



South Staffs Water



Commentary for Cost Assessment Tables

13 July 2018



Introduction

This commentary accompanies the cost assessment data return of SSC submitted on 13th July 2018 covering the financial year 2017/18.

For any queries on this data return, please contact BOTH of the following via email:

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The Combined Entity of South Staffs Cambridge (SSC)

This data submission of SSC is a combined submission for its two operating regions, the former independent water only companies of South Staffs Water and Cambridge Water.

We have taken the approach of collecting the cost assessment performance data for each region individually. This ensures that we understand the full audit trail for each data line from each region, as some operational systems and processes remain separate since the merger. The approach also ensures we understand the differences between our two regions that can inform our operational strategy and business planning processes. Once collected at regional level, the majority of the data lines can simply be added together for the two operating regions to arrive at the SSC level value. For example lengths of mains, number of properties, number of treatment works, leakage and distribution input. For those lines which require a proportional input value then we have aggregated the information at a raw regional level before applying the normalising variable, in most cases distribution input, to determine the proportional value at the SSC level.

Assurance

We recognise the importance of the data supplied in this submission for future cost modelling and therefore we have applied our assurance framework risk assessment process to ensure that we carry sufficient governance.

A summary of the output of our assurance framework for this submission is as follows:

Risk Score			
Likelihood Score	Impact Score	Total Risk Score	Assurance Risk Category
2	3	6	Medium

The likelihood score is medium as much of the data uses longstanding definitions that we are familiar with and that our systems and processes are already set up to produce. Often, the data being reported is used internally for asset management purposes as well.

The impact score is high, as this data is an important part of creating industry wide cost assessment models for use at PR19.

Overall the risk score is medium. We have decided to utilise external assurance on the data this year as it is formally part of section 4 of the APR for the first time. Our external technical auditor, Jacobs, has traced data back to the source systems and calculations, at a regional level where appropriate. Jacob’s assurance statement can be found in our published APR.

Since the submission last year, we have actively monitored Ofwat’s communications on this subject and ensured that we comply fully with the most recent definitions and any clarifications made via Ofwat’s published query logs.

As last year we have elected to submit a commentary along with our data submission to explain (briefly where possible) how we have completed each data line. We have included more detail for data lines where we have any concerns about definitions, consistency across the industry, or where we have had to make assumptions.

Table commentaries

Table 4J: Atypical expenditure by business unit – wholesale water

This table mirrors table 4D apart from providing a means to report atypical items.

We have made an adjustment to line 4J.3 to report abstraction charges gross, and shown the EUIC rebate as an atypical item. As reported last year we are releasing the EUIC rebate into our annual accounts at the rate of one fifth the total rebate per year in AMP6 which is £236k per annum.

We note that line 4J.20 shows a validation error however we have checked and the numbers do reconcile.

Table 4L: Enhancement expenditure by purpose – wholesale water

As last year we have added an additional line to capture the costs of implementation for Open Water, which we have classified as enhancement because it is a new obligation driven by external legislative change.

The total enhancement expenditure reconciles to table 4J lines 14, 15 and 16.

Table 4P: Non-financial data for WR, WT and WD – wholesale water

Lines 1 to 9: We have recorded the distribution input from each of our source works for each year in the return, aggregated for each type of works, and used the total SSC distribution input as the normalising variable. Where a site has not produced any water in the year then it is not contributing to the figures.

Note that we have a large water treatment works located on the River Severn at Hampton Loade. Two points regarding this works:

1. It is shared with Severn Trent who pay a contribution towards the annual operating costs and capital costs of the works. Severn Trent's take from the works is downstream of the works within our distribution system, but we have taken the SSC output of the works to be 'net' of Severn Trent's take for the purposes of these lines as our own distribution input value is also net of our bulk exports to Severn Trent from this works. There is a potential however, depending on how the cost models work, that this scenario means that this works is not fully accounted for within our cost assessment, and therefore we suggest this scenario warrants further discussion during cost model development.
2. At PR14 and earlier, there was no differentiation between pumped storage and river abstractions. Our Hampton Loade works consists of a river abstraction feeding a pumped storage reservoir, however the works is also capable of direct river abstraction in the event that the pumped storage reservoir is out of service. We have not used this feature of the works in 2017/18 and so we have allocated the works output entirely to line 2 (pumped storage) and counted it only as a pumped storage works rather than a river abstraction in lines 8 and 9.

- Lines 10 to 13: We do not have any AR or ASR water supply schemes and so all of our boreholes are reported in line 10. Please note a potential industry consistency issue with these lines that arose previously – we are reporting the total number of borehole sites, not the number of individual boreholes drilled. A site may contain multiple individual boreholes housed within the same or multiple buildings, or within the grounds of the site. Line 13 is the sum of lines 7 through 12.
- Lines 14 and 15: We have one pumped storage reservoir located at Hampton Loade (discussed above) and one impounding reservoir located at Blithfield near Rugeley, making a total of two. The combined capacity of these reservoirs is given in line 15.
- Line 16: Our line 16 is equal to line 13 as we have historically interpreted this line as the number of intake and source pumping station ‘sites’ rather than the number of individual boreholes or pumps.
- Line 17: This is a new line this year. We have some source sites with a raw water transfer function.
- Lines 18 and 19: We have counted the total capacity of installed pumping plant, including standby units, at all of our operational sites for the report year.
- Line 20: We have reported the total length of raw water mains as recorded on our GIS.
- Lines 21 and 22: We have calculated the average pumping head in accordance with the latest definition and our reported numbers are consistent with our historical numbers.
- Lines 23 to 51: We have categorised our treatment works according to the latest definitions provided alongside the tables. We have ensured that treatment works have been reclassified appropriately where treatment processes have been enhanced during the year.
- Line 52: We have counted works that had a DWI enforcement within the report year.
- Line 53: Almost all of the water we supply to customers is dosed with orthophosphate. There is one exception in our Cambridge region where a small hamlet of 174 population, which has no lead supplies, does not receive dosed water under normal operating conditions.
- Line 54: We have calculated the average pumping head in accordance with the latest definition and our reported numbers are consistent with our historical numbers.
- Lines 55 to 64: Our GIS contains this data for both regions and therefore we are able to directly obtain this information, including the information on size bands. Please note we remain unclear on the definition for line 4P.64.
- Line 65: We hold pump capacity data for all of our sites, including data on when pump configuration changes or refurbishments were carried out which may affect the installed capacity. Our reported capacity in this line includes installed standby capacity.
- Lines 66 and 67: The operating capacity of our service reservoirs and water towers is day to day operational information and is well understood.

Lines 68 to 75:	These lines are reported consistent with the definitions provided and the historical method of calculation as used in the June Return prior to 2012 and EA returns.
Lines 76 to 78:	As we do not have direct records of the material of customer communication pipes, we have made an estimate based on the age of the main to which it is connected, and used assumptions of the materials installed in particular time periods. We have used the 2011/12 year as a baseline and fixed the number of lead and galvanised communication pipes at that point. In subsequent years we have then reduced the number of lead and galvanised CPs by identifying the number of replacements that have been undertaken either due to water quality compliance failures, at customer request, or through network renewal schemes. This is data we have available in our works management system. We have then increased line 78, the 'other' material category, by the amount that we have replaced and also by the number of new connections we have made, which would all be of modern materials.
Line 79:	We have reported in this line the number of booster pumping station 'sites', not the number of pumps. One booster pumping station 'site' will contain multiple pumps in the same physical location. As well as booster sites located within the distribution system, we have also included our 'high lift' pumping stations located at source or treatment works (as one site each) in this count because the pumping head for these assets is within the distribution business unit.
Lines 80 and 81:	The number of service reservoirs and water towers is day to day operational information and is well understood.
Lines 82 to 89:	Our GIS contains the date of installation for all mains and fittings, enabling us to directly obtain this age profile.
Line 90:	We have calculated the average pumping head in accordance with the latest definition and our reported numbers are consistent with our historical numbers.
Lines 91 to 106:	We have categorised our treatment works by the distribution input value that they supplied in the reporting year in block D and then provided the breakdown of that distribution input in block E.

Table 4Q: Non-financial data – properties, population and other – wholesale water

Lines 1 to 16:	<p>This data has been collected and reported consistently since the June Return prior to 2012 and in parts of the EA returns, WRMP and business planning process.</p> <p>We have adopted the latest definitions of residential and business properties which align with the separation of the business retail market.</p> <p>Please note that we were unsure whether to include a value for lines 4Q.3 and 4Q.5 as we have exited the business retail market and so no longer bill business customers. However clearly as a wholesaler we still supply business customers and use the billing data from the market within other calculations, for example consumption and leakage reporting. We have kept in the value of</p>
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billed customers that we would have reported had we not been an exited company, which can be removed at Ofwat's discretion if it is not required.

- Line 18: This value is unchanged from the previous year.
- Line 19: We replace lead CPs either as a result of water quality compliance failures for lead or as a result of a customer request where the customer is also replacing their supply pipe – both of these are covered by the definition of this data line. We have records within our works management system of these replacements, predominantly driven by customer requests.
- Lines 20 to 23: In 2017/18 we had no supply side enhancement. Our demand side enhancement consists of water efficiency activity.
- Lines 24 to 26: We have not historically kept a record of energy consumption separated into the required business units of water resources and network plus, however we do have power costs separated in this way, using APH, in accordance with the RAG definitions. Therefore we have used the proportional allocation of power costs to allocate the total wholesale energy consumption into the two required price control segments.
- Line 27: We have calculated peak factor as the highest 7 day rolling average distribution input in the reporting year, divided by the annual average distribution input for that reporting year. We have done this for each region independently and then weighted our two regional results by each region's distribution input to derive the combined SSC value.
- Line 28: Since 2015/16 we have reported the combined business MZC as it is one of our ODIs.
- Line 29: We have added together the variances to SELL for each region to populate this data line. Note however that the two regions are independent and so have their own leakage commitments.

Table 4V: Operating cost analysis – water resources

- Lines 1 to 8: The total operating expenditure excluding depreciation 4V.6 reconciles with table 4D, line 4D.9. Line 4V.8 does not reconcile (hence the validation error) because table 4D does not include depreciation.
- Lines 9 to 13: The lines have been compiled using the same data sources that feed into our APR.
- Lines 14 to 16: The total reconciles back to table 4D.3.
- Line 17: We have no statutory water softening.

4J - Atypical expenditure by business unit - Wholesale water

South Staffordshire / Cambridge Water

Data validation

For the 12 months ended 31 March 2018

Line description	Units	DPs	Water resources		Network+				Total	Company commentary (if required)	Completion
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution			
A Operating expenditure (excl. atypicals)											
4J.1 Power	£m	3	0.000	2.023	0.985	0.000	0.842	8.653	12.503		
4J.2 Income treated as negative expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4J.3 Abstraction charges/ discharge consents	£m	3	3.090	0.000	0.000	0.000	0.217	0.000	3.307	EIUC rebate added back	
4J.4 Bulk supply	£m	3	0.000	0.012	0.000	0.000	0.025	0.000	0.037		
Other operating expenditure											
4J.5 - Renewals expensed in year (Infrastructure)	£m	3	0.000	0.000	0.000	0.000	0.000	14.571	14.571		
4J.6 - Renewals expensed in year (Non-Infrastructure)	£m	3	0.000	0.000	0.000	0.000	0.000	1.085	1.084		
4J.7 - Other operating expenditure excluding renewals	£m	3	0.000	1.367	0.288	0.012	4.796	21.135	27.601		
4J.8 Local authority and Cumulo rates	£m	3	0.000	0.162	0.183	0.000	0.396	4.727	5.469		
4J.9 Total operating expenditure (excluding third party services)	£m	3	3.090	3.564	1.458	0.012	6.277	50.170	64.569		
4J.10 Third party services	£m	3	0.000	0.006	0.002	0.000	0.545	0.859	1.411		
4J.11 Total operating expenditure	£m	3	3.090	3.569	1.458	0.012	6.822	51.029	65.981		
B Capital expenditure (excl. atypicals)											
4J.12 Maintaining the long term capability of the assets - infra	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4J.13 Maintaining the long term capability of the assets - non-infra	£m	3	0.000	2.414	0.000	0.000	3.300	13.431	19.144		
4J.14 Other capital expenditure - infra	£m	3	0.000	0.377	0.000	0.000	0.000	10.465	10.842		
4J.15 Other capital expenditure - non-infra	£m	3	0.000	1.044	0.000	0.000	9.156	3.998	14.198		
4J.16 Infrastructure network reinforcement	£m	3	0.000	0.000	0.000	0.000	0.000	0.970	0.970		
4J.17 Total gross capital expenditure excluding third party services	£m	3	0.000	3.835	0.000	0.000	12.456	28.864	45.155		
4J.18 Third party services	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4J.19 Total gross capital expenditure	£m	3	0.000	3.835	0.000	0.000	12.456	28.864	45.155		
4J.20 Grants and contributions	£m	3	0.000	0.000	0.000	0.000	3.570	12.059	15.629	Validation issue - tables do reconcile.	
4J.21 Totex	£m	3	3.090	7.404	1.458	0.012	15.708	67.834	95.507		
C Cash expenditure (excl. atypicals)											
4J.22 Pension deficit recovery payments	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4J.23 Other cash items	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4J.24 Totex including cash items	£m	3	3.090	7.404	1.458	0.012	15.708	67.834	95.507		
D Atypical expenditure											
4J.25 EIUC rebate	£m	3	-0.236	0.000	0.000	0.000	0.000	0.000	-0.236		
4J.26 Item 2	£m	3							0.000		
4J.27 Item 3	£m	3							0.000		
4J.28 Item 4	£m	3							0.000		
4J.29 Item 5	£m	3							0.000		
4J.30 Item 6	£m	3							0.000		
4J.31 Item 7	£m	3							0.000		
4J.32 Item 8	£m	3							0.000		
4J.33 Item 9	£m	3							0.000		
4J.34 Item 10	£m	3							0.000		
4J.35 Total atypical expenditure	£m	3	-0.236	0.000	0.000	0.000	0.000	0.000	-0.236		
E Total expenditure											
4J.36 Total expenditure	£m	3	2.854	7.404	1.458	0.012	15.708	67.834	95.271		

Table 4J does not equal table 2B, please provide reasoning and reconciliation in your commentary

Key to cells:

Input cell

Calculation cell

Please refer to RAG 4.07 - Guideline for the table definitions in the annual performance report for the reporting year 2017-18

Additional guidance

This table is closely associated with pro forma 4D in the APR (as per RAG4).

4L - Enhancement expenditure by purpose - Wholesale water South Staffordshire / Cambridge Water Data validation

For the 12 months ended 31 March 2018

Line description	Units	DPS	Expenditure in report year							Cumulative expenditure on schemes completed in the report year							Company commentary (if required)	Completion
			Water resources		Network+					Water resources		Network+						
			Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	Total	Abstraction licences	Raw water abstraction	Raw water transport	Raw water storage	Water treatment	Treated water distribution	Total		
A Enhancement expenditure by purpose																		
4L1 NEP - Making ecological improvements at abstractions (Habitats Directive, SSSI, NERC, BAPs)	Em	3	0.000	0.847	0.000	0.000	0.000	0.000	0.847	0.000	0.847	0.000	0.000	0.000	0.000	0.847		
4L2 NEP - Eels Regulations (measures at intakes)	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
4L3 Addressing low pressure	Em	3	0.000	0.000	0.000	0.000	0.000	0.281	0.281	0.000	0.000	0.000	0.000	0.000	0.000			
4L4 Improving taste / odour / colour	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
4L5 Meeting lead standards	Em	3	0.000	0.000	0.000	0.000	0.000	0.142	0.142	0.000	0.000	0.000	0.000	0.000	0.142			
4L6 Supply side enhancements to the supply/demand balance (dry year critical / peak conditions)	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
4L7 Supply side enhancements to the supply/demand balance (dry year annual average conditions)	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.566			
4L8 Demand side enhancements to the supply/demand balance (dry year critical / peak conditions)	Em	3	0.000	0.009	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000			
4L9 Demand side enhancements to the supply/demand balance (dry year annual average conditions)	Em	3	0.000	0.000	0.000	0.000	0.000	0.065	0.065	0.000	0.000	0.000	0.000	0.000	0.065			
4L10 New developments	Em	3	0.000	0.000	0.000	0.000	0.000	8.180	8.180	0.000	0.000	0.000	0.000	0.000	7.867			
4L11 New connections element of new development (CPs, meters)	Em	3	0.000	0.000	0.000	0.000	0.000	3.969	3.969	0.000	0.000	0.000	0.000	0.000	4.120			
4L12 Investment to address raw water deterioration (THM, nitrates, Crypto, pesticides, others)	Em	3	0.000	0.500	0.000	0.000	8.873	0.033	9.407	0.000	0.679	0.000	0.000	9.867	11.101			
4L13 Resilience	Em	3	0.000	0.000	0.000	0.000	0.207	0.274	0.481	0.000	0.000	0.000	0.532	0.287	0.820			
4L14 SEMD	Em	3	0.000	0.052	0.000	0.000	0.000	0.653	0.705	0.000	0.045	0.000	0.000	0.103	0.147			
4L15 NEP - Investigations	Em	3	0.000	0.000	0.000	0.000	0.010	0.000	0.010	0.000	0.000	0.000	0.010	0.000	0.010			
4L16 Improvements to river flows	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
4L17 Metering (excluding cost of providing metering to new service connections) - meters requested by optants	Em	3	0.000	0.000	0.000	0.000	0.000	1.755	1.755	0.000	0.000	0.000	0.000	0.000	1.605			
4L18 Metering (excluding cost of providing metering to new service connections) - meters introduced by companies	Em	3	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000			
4L19 Metering (excluding cost of providing metering to new service connections) - other	Em	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
4L20 Open water programme - wholesale implementation enhancement capex costs	Em	3	0.000	0.009	0.000	0.000	0.056	0.095	0.160	0.000	0.009	0.000	0.000	0.056	0.095			
4L21 Capital expenditure purpose - WATER additional line 2 [Other categories]	Em	3						0.000							0.000			
4L22 Capital expenditure purpose - WATER additional line 3 [Other categories]	Em	3						0.000							0.000			
4L23 Capital expenditure purpose - WATER additional line 4 [Other categories]	Em	3						0.000							0.000			
4L24 Capital expenditure purpose - WATER additional line 5 [Other categories]	Em	3						0.000							0.000			
4L25 Capital expenditure purpose - WATER additional line 6 [Other categories]	Em	3						0.000							0.000			
4L26 Capital expenditure purpose - WATER additional line 7 [Other categories]	Em	3						0.000							0.000			
4L27 Capital expenditure purpose - WATER additional line 8 [Other categories]	Em	3						0.000							0.000			
4L28 Capital expenditure purpose - WATER additional line 9 [Other categories]	Em	3						0.000							0.000			
4L29 Capital expenditure purpose - WATER additional line 10 [Other categories]	Em	3						0.000							0.000			
4L30 Capital expenditure purpose - WATER additional line 11 [Other categories]	Em	3						0.000							0.000			
4L31 Capital expenditure purpose - WATER additional line 12 [Other categories]	Em	3						0.000							0.000			
4L32 Capital expenditure purpose - WATER additional line 13 [Other categories]	Em	3						0.000							0.000			
4L33 Capital expenditure purpose - WATER additional line 14 [Other categories]	Em	3						0.000							0.000			
4L34 Capital expenditure purpose - WATER additional line 15 [Other categories]	Em	3						0.000							0.000			
4L35 Total enhancement capital expenditure	Em	3	0.000	1.417	0.000	0.000	9.146	15.448	26.011	0.000	1.589	0.000	0.000	10.465	15.404			

Key to cells:

- Input cell
- Calculation cell

Please refer to RAG 4.07 - Guideline for the table definitions in the annual performance report for the reporting year 2017-18

Additional Guidance
Where a quality enhancement scheme (or the proportionally allocated component of a quality enhancement scheme) has more than one cost driver, companies should allocate the expenditure attributable to the primary driver to the relevant line 1 to 24. Any net additional cost for delivering any further drivers should be included in the relevant line.

4P - Non-financial data for WR, WT and WD - Wholesale water

South Staffordshire / Cambridge Water

Data validation

For the 12 months ended 31 March 2018

Line	Line description	Units	DPs	Current year	Company commentary (if required)	Completion
A Water resources						
4P.1	Proportion of distribution input derived from impounding reservoirs	Progn 0 to 1	3	0.195		
4P.2	Proportion of distribution input derived from pumped storage reservoirs	Progn 0 to 1	3	0.332		
4P.3	Proportion of distribution input derived from river abstractions	Progn 0 to 1	3	0.000		
4P.4	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	Progn 0 to 1	3	0.472		
4P.5	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	Progn 0 to 1	3	0.000		
4P.6	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	Progn 0 to 1	3	0.000	validation error is due to rounding at 4th decimal place	Total of lines 4P.1 to 4P.6 do not equal 1.
4P.7	Number of impounding reservoirs	nr	0	1		
4P.8	Number of pumped storage reservoirs	nr	0	1		
4P.9	Number of river abstractions	nr	0	0		
4P.10	Number of groundwater works excluding managed aquifer recharge (MAR) water supply schemes	nr	0	42		
4P.11	Number of artificial recharge (AR) water supply schemes	nr	0	0		
4P.12	Number of aquifer storage and recovery (ASR) water supply schemes	nr	0	0		
4P.13	Total number of sources	nr	0	44		
4P.14	Total number of water reservoirs	nr	0	2		
4P.15	Total capacity of water reservoirs	MI	0	21206		
4P.16	Total number of intake and source pumping stations	nr	0	44		
4P.17	Total number of raw water transfer stations	nr	0	2		
4P.18	Total capacity of intake and source pumping stations	kW	0	6185		
4P.19	Total capacity of raw water transfer pumping stations	kW	0	4120		
4P.20	Total length of raw water mains and conveyors	km	2	93.15		
4P.21	Average pumping head – resources	m.hd	2	30.09		
4P.22	Average pumping head – raw water transport	m.hd	2	21.58		
B Water treatment						
4P.23	Total water treated at all SW simple disinfection works	MI/d	2	0.00		
4P.24	Total water treated at all SW1 works	MI/d	2	0.00		
4P.25	Total water treated at all SW2 works	MI/d	2	0.00		
4P.26	Total water treated at all SW3 works	MI/d	2	0.00		
4P.27	Total water treated at all SW4 works	MI/d	2	0.00		
4P.28	Total water treated at all SW5 works	MI/d	2	202.82		
4P.29	Total water treated at all SW6 works	MI/d	2	0.00		
4P.30	Total water treated at all GW simple disinfection works	MI/d	2	18.29		
4P.31	Total water treated at all GW1 works	MI/d	2	0.00		
4P.32	Total water treated at all GW2 works	MI/d	2	85.49		
4P.33	Total water treated at all GW3 works	MI/d	2	9.92		
4P.34	Total water treated at all GW4 works	MI/d	2	39.44		
4P.35	Total water treated at all GW5 works	MI/d	2	28.77		
4P.36	Total water treated at all GW6 works	MI/d	2	0.00		
4P.37	Total water treated at more than one type of works	MI/d	2	0.00		
4P.38	Total number of SW simple disinfection works	nr	0	0		
4P.39	Total number of SW1 works	nr	0	0		
4P.40	Total number of SW2 works	nr	0	0		
4P.41	Total number of SW3 works	nr	0	0		
4P.42	Total number of SW4 works	nr	0	0		
4P.43	Total number of SW5 works	nr	0	2		
4P.44	Total number of SW6 works	nr	0	0		
4P.45	Total number of GW simple disinfection works	nr	0	7		
4P.46	Total number of GW1 works	nr	0	1		
4P.47	Total number of GW2 works	nr	0	16		
4P.48	Total number of GW3 works	nr	0	2		
4P.49	Total number of GW4 works	nr	0	13		
4P.50	Total number of GW5 works	nr	0	2		
4P.51	Total number of GW6 works	nr	0	0		
4P.52	Number of treatment works requiring remedial action because of raw water deterioration	nr	0	0		
4P.53	Zonal population receiving water treated with orthophosphate	000	3	1669.155		
4P.54	Average pumping head – treatment	m.hd	2	1.99		
C Water distribution						
4P.55	Total length of potable mains as at 31 March	km	1	8490.9		
4P.56	Total length of mains relined	km	1	0.0		
4P.57	Total length of mains renewed	km	1	57.3		
4P.58	Total length of new mains	km	1	54.7		
4P.59	Potable water mains (<320mm)	km	1	7630.7		
4P.60	Potable water mains 320mm - 450mm	km	1	239.3		
4P.61	Potable water mains 450mm - 610mm	km	1	303.9		
4P.62	Potable water mains > 610mm	km	1	316.8		
4P.63	Total length of non-potable and partially treated main for supplying customers	km	1	75.1		
4P.64	Total length of non-potable and partially treated main for treatment	km	1	0.0		
4P.65	Capacity of booster pumping stations	kW	0	32198		
4P.66	Capacity of service reservoirs	MI	0	464		
4P.67	Capacity of water towers	MI	0	11		
4P.68	Distribution input	MI/d	2	385.05		
4P.69	Water delivered (non-potable)	MI/d	2	0.00		
4P.70	Water delivered (potable)	MI/d	2	322.12		
4P.71	Water delivered (billed measured residential)	MI/d	2	93.16		
4P.72	Water delivered (billed measured business)	MI/d	2	75.58		
4P.73	Total leakage	MI/d	2	86.80		
4P.74	Distribution losses	MI/d	2	63.16		
4P.75	Water taken unbilled	MI/d	2	3.24		
4P.76	Number of lead communication pipes	nr	0	154776		
4P.77	Number of galvanised iron communication pipes	nr	0	1450		
4P.78	Number of other communication pipes	nr	0	413573		
4P.79	Number of booster pumping stations	nr	0	74		
4P.80	Total number of service reservoirs	nr	0	58		
4P.81	Number of water towers	nr	0	14		
4P.82	Total length of mains laid or structurally refurbished pre-1880	km	1	114.6		
4P.83	Total length of mains laid or structurally refurbished between 1881 and 1900	km	1	107.7		
4P.84	Total length of mains laid or structurally refurbished between 1901 and 1920	km	1	327.9		
4P.85	Total length of mains laid or structurally refurbished between 1921 and 1940	km	1	1075.2		
4P.86	Total length of mains laid or structurally refurbished between 1941 and 1960	km	1	1048.8		
4P.87	Total length of mains laid or structurally refurbished between 1961 and 1980	km	1	2036.6		

4P.88	Total length of mains laid or structurally refurbished between 1981 and 2000	km	1	2160.7
4P.89	Total length of mains laid or structurally refurbished post 2001	km	1	1619.4
4P.90	Average pumping head – distribution	m.hd	2	131.38

D	Band Disclosure (nr)			
4P.91	WTWs in size band 1	Nr	0	14
4P.92	WTWs in size band 2	Nr	0	7
4P.93	WTWs in size band 3	Nr	0	12
4P.94	WTWs in size band 4	Nr	0	3
4P.95	WTWs in size band 5	Nr	0	3
4P.96	WTWs in size band 6	Nr	0	0
4P.97	WTWs in size band 7	Nr	0	2
4P.98	WTWs in size band 8	Nr	0	0

E	Band Disclosure (%)			
4P.99	Proportion of Total DI band 1	%	1	3.1%
4P.100	Proportion of Total DI band 2	%	1	5.1%
4P.101	Proportion of Total DI band 3	%	1	17.6%
4P.102	Proportion of Total DI band 4	%	1	6.6%
4P.103	Proportion of Total DI band 5	%	1	14.8%
4P.104	Proportion of Total DI band 6	%	1	0.0%
4P.105	Proportion of Total DI band 7	%	1	52.8%
4P.106	Proportion of Total DI band 8	%	1	0.0%

Key to cells:

Input cell

Calculation cell

Please refer to RAG 4.07 - Guideline for the table definitions in the annual performance report for the reporting year 2017-18**Treatment type guidance**

This section covers the proportion of distribution input derived from works falling into each category of water treatment and the numbers of works in each category as detailed in the table.

For both groundwater and surface water, a works is here defined as an individual location which receives raw or partially treated water for treatment (excluding secondary disinfection) and direct delivery to customers. For the avoidance of doubt:

- if the output of a site needs to be blended so as to be come potable, then that site in itself is not defined as a works. However, where the total treatment process is split between a number of sites, The DI entering treated distribution should be split pro rata between bands based on the volumes treated at the individual sites.

- the pre-aeration of deep borehole water is included in category SD, correction

- Companies should include in Lines 38-53 water treatment works that have not been used in the year but have not been decommissioned and state in their commentary any instances where this is the case.

The categories of treatment types are:	Examples
SD: Works providing simple disinfection only;	<ul style="list-style-type: none"> • Marginal chlorination • Pre-aeration
W1: Simple disinfection plus simple physical treatment only;	<ul style="list-style-type: none"> • Rapid gravity filtration • Slow sand filtration • Pressure filtration
W2: Single stage complex physical or chemical treatment;	<ul style="list-style-type: none"> • Super chlorination • Coagulation • Flocculation • Biofiltration • pH correction • Softening
W3: More than one stage of complex treatment; but excluding processes in W4, W5 or W6.	
W4: Single stage complex physical or chemical treatment with significantly higher operating costs than in W2/W3;	<ul style="list-style-type: none"> • Membrane filtration (excluding desalination) • Ozone addition • Activated carbon / pesticide removal • UV treatment • Arsenic removal • Nitrate removal
W5: More than one stage of complex, high cost treatment;	
W6: Works with one or more very high cost processes;	<ul style="list-style-type: none"> • Desalination • Re-use

Band Guidance

Size Band	Distributed Input MI/d
Band 1	< 2
Band 2	≤ 2 & < 4
Band 3	≤ 4 & < 8
Band 4	≤ 8 & < 16
Band 5	≤ 16 & < 32
Band 6	≤ 32 & < 64
Band 7	≤ 64 & < 128
Band 8	≥ 128

4Q - Non-financial data - Properties, population and other - Wholesale Staffordshire / Cambridge Water

Data validation

For the 12 months ended 31 March 2018

Line description	Units	DPs	Current year	Company commentary (if required)	Completion
A Properties and population					
4Q.1 Residential properties billed for measured water (external meter)	000	3	211.502		
4Q.2 Residential properties billed for measured water (not external meter)	000	3	78.254		
4Q.3 Business properties billed measured water	000	3	34.557		
4Q.4 Residential properties billed for unmeasured water	000	3	380.905		
4Q.5 Business properties billed unmeasured water	000	3	3.539		
4Q.6 Total business connected properties at year end	000s	3	42.627		
4Q.7 Total residential connected properties at year end	000s	3	693.231		
4Q.8 Total connected properties at year end	000	3	735.858		
4Q.9 Number of residential meters renewed	000	3	5.628		
4Q.10 Number of business meters renewed	000s	3	0.853		
4Q.11 Number of meters installed at request of optants	000	3	6.163		
4Q.12 Number of selective meters installed	000	3	0.000		
4Q.13 Total number of new business connections	000	3	0.236		
4Q.14 Total number of new residential connections	000	3	6.656		
4Q.15 Total population served	000	3	1669.329		
4Q.16 Number of business meters (billed properties)	000	3	39.694		
4Q.17 Number of residential meters (billed properties)	000	3	305.341		
4Q.18 Company area	km2	0	2672		
B Other					
4Q.19 Number of lead communication pipes replaced for water quality	nr	0	205		
4Q.20 Total supply side enhancements to the supply demand balance (dry year critical / peak conditions)	MI/d	2	0.00		
4Q.21 Total supply side enhancements to the supply demand balance (dry year annual average conditions)	MI/d	2	0.00		
4Q.22 Total demand side enhancements to the supply demand balance (dry year critical / peak conditions)	MI/d	2	0.17		
4Q.23 Total demand side enhancements to the supply demand balance (dry year annual average conditions)	MI/d	2	0.17		
4Q.24 Energy consumption - network plus	kWh	0	107336534		
4Q.25 Energy consumption - water resources	MWh	0	20724863		
4Q.26 Energy consumption - wholesale	MWh	0	128061397		
4Q.27 Peak factor	%	2	115.68%		
4Q.28 Mean Zonal Compliance	%	2	99.94%		
4Q.29 Volume of Leakage above or below the sustainable economic Level	MI	3	2.760		

Key to cells:

	Input cell
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	Calculation cell
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Please refer to RAG 4.07 - Guideline for the table definitions in the annual performance report for the reporting year 2017-18**Additional guidance**

Lines 22 and 23 should exclude any costs incurred by the retail business unit. All demand management savings delivered in the reporting year should be included (whether funded as Lines 4Q.24, 4Q.25 and 4Q.26 relate to the energy costs associated with operating costs only. For consistency with the APR (Line 2B.1) this line should include all energy costs (including electricity, gas and fuel for vehicles, plant and machinery). These lines are intended to capture energy consumed; energy exported should not be included. Energy consumption should be allocated between lines 4Q.25 and 4Q.26 in a way that is consistent with the accounting separation units, i.e. 'network +' includes raw water distribution, water treatment and treated water distribution (in line with Ofwat's Water 2020 decisions document (May 2016)).

Based on UKWIR report 06/WR/01/7 ("Peak water demand forecasting methodology"), which says that the calculation of peaking factors will depend on circumstances such as a company's asset base and the specific drivers of peak demand, we will allow companies to use an alternative formula that is appropriate to them and explain their formula in the commentary.

We will change the definition as follows: Peaking factor is the ratio of maximum to average consumption. Average consumption need to be representative and need not be confined to the average consumption in the year. The duration over which maximum daily consumption is measured will be at least one week and unlikely to be more than a month.

4V - Operating cost analysis - water resources

South Staffordshire / Cambrid Data validation

For the 12 months ended 31 March 2018

Line	Item description	Unit	DPs	Impounding Reservoir	Pumped Storage	River Abstractions	Groundwater, excluding MAR water supply schemes	Artificial Recharge (AR) water supply schemes	Aquifer Storage and Recovery (ASR) water supply schemes	Total	Company commentary (if required)	Completion
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Water resources

A Opex analysis												
4V.1	Power	£m	3	0.000	0.000	0.866	1.158	0.000	0.000	2.023		
4V.2	Income Treated as negative expenditure	£m	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
4V.3	Local authority and Cumulo rates	£m	3	0.087	0.000	0.002	0.072	0.000	0.000	0.162		
4V.4	Other direct operating expenditure	£m	3	0.694	0.000	0.392	2.573	0.000	0.000	3.660		
4V.5	Other indirect operating expenditure	£m	3	0.307	0.000	0.009	0.257	0.000	0.000	0.573		
4V.6	Total operating expenditure (excluding 3rd party)	£m	3	1.088	0.000	1.269	4.060	0.000	0.000	6.417	This total reconciles to 4D.9	
4V.7	Depreciation	£m	3	0.222	0.000	0.000	0.038	0.000	0.000	0.260		
4V.8	Total operating costs (excluding 3rd party)	£m	3	1.310	0.000	1.269	4.098	0.000	0.000	6.677	This total does not reconcile to 4D.9 because depreciation is not included in 4D.9	

Line 4V.8 does not equal line 4D.9 for water resources, please provide reasoning and reconciliation in your commentary

Line	Item description	Unit	DPs	Water resources	Raw water distribution	Water treatment	Treated water distribution	Total
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B Other expenditure - wholesale water

4V.9	Employment costs - directly allocated	£m	3	0.488	0.084	1.438	6.359	8.369
4V.10	Employment costs - indirectly allocated	£m	3	0.309	0.080	0.480	2.413	3.282
4V.11	Number FTEs consistent with 4V.9 above	Nr	0	11	1	30	165	208.110
4V.12	Number FTEs consistent with 4V.10 above	Nr	0	2	1	5	26	33.236
4V.13	Costs associated with Traffic Management Act	£m	3	0.000	0.000	0.000	0.115	0.115

C Service charges

4V.14	Canal & River Trust service charges and discharge consents	£m	3	0.000	0.000	0.000	0.000	0.000
4V.15	Environment Agency service charges/ discharge consents	£m	3	2.900	0.000	0.028	0.016	2.944
4V.16	Other service charges / permits	£m	3	0.065	0.000	0.039	0.022	0.127

4V.17	Statutory water softening	£m	3	0.000	0.000	0.000	0.000	0.000
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Key to cells:

Input cell

Calculated value

Please refer to RAG 4.07 - Guideline for the table definitions in the annual performance report for the reporting year 2017-18