A.31 Total scope three emissions (location-based) and Line 11A.32 Total scope three emissions (marketbased)
These are calculated lines.

Line 11A.33 Scope three emissions; GHG type CO2, Line 11A.34 Scope three emissions; GHG type CH4, Line 11A.35 Scope three emissions; GHG type N2O and Line 11A.36 Scope three emissions: GHG other types
It is not possible to populate these lines directly from relevant lines in CAW v18.3 (AR5) but the 'Mapping of Table 11A (April 10 2024) from CAW v18.3 Final document produced by the carbon accounting strategy group provides guidance of where to find the required data.

The key principle applied was if emission factors by different GHGs are available (e.g. for the methane and nitrous oxide emissions from sludge disposal) then these should be used to populate the relevant line for that gas. Where only a combined CO_2e emission factor is available (such as WTT emission factors from UK government conversion factors for company reporting of GHG emissions) then the estimated emissions should be added into line 11A.31 for GHG CO_2.

Line 11A.37 Gross operational emissions (location-based) and Line 11A.38 Gross operational emissions (marketbased)
These are calculated lines.

Line 11A.39 Exported renewables
Populated directly from relevant line in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.40 Exported biomethane
Populated directly with location-based values from relevant line of CAW v18.3 'Results by accounts' page.

Line 11A.41 Insets
We are not yet claiming any emissions benefit from our peatland restoration and woodland planting schemes. We have registered schemes with the relevant codes to enable this option in the future, when carbon units are issued.

Line 11A.42 Other emissions reductions
This line is not populated.

Line 11A.43 Total emissions reductions
This line is a calculated. This does not include the location-based benefits of purchased green energy.

Line 11A.44 Net annual emissions (location-based)
Populated directly from relevant line in CAW v18.3 (AR5) '11A data' worksheet.

Line 11A.45 Net annual emissions (market-based)
This is a calculated line.

Line 11A.46 Emissions per Ml of treated water
This is an automatically calculated line, however, the formula in the proforma does not (and cannot) correctly calculate the Net annual emissions (market-based). Emissions reductions are different in a market based vs location based methodology primarily depending on the holder of the energy attribute certificates.

There are no lines for emissions reductions markets based so lines 11A.39 -42 have been populated with location based values and therefore line 11A.46 is calculating the gross annual emissions (market based) minus total emissions reductions (location based).

Line 11A.47 Emissions per Ml of sewage treated and Line 11A.48 Green tariff electricity
These are calculated lines with dependencies on Ofwat tables 6B and 7C.

Line 11A.49 Capital projects (cradle-to-gate)
This line is populated with our estimate for capital project emissions using the annual spend on our capital projects with our construction services partners, and an Environmentally-Extended Input-Output (EEIO) model called CEDA Global 2022 v6. The contracts with our capital delivery partners are to design and build solutions to our requirements so it is not possible to differentiate between design, materials, and build. We have chosen to populate line 11A.49 with the cradle-to -build estimate as this is the highest value it could be. Therefore lines 11A.49 and 11.50 contain the same value.

Line 11A.50 Capital projects (cradle-to-build)
This line is populated with our estimate for capital project emissions using the annual spend on our capital projects with our construction services partners, and an EEIO model called CEDA Global 2022 v6.

Line 11A.51 Purchased goods and services
This line is populated with our total estimated emissions from purchased good and services and is consistent with our other UU Group reporting.
This line is calculated from the sum of

- emissions from purchased goods and services (excluding emissions from chemicals and gases) estimated using the annual spend and an EEIO model CEDA Global 2022 v6, and
- the purchased weight-based emissions for chemicals from the CAW v18.3 (AR5) ‘11A data’ worksheet in Line 11A.29.

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Water for the North West