Accent

PJM economics

Outcome Delivery Incentive Research: Main Survey Fieldwork

Stage 3 report

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Introduction

Water companies relied heavily on individually-conducted willingness to pay (WTP) research to shape their business plans for the 2014 and 2019 water price reviews (PR14, PR19). This resulted in a high degree of variability in WTP results that were thought to be caused by differences in the design, quality and approach across the industry rather than being led by variances in customer views.

In response, Ofwat and CCW instigated a programme of collaborative industry-wide research ahead of the 2024 water price review (PR24) with the aim of eliminating this variability and ensuring a common basis for the setting of outcome delivery incentive (ODI) rates for the common performance commitments (PC) anticipated to be in place for PR24. Within this programme of collaborative work, companies and key stakeholders were consulted on the research through regular steering group meetings. (For further details regarding the context of this research, and the intended application of the results, see Ofwat, 2022, Creating tomorrow together: Our final methodology for PR24, December 2022)

Accent and PJM Economics were commissioned by Ofwat and CCW initially to design and develop the survey instrument for the collaborative research. The core outcomes from this study were a final report on the design of the methodology (Accent-PJM, 2022a) and a final report covering the testing and development work undertaken to assure the survey instrument for nationwide implementation (Accent-PJM, 2022b). Subsequently, Ofwat and CCW commissioned Accent and PJM Economics to deliver the fieldwork for the main survey on behalf of the companies, to cover both household and non-household populations, using the research instrument developed in the previous study.

This document is the final report on the main fieldwork stage. It describes the sample designs and survey methodologies used for both household and non-household populations, reports on the performance of these methodologies in executing the sample designs, describes the calculation of weights, and details the steps taken to anonymise the data in advance of sharing it with Ofwat, CCW and the water companies. The questionnaires used in the surveys are contained in Appendices A and D; the service issues tested in the research are included in Appendix B; Appendix C contains the survey invitations and reminders used; and finally, Appendix E contains supplementary tables comparing unweighted and weighted sample characteristics to external population statistics.

Household survey

Due to the balance of pros and cons to alternative approaches, it was agreed to use two sampling approaches within the household survey:

- PAF: Minimum 50% sample for each company from the Postcode Address File (PAF)

  - PAF participants were sent a letter and invited to complete the survey online, or by post
- Panel: Maximum 50% online commercial panel for each company

These limits allowed for some divergence across companies based on the amount of panel sample available, but limited this divergence to ensure the ability to test for differences in findings between Panel and PAF samples and control for any differences found at the company level.

Sample sizes were set within water-wastewater stratum such that there would, in general, be a minimum of 500 household interviews per water company area in total. Water companies were then given opportunity to pay an additional cost per interview to boost the sample of their company's customers, which a number of companies chose to do.

The household survey interviews took place between July 2022 and September 2022.

The Panel survey achieved 5,338 interviews; the PAF survey achieved 7,229 interviews, of which the vast majority completed the survey online. This comprised the total household sample achieved of 12,567 interviews (against a target of 12,416). All sample size targets for water companies and wastewater companies were achieved.

The average completion times for the household survey were as follows:

Panel: 12 minutes 54 seconds.
PAF: 19 minutes 16 seconds.

PAF participants hence took substantially longer to complete the survey than those from the Panel sample. This could be because Panel participants will generally be more experienced at completing surveys; however, it could also be because Panel participants gave the survey less attention than those from the PAF, which could suggest a lower quality of response.

A further notable finding was that, despite not having the quota control that Panel samples are able to have, comparisons of demographic characteristics between the PAF and Panel samples and the Census suggest that both methods performed roughly the same in terms of their ability to obtain a representative sample. Thus, sensitivity to variations in response rates does not appear to be a significant weakness of the PAF method.

Non-household survey

In a first for the water sector in England, the sampling approach and survey methodology for the non-household survey made use of MOSL's CMOS database of all registered non-household supply points in England, combined with a retailer-provided dataset of contact details assembled for the purposes of this study. This provided a comprehensive and detailed sampling frame for allowing the selection of a random sample of non-household premises in England stratified by water and wastewater company, and size. Moreover,

it allowed customers to be contacted by email, telephone and/or post without compromising the sample integrity.

For Wales, Dwr Cymru's and Hafren Dyfrdwy's own customer data were used to sample and contact customers. These data were broadly comparable to the combined MOSL-retailer sampling frame, meaning that the approach taken in Wales to sampling and fieldwork was almost identical to the approach taken in England.

The target non-household sample sizes were calculated for each water-wastewater company stratum in a similar way as for households. But with allocations based on total NHH water usage by stratum. A minimum of 200 non-household interviews was set per stratum rather than 500 in the case of households. Strata were further decomposed by size so that larger users had a higher chance of selection within the sample than smaller users.

Where there were multiple premises per contact in the selected sample, one record was selected at random to serve as the primary premises, which would be asked about in the survey. However, the additional records were retained for potential inclusion in the sample subject to how the participant answered a supplementary question, which was added to the questionnaire in order to make best use of cases where relative impacts and required compensation levels might be expected to be the same, or similar, across different sites for which the contact was responsible.

If, and only if, a participant agreed that the impacts and required compensation levels might be expected to be the same, or similar, the records retained for potential inclusion for that contact were added to the achieved sample as additional observations. These were recorded with the same impact and required compensation choice responses as for the primary premises asked about in the survey, but with the correct stratum associated to them based on details held about the additional premises from the sampling frames

The non-household survey interviews took place between August 2022 and October 2022. This period was approximately one month later than the corresponding fieldwork period for households due to the fact that the sample design and execution took longer to develop for non-households than for households.

The non-household survey achieved 3,669 interviews with unique participants, which covered 3,838 unique business premises once multi-site response had been counted. This slightly exceeded the target sample size of 3,728 business premises.

Within the full sample, 55% were contacted by email, 27% by post, and 18% by telephone. Those contacted by email and post were invited to complete the survey online; those contacted by telephone also completed the survey by telephone.

The average completion times for the non-household survey, by mode, were as follows:

Telephone: 19 minutes 14 seconds.
Online completion:

- Recruited by e-mail: 15 minutes 11 seconds.

- **Recruited by post:** 15 minutes 27 seconds

The telephone survey took somewhat longer to complete than the online self-complete survey, but there was no substantial difference in completion times on the online self-complete survey due to differences in the mode by which participants were recruited.

Compared to population comparators, the achieved sample was somewhat overweighted to smaller users at the expense of larger users. With regard to industry sector, the data suggests a mixed result, with over-representation of some industries, including Accommodation and Food Service Activities most notably, at the expense of under-representation of others, including Construction, Wholesale and Retail Trade, Professional, Scientific and Technical Activities, and Administrative and Support Service Activities.

Weights were generated to correct for departures from the optimal proportions within company areas using BEIS (2022) data on regional employment size distributions.

Conclusions

The survey methodology adopted for this stage of the Collaborative ODI research introduced a number of innovations in the context of the England and Wales water sector.

Further analysis during the next phase of the research (Analysis and modelling) will reveal whether there are any further differences between PAF and Panel samples with respect to survey quality and/or results. On the basis of the survey performance and initial analysis, however, the PAF approach appears to be at least a valid alternative worth considering for future household research.

With regard to the non-household survey, although the approach took somewhat longer than ideal to develop, which led to a few weeks' delay in launching the survey, no significant problems emerged in implementing the approach, and first results from the non-household survey suggest that it performed well at achieving the target sample sizes by stratum. Consequently, the approach appears to have much to recommend it as the basis for sampling and surveying non-household customers in future where possible.

Glossary

CMOS	Central Market Operating System
E&W	England and Wales
HH	Household
MOSL	Market Operator Services Ltd
NHH	Non-household
ODI	Outcome delivery incentive
PAF	Postcode Address File
PC	Performance commitment
PR14	The 2014 water price review
PR19	The 2019 water price review
PR24	The 2024 water price review
SEG	Socioeconomic grade
SPID	Supply point identifier
WTA	Willingness to accept
WTP	Willingness to pay

1 Introduction

1.1 Background and objectives

Water companies relied heavily on individually-conducted willingness to pay (WTP) research to shape their business plans for the 2014 and 2019 water price reviews (PR14, PR19). This resulted in a high degree of variability in WTP results that were thought to be caused by differences in the design, quality and approach across the industry rather than being led by variances in customer views.

In response, Ofwat and CCW instigated a programme of collaborative industry-wide research ahead of the 2024 water price review (PR24) with the aim of eliminating this variability and ensuring a common basis for the setting of outcome delivery incentive (ODI) rates for the common performance commitments (PC) anticipated to be in place for PR24. Within this programme of collaborative work, companies and key stakeholders were consulted on the research through regular steering group meetings. (For further details regarding the context of this research, and the intended application of the results, see Ofwat, 2022, Creating tomorrow together: Our final methodology for PR24, December 2022)

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The requirements for the fieldwork stage included the need to draw a sample to an agreed specification, and deliver circa 12,000 household (HH) interviews and 3,700 non-household (NHH) interviews, which include businesses, charities and public sector organisations. Further details regarding the sample designs and survey methodologies were specified in advance; however, these are discussed in Sections 2 and 3 for households and non-households respectively.

1.2 Report structure

This document is the final report on the main fieldwork stage. It describes the sample designs and survey methodologies used for both household and non-household populations, reports on the performance of these methodologies in executing the sample designs, describes the calculation of weights, and details the steps taken to anonymise the data in advance of sharing it with Ofwat, CCW and the water companies. The

questionnaires used in the surveys are contained in Appendices A and D; the service issues tested in the research are included in Appendix B; Appendix C contains the survey invitations and reminders used; and finally, Appendix E contains supplementary tables comparing unweighted and weighted sample characteristics to external population statistics.

2 Household survey

This section provides details on the following aspects pertaining to the household survey:

- Sample design
- Survey methodology
- Sample characteristics
- Anonymisation
- Weighting

2.1 Sample design

Target population

The target population of the household survey was defined via the following key requirements:

- Households would be the unit of observation, in the sense that the survey would be seeking to measure the required compensation for the household due to service issue impacts, rather than individual-level compensation.
- Any adult member of a household could potentially be recruited, with the only constraint being that they should be willing and able to respond on behalf of their household.
- Non-bill paying households, e.g. where the bill was paid by the landlord, would be in scope for the survey, while those paying the bill, e.g. the landlord, would not be in scope to answer on the non-bill paying household's behalf.
- Post-sampling, households would be excluded if they were not connected to mains water and sewerage services, or if they worked in the water sector or market research.

Survey modes and sampling frames

The preceding stages of the study had concluded that the sample design should be constructed from two sampling frames:

- An online commercial panel
- The Postcode Address File (PAF) of all households in England and Wales

The online commercial panel would naturally be used to support online completion of the survey questionnaire, whilst the PAF would be used primarily also for online completion, but would also support a paper survey for those that did not have easy access to the internet to ensure the research was inclusive.

The advantages and disadvantages of these approaches (Panel and PAF) were set out and deliberated within Stage 1 of the study, and both approaches were pilot tested within Stage 2 of the study.

In summary, the key considerations with respect to the use of online panels versus a PAF sampling frame included:

- Online panels are typically cost effective, quick and can return samples tailored to be representative on demographics through the use of quotas (age, gender, Socio-economic grade (SEG), region, urban/rural).

- By contrast, using the PAF to recruit households by post is more time consuming and expensive, and responses can vary by key demographics due to their sensitivity to people's willingness to respond.

- However, online panels are not a random sample from the target population, and are hence not necessarily representative on measures beyond the quota characteristics. For example:

  - Panel participants may be more cost sensitive, on average, because they regularly give up their time to complete surveys for a relatively small financial reward.
  - They may have been recruited based on particular unknown characteristics (e.g., Nectar card users), and this can be seen to be something of 'a black box'
  - Any inherent such issues/potential biases are not necessarily consistent between water company areas or between panels
  - They necessarily exclude people without access to the internet

  Moreover, the quality of response can be affected by survey fatigue as participants undertake a number of surveys on a regular basis.

  Additionally, the numbers of people on commercial panels are limited in the smallest company areas – hence feasible sample sizes are smaller than ideal, or require a different mix of research methods to bolster the shortfall which could lead to concerns over inter-company comparability.

- By contrast, the PAF allows for random probability sampling from the full target population and is hence more inclusive, and conforms to established principles of survey sampling.

  Moreover, sampling can be stratified geographically using the PAF method to ensure that samples are geographically representative within company area.

  There are also no practical limitations on the size of the sample that can be obtained within the smallest company areas, implying potentially more consistency across companies.

Due to the balance of pros and cons to both approaches, it was agreed to use both sampling approaches with the following bounds:

- Minimum 50% Postal (PAF) by company
- Maximum 50% online commercial panel by company

These limits allowed for some divergence across companies based on the amount of panel sample available, but limited this divergence to ensure the ability to test for differences in findings between Panel and PAF samples and control for any differences found at the company level.

Stratification by water and wastewater company

The core target outcomes from the research were to be the estimates of the value of service issue impacts at the level of water companies, in the case of water service issues, and at the level of wastewater companies in the case of wastewater service issues. It was therefore important that the sample size and structure should be controlled at the level of both water company area and wastewater company area so that each service issue impact could be reliably valued by representative samples from the populations of each relevant company. Since the boundaries of water and wastewater companies overlapped with one another, the sample was accordingly agreed to be stratified by the intersection of water and wastewater company.

Stratification was achieved via the use of Geographical Information System (GIS) software to map water and wastewater boundaries, provided by Ofwat, to Census Output Areas, and with Census 2011 data on populations by output area overlaid to calculate the distribution of the England and Wales population across water-wastewater strata. (At the time of sample design, Census 2021 data had not yet been released.)

This included some very small population cells, which we believed to be due to the inexact nature of the boundary shapefiles. It also included small suppliers such as Albion Water, Icosa, and Veolia Water Projects whose customers were not to be included in the Collaborative ODI research. After having removed these cells from the data, we were left with 31 water-wastewater supplier strata.

Sample sizes were set within water-wastewater stratum such that there would, in general, be a minimum of 500 household interviews per water company area in total. This number was arrived at via discussions between Accent-PJM, Ofwat and CCW, drawing on our collective experience and judgement regarding the size of the sample that would be appropriate given the importance of the results in the context of PR24 and the type of design being implemented.

Where multiple wastewater providers operated in a water company area, the target sample size of 500 was allocated to customers of those wastewater providers in proportion to the distribution of households in the population, as measured by the UK Census. For example, the SES Water sample was split 93:7 between Thames and Southern wastewater supply areas in line with the balance within the respective populations.

An exception to this rule was made in the case of Hafren Dyfrdwy – by far the smallest of the water and wastewater companies in England and Wales – on the grounds of proportionality. In this case, a minimum sample size of 350 was set for water customers.

Despite having a smaller sample size than other companies, the proportion of Hafren Dyfrdwy customers in the full England and Wales sample remained a great deal higher than the corresponding proportion in the population. It was also considered acceptable by all parties in this case to utilise responses from the other company in Wales, Dŵr Cymru, to assist with the estimation of results for Hafren Dyfrdwy customers if necessary to achieve reliable results.

Because there were 17 water companies but only 11 wastewater companies, this approach had the concomitant implication that there would, in most cases, also be a minimum of 500 household interviews per wastewater company area. However, this was not the case for Northumbrian Water, South West Water, or Hafren Dyfrdwy. For Hafren Dyfrdwy, again on the grounds of proportionality, a minimum sample size of 150 was set for wastewater customers. For Northumbrian Water and South West Water, the wastewater samples were boosted to a minimum of 500 in each case, as follows:

- For South West Water, 100% of the wastewater customers were also water customers and so there was only one stratum cell to boost – dual-supply South West Water household customers increased from 395 to 500 interviews.

- For Northumbrian Water, the vast majority of wastewater customers were also supplied water by the same company, but there were a small percentage in Hartlepool supplied water by Anglian Water. In this case, sample sizes of both strata were boosted in line with their existing proportions: from 291 to 483 Northumbrian Water customers and from 10 to 17 Anglian Water customers.

This approach to the sample design created a base sample size of 8,655 household interviews in total.

Water companies were then given opportunity to pay an additional cost per interview to boost the sample of their company's customers, which a number of companies chose to do. The additional (water-waste) boosts included:

- Dŵr Cymru-Dŵr Cymru was boosted from 500 to 800
- Northumbrian Water-Anglian Water was boosted from 145 to 385
- Northumbrian Water-Thames Water was boosted from 65 to 385
- Severn Trent Water-Severn Trent Water was boosted from 483 to 983
- South Staffs Water-Anglian Water was boosted from 99 to 200
- Southern Water-Southern Water was boosted from 477 to 777
- Thames Water-Thames Water was boosted from 500 to 1,000
- United Utilities-United Utilities was boosted from 500 to 2,000

This resulted in an increase of the target sample size from 8,655 to 12,416 in total.

Table 1 provides the full breakdown of the target household sample by water and wastewater company. The proportions in each cell were not representative of the population, in general, for the reasons set out above. Accordingly, design weights were needed to allow for estimation of population statistics at the level of individual water and wastewater companies, as well as for England, Wales, and England & Wales. (See Section 2.5 for details concerning these weights.)

Table 1: Target Household Sample Size by Water and Wastewater Company Stratum

		Wastewater											
		Anglian Water	Dŵr Cymru	Hafren Dyfrdwy	Northumbrian Water	Severn Trent Water	South West Water	Southern Water	Thames Water	United Utilities	Wessex Water	Yorkshire Water	**Grand Total**
Water	Affinity Water	54						24	422				**500**
	Anglian Water	469			17	21							**507**
	Bristol Water										500		**500**
	Dŵr Cymru		800										**800**
	Hafren Dyfrdwy		200	150									**350**
	Northumbrian Water	385			483				385				**1,253**
	Portsmouth Water							500					**500**
	SES Water							36	464				**500**
	Severn Trent Water					983						17	**1,000**
	South East Water							304	196				**500**
	South Staffs Water	200				401							**601**
	South West Water						500	16			89		**605**
	Southern Water							777	23				**800**
	Thames Water								1000				**1,000**
	United Utilities									2000			**2,000**
	Wessex Water										500		**500**
	Yorkshire Water					15						485	**500**
	Grand Total	**1,108**	**1,000**	**150**	**500**	**1,420**	**500**	**1,657**	**2,490**	**2,000**	**1,089**	**502**	**12,416**

2.2 Survey methodology

Fieldwork period

The household survey interviews took place between July 2022 and September 2022.

Panel approach

For the Panel approach, two commercial panels were used (Kantar and Dynata). Each panel was initially given a maximum target of 25% of the target for each water-wastewater stratum and a set of demographic quotas for each stratum. After an initial period of time, the overall maximum Panel target of each stratum was opened up to both panels to fill simultaneously.

Unlike with the PAF approach, the Panel survey required a process for identifying the participant's water and wastewater providers. Upon entering the survey, Panel participants were asked to provide the first part of their postcode (the district). So, for example, if the full postcode was ME1 3BN, this would be ME1 3. The questionnaire software then used a look-up table to identify the water and wastewater service company and asked the participant if they agreed with that. If not, or if the look-up indicated that more than one water and/or wastewater company supplied the postcode district stated, the participant was provided with a list of water and/or wastewater companies and asked to identify the relevant providers. If they typed in another company, said don't know or that none provided the service (for example because they had a septic tank) then the interview was closed.

Quotas were set for the panels on a stratum by stratum basis, designed to a target that the Panel contribution should bring the overall PAF-Panel sample closer to the Census demographic profile than the PAF sample on its own, given the expected contribution from the PAF sample based on pilot statistics.

For England and Wales as a whole, the following table shows, by demographic, the Census 2021 statistics, Pilot PAF sample statistics, the Panel ideal outcome that would be expected to lead to a representative composition of the combined PAF-Panel sample, and the average panel quota.

Table 2: Quotas for Household Panel Survey (E&W Average)

	Census 2021 %	Pilot PAF %	Panel ideal outcome %	Panel main maximum quota %
Age				
18-29	19	10	28	Unlimited
30-64	58	62	55	61
65 or older	23	29	18	28
Gender				
Male	48	52	45	51
Female	52	48	57	60
Base		**594**		

Bases for Pilot PAF: Age=601; 594 (Excludes non-responses)

Progress was monitored during fieldwork and additional invitations issued to target specific areas as appropriate.

The interviews took place between 01/07/22 and 25/07/22.

Table 3 shows the interviews achieved via the Panel approach by water-wastewater stratum alongside the maximum target for that stratum. This, to recall, was set at 50% of the full sample design target, with the remainder required to come from the PAF approach.

Overall, the Panel survey yielded 5,338 completed interviews, which represented 43% of the full survey target of 12,416 interviews.

Table 3: Panel survey interviews achieved against target, by water-wastewater stratum

Water-wastewater Stratum	Max target (=50% of full sample)	Achieved interviews
001. CLN: Affinity Water - SWR: Anglian Water	27	21
106. CLN: South East Water - SWR: Southern Water	152	151
107. CLN: South East Water - SWR: Thames Water	98	85
111. CLN: South Staffs Water - SWR: Anglian Water	100	23
115. CLN: South Staffs Water - SWR: Severn Trent Water	201	186
012. CLN: Anglian Water - SWR: Anglian Water	235	235
127. CLN: South West Water - SWR: South West Water	250	242
128. CLN: South West Water - SWR: Southern Water	8	5
131. CLN: South West Water - SWR: Wessex Water	45	37
139. CLN: Southern Water - SWR: Southern Water	389	369
140. CLN: Southern Water - SWR: Thames Water	12	9
015. CLN: Anglian Water - SWR: Northumbrian Water	9	5
151. CLN: Thames Water - SWR: Thames Water	500	488
016. CLN: Anglian Water - SWR: Severn Trent Water	11	8
163. CLN: United Utilities - SWR: United Utilities	1,000	970
175. CLN: Wessex Water - SWR: Wessex Water	250	235
181. CLN: Yorkshire Water - SWR: Severn Trent Water	8	3
187. CLN: Yorkshire Water - SWR: Yorkshire Water	243	246
032. CLN: Bristol Water - SWR: Wessex Water	250	215
035. CLN: Dŵr Cymru - SWR: Dŵr Cymru	400	383
046. CLN: Hafren Dyfrdwy - SWR: Dŵr Cymru	100	25
047. CLN: Hafren Dyfrdwy - SWR: Hafren Dyfrdwy	75	12
056. CLN: Northumbrian Water - SWR: Anglian Water	193	107
059. CLN: Northumbrian Water - SWR: Northumbrian Water	242	234
063. CLN: Northumbrian Water - SWR: Thames Water	193	33
007. CLN: Affinity Water - SWR: Southern Water	12	9
073. CLN: Portsmouth Water - SWR: Southern Water	250	188
008. CLN: Affinity Water - SWR: Thames Water	211	166
084. CLN: SES Water - SWR: Southern Water	18	9
085. CLN: SES Water - SWR: Thames Water	232	146
093. CLN: Severn Trent Water - SWR: Severn Trent Water	492	485
099. CLN: Severn Trent Water - SWR: Yorkshire Water	9	8
Total	**6,208**	**5,338**

PAF approach

In order to apply the sample design using the PAF, GIS software was used to match water-wastewater stratum boundaries to postcodes, to produce a list of all addresses in England and Wales, with water and waste company providers appended. Full addresses were then sampled at random within each water-wastewater stratum using a minimum expected

conversion rate of 7.5%. This meant sampling a multiple of 1/0.075 addresses for each target completed interview required by the sample design. The conversion rate of 7.5% was based on findings from the pilot survey, which suggested that a response rate of around 10% was likely to be achievable, with some leeway in case the main stage response turned out to be lower than the pilot.

Letters were sent in tranches to the sampled addresses to invite them to complete the survey. Reminder letters were sent out as required, with no more than one reminder letter being sent to each household contacted.

The PAF did not include named addressees, so each letter was addressed to "The Occupier".

The letter was headed with Ofwat and CCW logos. It explained the purpose of the survey and additional information needed to fulfil GDPR requirements.

The letter included an online link and QR code as well as a unique ID code and PIN to be entered once the survey was accessed (to prevent multiple entries). A £10 incentive was offered to encourage participation in the form of a charitable donation (to WaterAid) or a voucher from a selection of leading retailers. Participants could choose to receive this via email or post.

Those unable, or who didn't wish, to respond online were offered the opportunity to request a paper version via a freephone number that customers could call and leave their name and unique ID and PIN to request a paper copy.

The inclusion of the unique ID number meant that non-responders could be sent a reminder letter.

For Welsh addresses, the invitation letter was double sided and sent in both English and Welsh. The Welsh text included a link to the Welsh language version of the online survey.

Letters were sent between 01/07/22 and 29/09/22, although the vast majority were sent in July and August. The reason for the prolonged time period of data collection was primarily driven by a few outlier areas with persistently poor/unpredictable responses (that warranted repeated additional mailings, often to achieve just a handful more interviews. At every stage the temptation to over-sample was resisted, due to the potential impact on participants of receiving a letter, responding promptly, only to find the survey closed. The need to co-ordinate with the Panel progress on a stratum by stratum basis was also a factor. The administration of paper surveys requested by participants also drew out the fieldwork period.

Appendix C contains the full set of initial and reminder letters used in the survey.

Table 4 below shows the number of households contacted and the number of resulting achieved interviews, by water-wastewater stratum. These figures include 132 postal responses, which were acquired from 403 participants that rang requesting a paper

version, of which 363 coherently left enough information for them to be mailed a survey (either an ID/PIN, or an address).

In total 86,543 households were invited by letter to contribute to the research. The overall response rate was 8.4%, which resulted in 7,229 completed interviews via the PAF method. This represented 58% of the full survey target of 12,416 interviews.

Table 4: PAF survey interviews achieved against contacted, by water-wastewater stratum

Water-wastewater stratum	Households contacted	Interviews achieved	Conversion rate
001. CLN: Affinity Water - SWR: Anglian Water	403	33	8.2%
106. CLN: South East Water - SWR: Southern Water	1,512	156	10.3%
107. CLN: South East Water - SWR: Thames Water	1,039	116	11.2%
111. CLN: South Staffs Water - SWR: Anglian Water	1,956	182	9.3%
115. CLN: South Staffs Water - SWR: Severn Trent Water	2,312	218	9.4%
012. CLN: Anglian Water - SWR: Anglian Water	2,518	240	9.5%
127. CLN: South West Water - SWR: South West Water	2,561	265	10.3%
128. CLN: South West Water - SWR: Southern Water	153	12	7.8%
131. CLN: South West Water - SWR: Wessex Water	665	52	7.8%
139. CLN: Southern Water - SWR: Southern Water	4,074	418	10.3%
140. CLN: Southern Water - SWR: Thames Water	208	15	7.2%
015. CLN: Anglian Water - SWR: Northumbrian Water	86	12	14.0%
151. CLN: Thames Water - SWR: Thames Water	6,939	524	7.6%
016. CLN: Anglian Water - SWR: Severn Trent Water	446	13	2.9%
163. CLN: United Utilities - SWR: United Utilities	10,748	1,058	9.8%
175. CLN: Wessex Water - SWR: Wessex Water	2,631	273	10.4%
181. CLN: Yorkshire Water - SWR: Severn Trent Water	223	11	4.9%
187. CLN: Yorkshire Water - SWR: Yorkshire Water	2,578	244	9.5%
032. CLN: Bristol Water - SWR: Wessex Water	2,654	296	11.2%
035. CLN: Dŵr Cymru - SWR: Dŵr Cymru	7,634	424	5.6%
046. CLN: Hafren Dyfrdwy - SWR: Dŵr Cymru	3,099	178	5.7%
047. CLN: Hafren Dyfrdwy - SWR: Hafren Dyfrdwy	2,913	135	4.6%
056. CLN: Northumbrian Water - SWR: Anglian Water	3,612	284	7.9%
059. CLN: Northumbrian Water - SWR: Northumbrian Water	2,549	251	9.8%
063. CLN: Northumbrian Water - SWR: Thames Water	6,791	355	5.2%
007. CLN: Affinity Water - SWR: Southern Water	243	15	6.2%
073. CLN: Portsmouth Water - SWR: Southern Water	3,269	319	9.8%
008. CLN: Affinity Water - SWR: Thames Water	3,150	259	8.2%
084. CLN: SES Water - SWR: Southern Water	395	28	7.1%
085. CLN: SES Water - SWR: Thames Water	3,841	322	8.4%
093. CLN: Severn Trent Water - SWR: Severn Trent Water	5,240	512	9.8%
099. CLN: Severn Trent Water - SWR: Yorkshire Water	101	9	8.9%
Total	**86,543**	**7,229**	**8.4%**

2.3 Sample characteristics

The following tables and statistics are intended to present a brief snapshot of the household sample, with a particular focus on comparison of the two sample approaches. A full analysis of the data is intended to be completed within the Analysis and Modelling phase of the study and will be reported therein.

Achieved sample sizes

The HH Panel survey achieved 5,338 interviews. The HH PAF survey achieved 7,229 interviews. This comprised the total HH sample achieved of 12,567 interviews (against a target of 12,416).

Table 5 shows the sample composition by water company and survey mode, including the proportion of the sample of each company area obtained via the Panel approach. As can be seen in this table, the Panel proportion varied somewhat due to differences in the availability of Panel sample across the company areas, but was generally in the range 30% to 50% except in the outlying case of Hafren Dyfrdwy where the proportion only reached 11%.

Table 5: Achieved sample sizes by survey mode and water company

Water company	Panel interviews	PAF interviews	Total interviews	Panel proportion
Affinity Water	196	307	503	39%
Anglian Water	248	265	513	48%
Bristol Water	215	296	511	42%
Hafren Dyfrdwy	37	313	350	11%
Northumbrian Water	374	890	1,264	30%
Portsmouth Water	188	319	507	37%
Severn Trent Water	493	521	1,014	49%
South East Water	236	272	508	46%
Southern Water	378	433	811	47%
South Staffordshire Water	209	400	609	34%
South West Water	284	329	613	46%
SES Water	155	350	505	31%
Thames Water	488	524	1,012	48%
United Utilities	970	1,058	2,028	48%
Welsh Water	383	424	807	47%
Wessex Water	235	273	508	46%
Yorkshire Water	249	255	504	49%
TOTAL	**5,338**	**7,229**	**12,567**	**42%**

Likewise, Table 6 shows these same statistics by wastewater company. Here, Hafren Dyfrdwy is an even more marked outlier with only 8% of the sample obtained via the Panel method. This again is due to the relatively small size of this company area, which constrained the size of the Panel sample achievable.

Table 6: Achieved sample sizes by survey mode and wastewater company

Wastewater company	Panel interviews	PAF interviews	Total interviews	Panel proportion
Anglian Water	386	739	1,125	34%
Hafren Dyfrdwy	12	135	147	8%
Northumbrian Water	239	263	502	48%
Severn Trent Water	682	754	1,436	47%
Southern Water	731	948	1,679	44%
South West Water	242	265	507	48%
Thames Water	927	1,591	2,518	37%
United Utilities	970	1,058	2,028	48%
Welsh Water	408	602	1,010	40%
Wessex Water	487	621	1,108	44%
Yorkshire Water	254	253	507	50%
TOTAL	**5,338**	**7,229**	**12,567**	**42%**

Survey completion times

The average completion times for the household survey were as follows:

Panel: 12 minutes 54 seconds.
PAF: 19 minutes 16 seconds.

PAF participants hence took substantially longer to complete the survey than those from the Panel sample.

Panel participants will generally be more experienced at completing surveys, and hence able to grasp what was required more easily. However, Panel participants may have given the survey less attention than those from the PAF, which could suggest a lower quality of response.

Demographics

The demographic profile of the two household samples is shown in Table 7 compared to Census statistics. Both samples were reasonably representative by Sex and Household size. However, both samples had an older profile than the Census, both had more SEG=AB than the population, with the Panel sample closer than the PAF, and both samples were skewed to White participants at the expense of ethnic minorities.

Urban/rural comparisons are only possible for the PAF sample as the Panel sample did not include the full postcode and so could not be reliably matched to urban/rural indicator data. In the case of this sample, however, the statistics matched the population very well.

Data for Sex, Age and SEG were used for weighting to ensure representativeness within individual company areas, as described in Section 2.5 below. Appendix E provides further tables at the individual company level comparing sample and population demographic profiles.

Table 7: Household demographics

	Census[1] %	PAF[2] %	Panel[2] %
Sex			
Male	49%	48%	46%
Female	51%	52%	54%
Age			
18-29	19%	9%	8%
30-64	58%	64%	60%
65 or older	23%	27%	32%
SEG[3]			
AB	23%	46%	30%
C1C2	52%	41%	46%
DE	25%	12%	24%
Urban/Rural[4]			
Urban	82%	81%	
Rural	18%	19%	
Ethnicity			
White	82%	89%	93%
Mixed	3%	2%	1%
Asian or Asian British	9%	5%	4%
Black or Black British	4%	2%	1%
Other ethnic group	2%	3%	1%
Household size			
1 or 2	64%	63%	69%
3 or 4	29%	31%	27%
5 or more	7%	6%	4%

Notes:
(1) Population statistics for Sex, Age, Ethnicity and Household size were obtained from 2021 Census data. Population statistics for SEG and Urban/Rural were obtained from 2011 Census data as 2021 data had not yet been released.
(2) Base sample size :12,567 (PAF:7,229 and Panel:5,338). Sample sizes for individual demographics exclude those that did not answer the relevant question.
(3) Population and sample statistics shown for adults aged under 65.
(4) Panel sample statistics unavailable for Urban/Rural as the full postcode was not known for these participants and so could not be reliably matched to urban/rural indicator data.

Vulnerability

The household sample was asked if they or another member of their household:

- was disabled or suffer from a debilitating illness
- had a learning difficulty
- relied on water for medical reasons
- was visually impaired (i.e. struggles to read even with glasses)
- was over the age of 75 years old
- spoke English as a second language
- was deaf or hard of hearing
- was a new parent

For 58% of the PAF sample and 62%of the Panel sample, none of these factors were stated as applying. The main ones that did apply were disability or suffering from a debilitating illness, aged over 75 year old, and deaf or hard of hearing for both samples.

Table 8: Vulnerability

	PAF %	Panel %
Disabled or suffers from a debilitating illness	12%	14%
Has a learning difficulty	3%	3%
Relies on water for medical reasons	6%	4%
Visually impaired (i.e. struggles to read even with glasses)	2%	2%
Over the age of 75 years old	11%	13%
Speaks English as a second language	7%	3%
Deaf or hard of hearing	7%	8%
A new parent	5%	2%
None of these statements apply	58%	62%
Prefer not to say	5%	3%
Base	**7,229**	**5,338**

The extent to which the household sample may have financial difficulties was also explored by asking which of the following statements they most agreed with:

- I can always afford to pay my household bills
- I can usually afford to pay my household bills
- I sometimes struggle to pay my household bills
- I usually struggle to pay my household bills
- I always struggle to pay for my household bills

The majority (52% PAF and 51% Panel) said they could always afford to pay their household bills. 5% of the PAF sample and 7% of the Panel sample said they usually or always struggled to pay their household bills.

Table 9: Financial vulnerability

	PAF %	Panel %
I can always afford to pay my household bills	52%	51%
I can usually afford to pay my household bills	27%	28%
I sometimes struggle to pay my household bills	12%	14%
I usually struggle to pay my household bills	3%	4%
I always struggle to pay for my household bills	2%	3%
Prefer not to say	5%	2%
Base	**7,229**	**5,338**

The degree of digital exclusion for the PAF sample was also explored by asking which of the following best described them:

- I have never used the internet
- I have used the internet but do not have regular access to it
- I have regular access to the internet

The Panel sample was not asked this as they necessarily had internet access to be panel members.

As shown below, 93% of the PAF sample said they had regular access to the internet; 3% said they had used the internet but did not have regular access to it; 1% said they had never used the internet and 3% preferred not to say.

- I have never used the internet 1%
- I have used the internet but do not have regular access to it 3%
- I have regular access to the internet 93%
- Prefer not to say 3%

Base: 7,229 PAF

Water metering and billing

The proportions of metered and unmetered customers in both the PAF and Panel samples matched the population data well, as shown in Table 10 below.

Table 10: Whether has water meter

	APR data[1] %	PAF %	Panel %
Yes	59%	61%	59%
No	41%	39%	41%
Base[2]		**6,537**	**5,065**

(1) Annual Performance Report (APR) data for 2021/22 on numbers of metered and unmetered households was provided to us by Ofwat for the purposes of producing this table.
(2) Bases exclude those that answered 'Don't know' or 'Prefer not to say'

As shown in Table 11, 96% of the PAF sample and 95% of the Panel sample were bill payers and the remaining proportions were non bill payers. The proportion of non-bill payers was twice as high in the Panel sample as in the PAF sample, albeit from a low base.

Table 11: Are you the person in your household who is responsible, either solely or jointly, for paying for your water services bill?

	PAF %	Panel %
I have complete responsibility for payment	63%	64%
I share responsibility for payment with others in my household	34%	31%
I have no responsibility	3%	6%
Don't know	1%	0%
Not stated	0%	0%
Base	**7,229**	**5,338**

Table 12 shows the combined water and sewerage bill amounts for household customers by sample group. As shown in the table, those in the Panel sample tended to have lower bills than those in the PAF sample.

Table 12: Combined water and sewerage bill amounts

	PAF %	Panel %
Less than £240 per year	19%	30%
£240 - £479.99 per year	50%	49%
£480 or more per year	31%	21%
Base(1)	**6,249**	**4,429**

(1) Bases exclude those that did not answer the question or did not know their bill amount.

The PAF sample had a higher proportion paying larger bills: 30% over £480 per year compared to 19% for Panel.

2.4 Anonymisation

The following measures were undertaken to ensure the household data were sufficiently anonymised to be shareable with Ofwat, CCW and water companies.

- Postcode was reduced to district level, e.g. BH21, after derivation of an urban-rural indicator
- Gender (Q10a) was dropped, while retaining Sex (Q10) in the data
- Bill payment frequency (Q12b) was dropped
- Bill level (Q13) was aggregated to High/Medium/Low, based on percentiles at the whole-sample level.
- Occupation (Q39-Q41) was dropped, retaining only SEG as a 3-category variable (AB, C1C2, DE) derived from these.
- Ethnicity (Q44) was dropped
- Vulnerability (Q46) was collapsed to 4 variables (Medical, Communication, Life stage, Any/no vulnerability)
- Opt-in metered question (Q53) was dropped

2.5 Weighting

A weighting procedure was applied to ensure the household sample was representative of the target population within each water company and sewerage company area by key demographics, as well as representing the population of England and Wales geographically according to the proportions coming from each water and sewerage company area. The approach incorporated *design weights* to correct for deliberate non-proportional sampling of participants by water and sewerage company area, and *post-stratification* weights to correct for variable response rates across different demographics within each water company and sewerage company.

At the time of calculation, a first release of Census 2021 data had been made available by the Office for National Statistics (ONS). This included population totals by age and gender, but not by social grade. Although the social grade distribution is likely to have evolved since the previous census in 2011, the decision was taken to use Census 2011 data on social grade rather than restrict the post-stratification weighting only to age and gender. Accordingly, whilst we are able to match to Census 2011 data by social grade, this may not in itself accurately represent the current population distribution.

A further issue with the Census 2021 first release was that data were only made available at the Local Authority area level, not the more granular Output Area level, which would have been better for matching to water and sewerage company area boundaries[1]. Accordingly, in order to obtain as accurate a set of population data as possible within water company and sewerage company boundaries, we calculated a 2011-to-2021 growth rate to population at the Local Authority level and applied that to Census 2011 data at the Output Area level, such that each Output Area population statistic was assumed to grow at the same rate within the same Local Authority. Output Areas were then matched via Geographical Information System (GIS) software to water company and sewerage company boundaries to calculate population statistics within each of these areas.

The design weights were calculated first, by simply dividing the population and sample numbers for each combination of water and sewerage company. All participants were then assigned the design weight corresponding to their combination of water and sewerage company.

The post-stratification weights were calculated next, by matching the weighted sample proportions of each age, sex, and socio-economic group of each water and sewerage company to the respective populations. We used a raking procedure (also known as iterative proportional fitting), following Kott (2006) and Särndal (2007). These weights correct for non-response bias, i.e. lower response rates among some groups.

The weights were obtained by an iterative procedure. In a given iteration, a weight is calculated such that the total sample size of a given group, scaled to the population, and adjusted by the weight, equals the known population totals for that group. The weight is estimated as the ratio of the known population totals to the estimated totals. In the next iteration, a weight is calculated in the same way, for another group. The procedure continues for all groups until convergence is attained, i.e. the weighted totals of all groups are approximately equal to the respective population totals and the weights do not change much in each iteration.

The weights were trimmed to the interval [0.25-4] to ensure that they were not excessively small or large for any of the participants, following Théberge (2000).

The final weights were assigned to each participant based on their combination of water and sewerage companies, and their age, sex, and socio-economic group.

Table 13 and Table 14 below show the unweighted sample proportions, population proportions, and weighted sample proportions by water company and by wastewater company respectively. Appendix E contains further tables showing the breakdowns by sex, age group, and socio-economic group within each company. As shown in these tables, the weighted sample proportions match those of the population well.

[1] The borders of each company were downloaded from the House of Commons Library webpage: https://commonslibrary.parliament.uk/constituency-information-water-companies/#datasources

Table 13: Proportions of household customers in population and sample, unweighted and weighted, by water company

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Affinity Water	6	4	6
Anglian Water	8	4	8
Bristol Water	2	4	2
Hafren Dyfrdwy	0	3	0
Northumbrian Water	8	10	8
Portsmouth Water	1	4	1
Severn Trent Water	14	8	14
South East Water	4	4	4
Southern Water	4	6	4
South Staffordshire W.	3	5	3
South West Water	4	5	4
SES Water	1	4	1
Thames Water	16	8	16
United Utilities	12	16	12
Dŵr Cymru	5	6	5
Wessex Water	2	4	2
Yorkshire Water	9	4	9
ALL	**100**	**100**	**100**

Table 14: Proportions of household customers in population and sample, unweighted and weighted, by wastewater company

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Anglian Water	11	9	11
Hafren Dyfrdwy	0	1	0
Northumbrian Water	5	4	4
Severn Trent Water	16	11	16
Southern Water	8	13	8
South West Water	3	4	3
Thames Water	25	20	25
United Utilities	12	16	12
Dŵr Cymru	6	8	5
Wessex Water	5	9	5
Yorkshire Water	9	4	9
ALL	**100**	**100**	**100**

3 Non-household survey

This section provides details on the following aspects pertaining to the non-household survey:

- Sample design
- Survey methodology
- Sample characteristics
- Anonymisation
- Weighting

3.1 Sample design

Target population

The target population of the non-household survey was determined such that the site, or premises, would be the unit of observation, where this was defined as having a unique supply address. This unit of measure contrasts with an alternative approach, which was considered, of defining non-household organisations, potentially comprising multiple premises, as the unit of observation.

This determination was agreed between Accent-PJM, Ofwat and CCW in light of the following key considerations:

- Service issues happen at premises, or in the neighbourhood of premises, and the core questions in the survey were much more naturally asked at the level of the premises than at a higher level.

- Premises, rather than organisations, are the unit of measure used by water companies, Ofwat and Market Operator Services Ltd (MOSL), the operator of the non-household market in England, when presenting and discussing non-household customer numbers.

- Non-household survey participants were considered likely to differ amongst each other with respect to how they would best be able to respond to the core survey questions on service issue impacts and required compensation amounts. Some would likely prefer to answer with reference to an individual premises, others with reference to a group of premises within a region, and others on behalf of a nationwide organisation as a whole. However, it was considered acceptable to require all survey participants to answer on behalf of a particular premises, subject to them being solely or jointly responsible as the decision maker for their organisation's water and wastewater service at that property.

The question remained as to how best to make use of contacts that were able to answer on behalf of multiple properties. This issue is discussed further below.

A final additional consideration pertaining to the target population was that the non-household premises would need to be supplied wholesale water and wastewater services by companies included in the research. This excluded customers of Independent Water Networks, Leep Utilities, Veolia Water, Icosa Water and Albion Water, as well as those with septic tanks or cesspits.

Sampling frames

In April 2017, the non-household retail market was opened to competition, and around 1.2 million customers in England became eligible to choose their water and waste water supplier. In Wales, by contrast, reflecting the policy position of the Welsh Government, customers of Welsh water companies continued to be only able to switch their water supplier if they were supplied with at least 50MI of water per year. This created the need to treat England and Wales differently for the purposes of sampling, and the approaches taken in each country are accordingly set out separately in the following.

England

Assembling a sampling frame for non-households in England required the merging of whole market data from MOSL's Central Market Operating System (CMOS) with contact details from water services retailers and self-suppliers. The MOSL data was used as the primary sampling frame, whilst the retailer and self-supplier contact data influenced how the sampled premises were contacted.

MOSL data

MOSL's CMOS database held details for each supply point of all participating non-household customers in the market, including water and sewerage providers and retailers. It therefore provided a comprehensive database for sampling non-household customers in England. It did not, however, include contact details, which had to be sourced separately from retailers.

Ofwat worked with MOSL to define a data extract from CMOS based on sampling units of supply point identifiers (SPIDs). SPIDs had a water and/or a sewerage component which together formed a SPID core. At the time of the data extraction there were approximately 1.5million SPID cores in CMOS, of which about 1.1m had both water and sewerage components. Those with only one component were excluded as the research involved comparisons of water and sewerage service impacts, and because many of them were very small supply such as agricultural feeding troughs. Additionally, SPIDs were removed in cases where there was no recorded water consumption over the previous 18 months. This could have arisen because the supply point was no longer valid, or because no valid meter reading had been taken place. However, information about SPID cores with no recorded water usage was less complete than usual due to the recent period of Covid restrictions.

The extracted dataset was transmitted securely to Accent for sampling following both MOSL and Accent signing a data processing agreement.

The technical specification used by MOSL for the data extraction was as follows:

- Eligible SPID cores for each stratum (defined as a water-wastewater combination) in drawing a sample will be those that:

  - Had both water and sewerage SPIDs (i.e. water troughs and the like to be excluded)
  - Had some (positive) water usage over the last 18 months

- Data required to be extracted from CMOS:

  – For each wholesale water-wastewater stratum: total number of eligible SPID cores, total water usage (last 18 months) corresponding to eligible SPID cores, Total billing amount for eligible SPID cores

  – For each SPID core, the following fields:
    a. SPID core identification code
    b. Wholesale water provider
    c. Wholesale sewerage services provider
    d. Water bill amount (total wholesaler amount)
    e. Sewerage bill amount (total wholesaler amount)
    f. Water usage (last 18 months)
    g. Stratum code (this was provided by Ofwat, with each code representing a water-wastewater combination)
    h. Water retailer (or code indicating self-supply)

This dataset contained 933,314 SPID core records. This number was reduced to 926,830 once invalid combinations of wholesale water and wastewater company were removed, including those supplied by Independent Water Networks, Leep Utilities, Veolia Water, Icosa Water and Albion Water.

Retailer data

Separately, Ofwat put in place a statutory requirement on all water retailers to provide contact details for all their customers to Accent for the purposes of the present research study, resulting in 99.9% of the market share being obtained in a useable form. Table 15 below shows the list of retailers from whom usable customer contact data were received and their corresponding market share.

Table 15: Retailer sample received

Retailer from whom sample received	Market share (%)
Water Plus	28.7%
Castle Water	20.7%
Wave Utilities	15.6%
Business Stream	15.4%
Water2Business	6.3%
Pennon Water Services	6.2%
Everflow	4.1%
SES Business Water	1.6%
Clear Business Water/Verastar	0.7%
First Business Water	0.3%
ASDM	0.2%
ConservAqua	0.1%
Grand Total	**99.8%**

In the first instance the supplied retailer lists were manipulated into consistent format and merged into a single file of 1,768,498 records with SPIDCore being the primary key.

Self-suppliers

The MOSL data included self-suppliers as well as retailer-supplied premises. Ofwat held contact details for these organisations, and these were used to contact the self-supplier directly where these were selected to be part of the sample to be approach. (See below for details of the procedures used to select sample, which applied to both self-suppliers and retailer-supplied premises.)

Table 16 shows a breakdown of this data by stratum and contact modes present. In all cases, a postal address was available, and in the majority of cases, the data additionally included telephone numbers and email addresses. However, the mix of contact details varied somewhat across the strata.

Self-suppliers

The MOSL data included self-suppliers as well as retailer-supplied premises. Ofwat held contact details for these organisations, and these were used to contact the self-supplier directly where these were selected to be part of the sample to be approach. (See below for details of the procedures used to select sample, which applied to both self-suppliers and retailer-supplied premises.)

Table 16: Composition of full combined retailer data by water-wastewater stratum and contact mode(s) present

Water-wastewater stratum	Total records	Post only	Tel and post only	Email and post only	Tel, email and post
Affinity / Anglian	16,263	3%	24%	2%	71%
Affinity / Southern	7,404	13%	27%	5%	55%
Affinity / Thames	61,279	4%	24%	4%	69%
Anglian / Anglian	110,534	3%	2%	2%	93%
Anglian / Severn Trent	7,469	8%	9%	7%	76%
Bristol / Wessex	9,923	17%	23%	7%	53%
Northumbrian / Anglian	24,606	3%	2%	2%	93%
Northumbrian / Northumbrian	57,816	5%	1%	3%	91%
Northumbrian / Thames	13,767	2%	14%	1%	83%
Portsmouth / Southern	23,657	14%	23%	4%	60%
SES / Southern	4,873	17%	38%	3%	42%
SES / Thames	15,561	13%	41%	3%	43%
Severn Trent / Severn Trent	308,017	8%	14%	9%	69%
Severn Trent / Yorkshire	7,944	27%	9%	21%	43%
South East / Southern	53,267	12%	21%	3%	64%
South East / Thames	13,800	4%	17%	2%	77%
South Staffs / Anglian	9,721	17%	8%	8%	67%
South Staffs / Severn Trent	37,158	18%	16%	7%	59%
South West / South West	63,368	37%	16%	2%	44%
South West / Southern	4,880	37%	13%	4%	45%
South West / Wessex	13,669	37%	19%	3%	41%
Southern / Southern	73,137	24%	9%	6%	60%
Southern / Thames	2,034	14%	15%	6%	65%
Thames / Thames	187,793	4%	19%	3%	74%
United Utilities / United Utilities	337,861	7%	15%	9%	69%
Wessex / Wessex	53,013	21%	38%	5%	37%
Yorkshire / Severn Trent	7,181	46%	3%	27%	24%
Yorkshire / Yorkshire	192,982	54%	1%	35%	10%
Total	**1,718,977**	**15%**	**14%**	**9%**	**62%**
Not matched to stratum	**71,469**				

Wales

Dŵr Cymru and Hafren Dyfrdwy (being involved in a closed market still) were able to supply their customer databases for the research also – but they were processed outside the combined retailer sample approach.

Dŵr Cymru

The Dŵr Cymru database contained 172,852 customer records, where separate records were held for water and sewerage customers. From this, duplicate addresses were dropped, as well as properties with missing and zero-bills, (in order to be able to stratify the sample by size), leading to a sample frame containing 100,249 unique addresses.

Using the postcode lookup matched to water-wastewater boundaries described in 2.1, 5,377 records were dropped where the postcodes indicated the property was supplied by companies other than Dŵr Cymru.

The final Dŵr Cymru sampling frame contained 94,872 unique customer property records, all of which had a postal address. Of these, 90,319 (95%) also had a telephone contact number, and 41,807 (44%) also had an email address.

Hafren Dyfrdwy

The Hafren Dyfrdwy database contained 7,010 customer records. Of these, 162 were dropped due to having missing postcodes, or being a duplicate address, resulting in 6,848 unique full postal addresses.

Based on matching postcodes to the lookup linked to water-wastewater boundaries, 41 further records were dropped where the postcodes indicated the property was supplied by companies other than Hafren Dyfrdwy.

The final Hafren Dyfrdwy sampling frame contained 6,807 unique customer property records, all of which had a postal address. Of these, 4,498 (66%) also had a telephone contact number, and 2,880 (42%) also had an email address.

Target sample sizes by water-wastewater company

The target non-household sample sizes were calculated for each water-wastewater company stratum in a similar way as for households. But with allocations based on total NHH water usage by stratum. A minimum of 200 non-household interviews was set per stratum rather than 500 in the case of households. The principal reason for the lower number was the substantially higher cost per interview for non-households in comparison to households.

This approach created a base sample size of 3,462 NHH premises.

Companies were then given opportunity to boost their sample, which led to a final sample size of 3,728 NHH premises, allocated across strata as shown in Table 17.

Table 17: Target non-household sample size by water and wastewater company

		Wastewater											
		Anglian Water	Dŵr Cymru	Hafren Dyfrdwy	Northumbrian Water	Severn Trent Water	South West Water	Southern Water	Thames Water	United Utilities	Wessex Water	Yorkshire Water	**Grand Total**
Water	Affinity Water	17						11	173				**201**
	Anglian Water	189				11							**200**
	Bristol Water										200		**200**
	Dŵr Cymru		420										**420**
	Hafren Dyfrdwy		80	60									**140**
	Northumbrian Water	53			200				17				**270**
	Portsmouth Water							200					**200**
	SES Water							16	184				**200**
	Severn Trent Water					197						3	**200**
	South East Water							133	67				**200**
	South Staffs Water	43				157							**200**
	South West Water						200	5			32		**237**
	Southern Water							193	7				**200**
	Thames Water								200				**200**
	United Utilities									260			**260**
	Wessex Water										200		**200**
	Yorkshire Water					2						198	**200**
	Total	**302**	**500**	**60**	**200**	**367**	**200**	**558**	**648**	**260**	**432**	**201**	**3,728**

Target sample sizes by customer size

Unlike households, non-household customers differed enormously from one another in terms of their size. This gave rise to the question over whether each premises should have an equal probability of selection, within water-wastewater stratum, or whether larger customers should be more than proportionally represented in the sample with respect to their frequency in the population.

This question was considered carefully by Accent-PJM, Ofwat and CCW. The agreed decision was that larger customers should have a higher chance of being selected in the sample. Moreover, the sample weight should, in principle, be based on water and sewerage bill level. This is because the key target statistic being measured in the non-household survey is the average required compensation for a service issue amongst non-household customers, and larger customers contribute a greater weight to this average than smaller customers.

More formally, let s_i be customer *i*'s bill size where $i = \{1, .. N\}$; let p_i be their required compensation as a percentage of the bill; and let x_i be their required compensation as a money amount. We define the target measure $\bar{p}^*$as the percentage that would need to

be multiplied by the average bill $\bar{s}$ to derive $\bar{x}$, ie: $\bar{x} = \bar{s}\bar{p}^*$, where $\bar{s} = \frac{1}{N}\sum_i s_i$ and $\bar{x} = \frac{1}{N}\sum_i x_i = \frac{1}{N}\sum_i s_i p_i$.

Then we have

$$\bar{p}^* = \frac{\bar{x}}{\bar{s}} = \frac{1}{\sum_i s_i}\sum_i s_i p_i$$

The expression for $\bar{p}^*$is thus a weighted average of p_i using s_i as weights. This establishes the principle of focusing on water and sewerage bill level as the appropriate measure of size for the purposes of weighting.

Given equal probabilities of selection into the sample, the weight of each observation in the estimation of $\bar{p}^*$ should thus, ideally, be proportional to water and wastewater bill size. ('Ideally' is used because water and wastewater bill size is recorded with some error in the sample due to deficiencies in the MOSL database with respect to bill size, and in the survey response data due to the fact that participants often do not know their bill size very accurately.)

This then implies that the sample should be designed with probabilities of selection proportional to water and wastewater bill size. This is because the weights used to invert the probabilities of selection would exactly offset the weights used to calculate a size-weighted average, leading to weights all equal to 1 or, equivalently, the removal of any weights from the calculation. Unweighted statistics are known to have lower variance, all else equal, than weighted statistics (Kish, 1965) and so sampling in proportion to water and wastewater bill size will minimise the variance of the size-weighted average estimate.

The above considerations guided the approach taken to further stratify the sample design by size of premises. In the case of English water and wastewater companies, MOSL data were used, while for Welsh Water, the company's own customer data were used. For Hafren Dyfrdwy, no stratification was undertaken by company size due to the fact that the full sampling frame was needed in order to ensure the overall Hafren Dyfrdwy strata sizes could be achieved, ie. there was no sampling from this frame.

England

Although the MOSL data contained annual bill data, we were advised by MOSL that the consumption data were more reliable at the individual SPID level. This was supported by our analysis which found large numbers of negative bill amounts and zero bill amounts, as well as a highly irregular relationship with consumption data, which we were advised was significantly more reliable.

Using MOSL data, the following steps were taken:

- First, we generated a cleaned, combined water and wastewater bill for each SPID, treating negatives and zeroes as missing (29,306 were treated as having a missing bill)

- We then created a consumption-based segment variable for the full (remaining) sample of SPIDs, based on approximately equal number of SPIDs per band.

  - This resulted in cut-points of 100 litres/day and 500 litres/day
  - Table 18 shows frequencies and total revenue in each band

  This analysis showed that 89% of the sample should be drawn from the largest third of users, with only 3% drawn from the smallest third.

- Tables like these were prepared for each water-wastewater stratum to determine the target number of interviews by size band in each.

Table 18: English companies sample stratification by size

Consumption band (l/day)	Frequency in MOSL data	Proportion of total bills in band (%)
<100	302,230	3%
100 to 500	308,942	8%
> 500	315,658	89%
Total	**926,830**	**100%**

We considered an alternative approach of splitting the sample so that there would be an equal proportion of interviews in each band, rather than an equal number of premises in the sampling frame. However, this approach was rejected because it implied the need for a substantially larger number of interviews in the largest size band than it would have been possible to recruit, given expected response rates. Indeed, the three-way split that was adopted was at the practical limit of what could be achieved in the largest size band, and in some cases breached that limit. (See Table 20 for a list of strata that were anticipated to be difficult to achieve given available records in the sampling frames.)

Wales – Dŵr Cymru

The key difference regarding the stratification by size for Dŵr Cymru in comparison to the English companies was that bill size was used rather than consumption to create size bands. This is because the bill size data was considered to be reliable in this case, in contrast to the MOSL data. In other respects, the approach to stratification by size was the same.

A bill-based segment variable was created based on approximately equal numbers of records per band. This resulted in cut-points of £100 and £300 per year.

The following table shows frequencies and total revenue in each band

Table 19: Dwr Cymru sample stratification by size

Bill band (£/year)	Frequency in Dwr Cymru data	Proportion of total bills in band (%)
<£100	33,234	4%
£100 to £300	29,805	12%
> £300	31,833	84%
Total	**94,872**	**100%**

This analysis showed that 84% of the sample should be drawn from the largest third of users, with only 4% drawn from the smallest third.

Selection of sample to be approached

The next step of sample production was to draw samples from the MOSL data, in the case of England, and from the Dŵr Cymru and Hafren Dyfrdwy data in the case of Wales.

In both cases, SPIDs were sampled at random at a rate of 100 SPIDs per target sample cell size, where these cells were defined based on water-wastewater and size strata as described above, subject to sufficient records being available in the sample frames.

The multiple of 100 was chosen on the basis of a target minimum conversion rate of 1%. Although it was hoped that the conversion rate would be higher than 1%, there was no evidence from either of the two pilot surveys regarding what the rate could be expected to be, since the MOSL and retailer data had only been obtained following the pilot surveys, and alternative, not directly comparable, sampling approaches had been used for the pilots themselves. (See Accent-PJM, 2022b, for details.) Furthermore, in addition to non-response, additional factors considered when setting the multiple of 100 included that some of the contact details were considered likely to be invalid, and that there were likely to be duplicate contacts for the same SPID in many cases.

For approximately half of the water-wastewater strata, the conversion rate required to hit the sample size target in the largest size band exceeded 1% even after selecting the full sampling frame of non-household premises with no sampling. This meant that fewer than 100 records could be sampled per required interview in these cases.

Table 20 presents details of these strata, and the conversion rates required in each case. The table shows that the required conversion rate was below 2% in the majority of these cases, with only six strata requiring a conversion rate greater than 2%.

Rather than fill up the full water-wastewater stratum by adding a greater proportion of records from smaller customers, it was decided to keep the 100:1 ratio as the upper limit on the smaller customers and simply accept fewer records where there were insufficient numbers available to maintain the 100:1 ratio. This approach helped to preserve the size split across the sample as far as practical.

The sample cells anticipated to be particularly difficult to achieve based on this analysis were the SES / Southern, Portsmouth / Southern, and SES / Thames large user strata. These sample cells all required a conversion rate greater than 5%, which was considered unlikely to be possible. In these cases, the fieldwork teams were encouraged to prioritise conversion of these strata, to the extent possible, to maximise the conversion rate achieved. However, it was anticipated that some additional contacts may eventually be needed from the smaller size bands in order to achieve the overall water-wastewater target in some cases. Ultimately, weights were expected to be sufficient to correct for departures from the sample design that would occur in such cases.

Table 20: Strata with required conversion rates greater than 1%

Water / wastewater company	Size band	Target sample size	Population size	Conversion rate required
SES / Southern	Large	14	241	5.80%
Portsmouth / Southern	Large	186	3,387	5.50%
SES / Thames	Large	167	3,352	5.00%
Bristol / Wessex	Large	180	7,043	2.60%
Wessex / Wessex	Large	182	7,033	2.60%
Hafren Dyfrdwy / Hafren Dyfrdwy	All	60	2,517	2.40%
Southeast / Southern	Large	120	6,184	1.90%
South Staffs / Anglian	Large	40	2,143	1.90%
Hafren Dyfrdwy / Dŵr Cymru	All	80	4,284	1.90%
South Staffs / Severn	Large	127	7,210	1.80%
South West / South West	Large	174	10,027	1.70%
Southeast / Thames	Large	61	3,858	1.60%
Southern / Southern	Large	176	12,450	1.40%
South West / Southern	Large	4	318	1.30%
Northumbrian / Northumbrian	Large	176	14,274	1.20%
South West / Wessex	Large	28	2,340	1.20%
Affinity / Thames	Large	157	15,020	1.10%
Anglian / Severn	Large	10	943	1.10%
Southern / Thames	Large	6	560	1.10%
Dŵr Cymru / Dŵr Cymru	Large	352	33,093	1.10%

Source: Accent-PJM analysis of MOSL data. Note: 'Large' defined as >500l/day for English companies, and as >£300/year in the case of Dŵr Cymru customers.

Treatment of multi-site contacts

Once the sample had been drawn from MOSL, contact details from the combined retailer data, plus Ofwat's contact details for selected self-suppliers, were appended. As anticipated, this resulted in a substantial number of cases where the same contact details were assigned to different selected SPIDs.

Although the primary unit of measure was the premises, there was a practical desire to talk to contact individuals once only, rather than separately with respect to different properties. This meant that there was a need to de-duplicate the sample selected to be approached in order to contain one record per contact person.

Additionally, however, there was also a desire to make best use of each individual contact in cases where relative impacts and required compensation levels (as a percentage of the bill) might be expected to be the same, or similar, across the different sites for which the contact was solely or jointly responsible.

In light of these considerations, the decision was taken to deduplicate the sample selected to be approached with respect to **primary contact name** and **organisation name**. Where there were multiple records per contact, as defined by these variables, one record was selected at random to serve as the primary premises, which would be asked about in the survey.

However, the additional records were retained for potential inclusion in the sample subject to how the participant answered the following supplementary question, which was added

to the questionnaire in order to make best use of cases where relative impacts and required compensation levels might be expected to be the same, or similar, across different sites:

Q36X Thinking about the choices you have just made about the impacts of different service issues and the compensation amounts shown, would you say that your responses would be similar across most other sites for which you manage the water and wastewater services?

Yes
No
I am not responsible for any other sites
Don't know

If, and only if, a participant answered 'Yes' to this question, the records retained for potential inclusion for that contact were added to the achieved sample as additional observations. These were recorded with the same impact and required compensation choice responses as for the primary premises asked about in the survey, but with the correct stratum associated to them based on details held about the additional premises from the sampling frames.

This approach had only a fairly minor impact on the sample in practice, increasing the achieved sample size by less than 5%. Thus, in the vast majority of cases, participants' answers entered the data for one unique business premises only.

Importantly, where an organisation was represented more than once in the selected sample but by different individuals, these records were not de-duplicated and so the multi-site firms with *decentralised* control were represented on multiple occasion within the sample (and *their* representation in the final data set adequately ensured purely though the sample selection approach and the fact different people with responsibility for different multiple sites were interviewed).

The resulting sample file, following de-duplication, was composed as shown in Table 21. This file was used for the fieldwork, as described in the following section.

Table 21: Composition of sample selected to be approached by water-wastewater stratum and contact mode(s) present

Water / wastewater stratum	Total records	Post only	Tel and post	Email and post	Tel, email and post
Affinity / Anglian	651	4%	47%	1%	48%
Affinity / Southern	692	24%	13%	5%	58%
Affinity / Thames	5,578	4%	18%	2%	76%
Anglian / Anglian	12,326	1%	1%	1%	97%
Anglian / Severn	712	2%	1%	2%	94%
Bristol / Wessex	6,383	20%	35%	3%	42%
Dŵr Cymru/Dŵr Cymru	38,601	3%	52%	1%	44%
Hafren/Dŵr Cymru	4,284	31%	25%	13%	30%
Hafren/Hafren	2,517	13%	47%	4%	36%
Northumbrian / Anglian	3,634	2%	0%	1%	97%
Northumbrian / Northumbrian	9,782	1%	1%	1%	97%
Northumbrian / Thames	1,098	1%	2%	0%	97%
Portsmouth / Southern	4,731	26%	11%	5%	59%
Severn / Severn	13,472	6%	11%	8%	74%
Severn / Yorkshire	210	6%	10%	7%	78%
Southeast / Southern	5,632	21%	8%	5%	66%
Southeast / Thames	1,411	3%	10%	2%	85%
Southern / Southern	9,215	20%	9%	5%	67%
Southern / Thames	309	25%	8%	7%	60%
South Staffs / Anglian	1,635	13%	10%	12%	65%
South Staffs / Severn	7,364	18%	14%	5%	62%
South West / Southern	214	19%	13%	6%	62%
South West / Southwest	9,239	29%	14%	2%	56%
South West / Wessex	1,879	35%	14%	2%	49%
SES / Southern	262	15%	21%	3%	61%
SES / Thames	2,708	12%	47%	3%	38%
Thames / Thames	9,574	5%	22%	2%	71%
United / United	17,066	7%	11%	9%	73%
Wessex / Wessex	6,140	17%	35%	3%	45%
Yorkshire / Severn	142	48%	1%	36%	15%
Yorkshire / Yorkshire	14,180	49%	0%	41%	10%
Total	**146,239**	**15%**	**12%**	**8%**	**65%**

Source: Combined retailer data

3.2 Survey methodology

Fieldwork period

The non-household survey interviews took place between August 2022 and October 2022. This period was approximately one month later than the corresponding fieldwork period for households due to the fact that the sample design and execution took longer to develop for non-households than for households.

Contact and survey modes

The sample file included postal addresses for every record, and a mixture of additional e-mail and telephone contact details that varied across strata.

Conceptually (balancing cost effectiveness, with the need to reflect all corners of the available sample, with the desire to have a good mix of methods) it was agreed with Ofwat and CCW that the contact mode shares shown in Table 22 should be pursued for the non-household survey, where the sample permitted it.

Table 22: Target overall contact mode shares for non-household survey

E-mail	Post	CATI
55-60%	20-25%	c20%

Due to the differing availability of the various types of contact details (address, email, phone) in area, the split by methodology was not entirely consistent across strata. Table 23 presents the target contact mode shares by water/wastewater company stratum that were later agreed to be used as a guide for the survey fieldwork. These were agreed based on the available sample with each type of contact details across the strata, and in light of the original target contact mode shares shown in Table 22.

Table 23: Target sample sizes and mode shares by water-wastewater stratum

Water/wastewater stratum	Target sample size	Target contact mode share		
		Email	Postal	Telephone
Affinity/Anglian	17	53%	24%	18%
Affinity/Southern	11	64%	18%	27%
Affinity/Thames	173	50%	29%	20%
Anglian/Anglian	189	69%	24%	5%
Anglian/Severn Trent	11	55%	36%	9%
Bristol/Wessex	200	45%	28%	28%
Dŵr Cymru/Dŵr Cymru	420	55%	25%	20%
Hafren/Dŵr Cymru	80	48%	35%	20%
Hafren/Hafren	60	47%	37%	20%
Northumbrian/Anglian	53	68%	30%	4%
Northumbrian/Northumbrian	200	49%	49%	2%
Northumbrian/Thames	17	76%	24%	0%
Portsmouth/Southern	200	52%	42%	8%
SES/Southern	16	56%	31%	13%
SES/Thames	184	22%	35%	42%
Severn Trent/Severn Trent	197	66%	12%	21%
Severn Trent/Yorkshire	3	100%	33%	0%
South East/Southern	133	50%	32%	17%
South East/Thames	67	52%	39%	3%
South Staffs/Anglian	43	42%	47%	12%
South Staffs/Severn Trent	157	59%	21%	20%
South West/South West	200	53%	22%	25%
South West/Southern	5	80%	20%	0%
South West/Wessex	32	56%	19%	22%
Southern/Southern	193	55%	23%	20%
Southern/Thames	7	57%	14%	0%
Thames/Thames	200	52%	28%	19%
United Utilities/UU	260	67%	13%	18%
Wessex/Wessex	200	45%	32%	27%
Yorkshire/Severn Trent	2	50%	50%	0%
Yorkshire/Yorkshire	198	56%	41%	1%
Total	**3,728**	**53%**	**29%**	**18%**

Where there were numerous contact methods available for a record, participants could have been approached by numerous means as (appropriate), and some will have hence received invitations via more than one contact mode. The survey software ensured, however, that only one entry was possible per unique premises.

In the following, the fieldwork approach to each survey mode is set out.

Email

Participants were emailed an invitation to contribute towards the research using the text contained in appendix C. Up to two reminders were then sent, depending on the requirements of the fieldwork (with reference to the ideal targets mentioned in the previous section).

Table 24 provides details of the numbers of email invitations and reminders sent, the interviews achieved and the implied conversion rate. Response rates varied between areas, with an average response rate of 2.1%.

With regard to self-suppliers, Ofwat sent a warmup email to 41 different contacts across 15 organisations that had been selected for inclusion within the sample. Following this, Accent then invited them all to take part. Unfortunately, however, none of the self-supplier contacts responded to the invitation, and so the final sample did not contained any self-suppliers.

Table 24: Email invitations, interviews achieved and conversion rates by water-wastewater stratum

Water / wastewater company	Initial invitations	Reminded once	Reminded twice	Interviews achieved	Conversion rate
Affinity / Anglian	282	180	64	9	3.2%
Affinity / Southern	235	38		7	3.0%
Affinity / Thames	3,889	844	2,672	87	2.2%
Anglian / Anglian	6,312	877		130	2.1%
Anglian / Severn Trent	340	46		6	1.8%
Bristol / Wessex	2,813	1,238	1,170	89	3.2%
Hafren Dyfrdwy / Hafren Dyfrdwy	795	19	662	28	3.5%
Hafren Dyfrdwy / Dŵr Cymru	1,479	21	1,262	38	2.6%
Northumbrian / Anglian	1,982	242		36	1.8%
Northumbrian / Northumbrian	4,625	654	19	97	2.1%
Northumbrian / Thames	811	210	501	13	1.6%
Portsmouth / Southern	2,797	962	1,534	104	3.7%
Severn Trent / Severn Trent	6,525	1,033		131	2.0%
Severn Trent / Yorkshire	102	13		3	2.9%
South East / Southern	2,707	440	33	67	2.5%
South East / Thames	1,226	598	244	35	2.9%
South Staffs / Anglian	742	189	9	18	2.4%
South Staffs / Severn Trent	4,847	2,575	544	93	1.9%
South West / South West	4,250	976	149	106	2.5%
South West / Southern	140	73		4	2.9%
South West / Wessex	899	540		18	2.0%
Southern / Southern	3,940	623		106	2.7%
Southern / Thames	201	113		4	2.0%
SES / Southern	165	29	4	9	5.5%
SES / Thames	1,771	188	893	41	2.3%
Thames / Thames	6,088	3,074	589	103	1.7%
United Utilities / United Utilities	8,506	1,329		175	2.1%
Dŵr Cymru / Dŵr Cymru	15,077	2,645		232	1.5%
Wessex / Wessex	2,930	1,298	512	90	3.1%
Yorkshire / Severn Trent	72	34	21	1	1.4%
Yorkshire / Yorkshire	6,765	1,905	368	111	1.6%
Total	**93,313**	**23,006**	**11,250**	**1,991**	**2.1%**

Postal

Participants were posted an invitation to contribute towards the research, and reminders as required, using the text contained in Appendix C. Table 25 provides details of the numbers of postal invitations and reminders sent, the interviews achieved and the implied

conversion rate. Response rates varied between areas, with an average response rate of 2.1%, which was the same as the average email response rate.

Table 25: Postal invitations, interviews achieved and conversion rates by water-wastewater stratum

Water / wastewater company	Initial invitations	Reminders	Interviews achieved	Conversion rate
Affinity / Anglian	136	93	4	2.9%
Affinity / Southern	85	80	2	2.4%
Affinity / Thames	2,073	1,711	50	2.4%
Anglian / Anglian	2,252	1,493	46	2.0%
Anglian / Severn Trent	88		4	4.6%
Bristol / Wessex	2,013	1,572	55	2.7%
Hafren Dyfrdwy / Hafren Dyfrdwy	878	1,141	22	2.5%
Hafren Dyfrdwy / Dŵr Cymru	1,309	786	28	2.1%
Northumbrian / Anglian	741	526	16	2.2%
Northumbrian / Northumbrian	3,372	2,669	98	2.9%
Northumbrian / Thames	1,097	227	4	0.4%
Portsmouth / Southern	3,226	2,388	84	2.6%
Severn Trent / Severn Trent	1,742	1,191	23	1.3%
Severn Trent / Yorkshire	28		1	3.6%
South East / Southern	2,000	1,039	42	2.1%
South East / Thames	1,384	704	26	1.9%
South Staffs / Anglian	923	398	20	2.2%
South Staffs / Severn Trent	1,751	1,241	33	1.9%
South West / South West	1,595	331	43	2.7%
South West / Southern	85	37	1	1.2%
South West / Wessex	528	280	6	1.1%
Southern / Southern	2,390	1,513	45	1.9%
Southern / Thames	308	55	1	0.3%
SES / Southern	185	96	5	2.7%
SES / Thames	2,658	2,461	65	2.5%
Thames / Thames	5,482	2,026	55	1.0%
United Utilities / United Utilities	2,087	1,407	34	1.6%
Dŵr Cymru / Dŵr Cymru	6,259	3,670	105	1.7%
Wessex / Wessex	1,833	1,576	64	3.5%
Yorkshire / Severn Trent	140	41	1	0.7%
Yorkshire / Yorkshire	2,803	1,768	82	2.9%
Total	**51,451**	**32,520**	**1,065**	**2.1%**

Telephone

Potential participants were phoned and informed that the survey would involve being offered a series of choice pairs, where they could choose whether they would rather Scenario A, or Scenario B to occur and that these were hosted online. They were told it might be helpful in terms of speed and understanding if they were able to quickly look at them via a short link that could be read out. If not they were reassured that these could be read out over the phone.

The link was in the following format: https://acsvy.com/3524/s1 with 30 variants.

Table 26 provides details of the numbers of telephone numbers contacted, broken down by whether they were exhausted or remained live by end of the fieldwork period, the numbers of interview achieved and the implied conversion rates. Response rates varied between areas, with an average response rate of 3.6%.

Table 26: Telephone contacts and outcomes by water-wastewater stratum

	Contacted			Conversion rate	
Water / wastewater company	Exhausted	Live	Interviews acheived	Interviews / Exhausted	Interviews / Contacted
Affinity / Anglian	46	131	3	6.5%	1.7%
Affinity / Southern	18	29	3	16.7%	6.4%
Affinity / Thames	721	186	35	4.9%	3.9%
Anglian / Anglian	78	37	10	12.8%	8.7%
Anglian / Severn Trent	7	1	1	14.3%	12.5%
Bristol / Wessex	442	1,261	56	12.7%	3.3%
Hafren Dyfrdwy / Hafren Dyfrdwy	109	287	12	11.0%	3.0%
Hafren Dyfrdwy / Dŵr Cymru	147	317	16	10.9%	3.5%
Northumbrian / Anglian	10	3	2	20.0%	15.4%
Northumbrian / Northumbrian	51	14	3	5.9%	4.6%
Northumbrian / Thames	12	4	0	0.0%	0.0%
Portsmouth / Southern	195	68	15	7.7%	5.7%
Severn Trent / Severn Trent	465	1,057	41	8.8%	2.7%
Severn Trent / Yorkshire	14	6	0	0.0%	0.0%
South East / Southern	321	66	22	6.9%	5.7%
South East / Thames	94	41	2	2.1%	1.5%
South Staffs / Anglian	134	26	5	3.7%	3.1%
South Staffs / Severn Trent	443	589	31	7.0%	3.0%
South West / South West	373	821	50	13.4%	4.2%
South West / Southern	14	12	0	0.0%	0.0%
South West / Wessex	89	177	7	7.9%	2.6%
Southern / Southern	613	172	39	6.4%	5.0%
Southern / Thames	19	8	0	0.0%	0.0%
SES / Southern	43	12	2	4.7%	3.6%
SES / Thames	987	282	78	7.9%	6.2%
Thames / Thames	1,026	229	38	3.7%	3.0%
United Utilities / United Utilities	517	1,370	47	9.1%	2.5%
Dŵr Cymru / Dŵr Cymru	877	1,443	84	9.6%	3.6%
Wessex / Wessex	565	1,159	54	9.6%	3.1%
Yorkshire / Severn Trent	0	2	0	0.0%	0.0%
Yorkshire / Yorkshire	37	13	1	2.7%	2.0%
Total	**8,467**	**9,823**	**657**	**7.8%**	**3.6%**

3.3 Sample characteristics

The following tables and statistics are intended to present a brief snapshot of the non-household sample. A full analysis of the data is intended to be completed within the Analysis and Modelling phase of the study and will be reported therein.

Achieved sample sizes

The non-household survey achieved 3,669 interviews with unique participants, which covered 3,838 unique business premises once multi-site response had been counted. This slightly exceeded the target sample size of 3,728 business premises.

Table 27: Target and achieved sample sizes and achieved mode shares by water-wastewater stratum

Water/wastewater stratum	Target sample size	Achieved sample size	Achieved contact mode share		
			Email	Postal	Telephone
Affinity/Anglian	17	18	56%	22%	22%
Affinity/Southern	11	12	58%	17%	25%
Affinity/Thames	173	183	52%	27%	21%
Anglian/Anglian	189	190	71%	24%	5%
Anglian/Severn Trent	11	11	55%	36%	9%
Bristol/Wessex	200	222	49%	25%	26%
Dŵr Cymru/Dŵr Cymru	420	423	55%	25%	20%
Hafren/Dŵr Cymru	80	80	45%	35%	20%
Hafren/Hafren	60	60	45%	35%	20%
Northumbrian/Anglian	53	53	66%	30%	4%
Northumbrian/Northumbrian	200	199	49%	49%	2%
Northumbrian/Thames	17	18	78%	22%	0%
Portsmouth/Southern	200	208	53%	38%	9%
SES/Southern	16	16	56%	31%	13%
SES/Thames	184	187	25%	32%	43%
Severn Trent/Severn Trent	197	200	68%	12%	21%
Severn Trent/Yorkshire	3	4	75%	25%	0%
South East/Southern	133	133	51%	32%	17%
South East/Thames	67	69	59%	38%	3%
South Staffs/Anglian	43	43	42%	47%	12%
South Staffs/Severn Trent	157	160	61%	19%	20%
South West/South West	200	200	54%	21%	26%
South West/Southern	5	5	80%	20%	0%
South West/Wessex	32	32	59%	19%	22%
Southern/Southern	193	199	57%	23%	20%
Southern/Thames	7	8	88%	13%	0%
Thames/Thames	200	211	57%	24%	18%
United Utilities/UU	260	277	71%	12%	17%
Wessex/Wessex	200	212	46%	28%	26%
Yorkshire/Severn Trent	2	2	50%	50%	0%
Yorkshire/Yorkshire	198	203	58%	40%	2%
Total	**3,728**	**3,838**	**55%**	**27%**	**18%**

Survey completion times

The average completion times for the non-household survey, by mode, were as follows:

Telephone: 19 minutes 14 seconds.

Online completion:

- Recruited by e-mail: 15 minutes 11 seconds.

- **Recruited by post:** 15 minutes 27 seconds

The telephone survey took somewhat longer to complete than the online self-complete survey, but there was no substantial difference in completion times on the online self-complete survey due to differences in the mode by which participants were recruited.

Key premises characteristics

Table 28 presents a comparison of key non-household sample characteristics against population statistics where available, including data from MOSL on consumption band for customers in England, and data from BEIS Business Population Estimates 2022 for employment by size band and industry sector.

In the case of the consumption data, the relevant population comparators are the same as the target sample sizes, which are based on total billing revenue within band rather than the number of customers. See Table 18 and the surrounding text for discussion of why this was an appropriate approach for structuring the sample. Table 28 shows that the achieved sample was somewhat overweighted to smaller users at the expense of larger users in comparison to the sample plan.

For numbers of employees and industry sector, the relevant population data are drawn from BEIS business population estimates 2022. With respect to employment Table 28 shows that the achieved sample was overweighted to the 1-49 size band, and contained an underrepresentation of the largest premises (250+ employees) in comparison to the employment distribution in England and Wales. This is corrected at the level of individual water and wastewater companies via weighting, as discussed in Section 3.5 below.

With regard to industry sector, the data suggests a mixed result, with over-representation of some industries, including Accommodation and Food Service Activities most notably, at the expense of under-representation of others, including Construction, Wholesale and Retail Trade, Professional, Scientific and Technical Activities, and Administrative and Support Service Activities.

Table 28: Key non-household sample characteristics compared to population statistics

Premises characteristic	Population %	Achieved sample %
Consumption band (l/day)[1]		
<100	3%	6%
100 to 500	8%	17%
> 500	89%	77%
Number of employees[2]		
0	16%	14%
1-49	31%	69%
50-249	13%	10%
250+	40%	6%
Industry sector[2]		
A: Agriculture, Forestry and Fishing	2%	3%
B,D,E: Mining and Quarrying; Electricity, Gas and Air Conditioning Supply; Water Supply; Sewerage, Waste Management and Remediation Activities	1%	1%
C: Manufacturing	9%	7%
F: Construction	8%	4%
G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	19%	11%
H: Transportation and Storage	6%	2%
I: Accommodation and Food Service Activities	9%	23%
J: Information and Communication	5%	1%
K: Financial and Insurance Activities	4%	1%
L: Real Estate Activities	2%	7%
M: Professional, Scientific and Technical Activities	10%	2%
N: Administrative and Support Service Activities	11%	2%
P: Education	2%	1%
Q: Human Health and Social Work Activities	7%	7%
R: Arts, Entertainment and Recreation	3%	9%
S: Other Service Activities	3%	11%

(1) Both population and sample statistics are for England only for this measure. Population statistics are the revenue proportions in each consumption band rather than the numbers of premises (see Table 18). Sample base =2,621.

(2) Population data derived from BEIS Business Population Estimates for the UK and Regions 2022: Table 9 for No. employees and Table 10 for Business Sector. In both cases, a weighted average of England and Wales data for the distribution of employment are shown. Sample bases exclude 'don't know', 'not stated' and those that could not be coded. Sample bases=3,620 (Number of employees) and 3,596 (Industry sector).

3.4 Anonymisation

The following measure was undertaken to ensure the non-household data were sufficiently anonymised to be shareable with Ofwat, CCW and water companies.

- Business sector (Q50) dropped.

3.5 Weighting

A weighting procedure was applied to ensure that the non-household sample was representative of the target population within each water company and sewerage company area by business size (i.e., number of employees), as well as representing the population of businesses of England and Wales geographically according to the proportions coming from each water and sewerage company area. The weighting was applied to a version of the dataset where each record represented one site (after disaggregating the businesses that had more than one site).

The number of businesses by water and sewerage company area came from Annual Performance Report 2021-22 data, provided by Ofwat. The disaggregation of businesses into sizes (0, 1-5, 5-49, and 50+ employees) in the population used data published by the Department for Business, Energy & Industrial Strategy (*Business Population Estimates for the UK and Regions 2022*). This data is at the regional level. The number of businesses in each region was assigned to water and sewerage companies proportionally to the area that those companies represent in the region. This was estimated in a Geographic Information System (GIS).

The weighting approach incorporated *design weights* to correct for deliberate non-proportional sampling of businesses by water and sewerage company area, and *post-stratification* weights to correct for variable response rates across different business sizes within each water company and sewerage company.

The design weights were calculated first, by matching the weighted sample proportions of each water and sewerage company to the respective populations. The post-stratification weights were calculated next, by matching the weighted sample proportions of each business size of each water and sewerage company to the respective populations.

In both cases, we used a raking procedure (also known as iterative proportional fitting), following Kott (2006) and Särndal (2007). The weights were obtained by an iterative procedure. In a given iteration, a weight is calculated such that the total sample size of a given group, scaled to the population, and adjusted by the weight, equals the known population totals for that group. The weight is estimated as the ratio of the known population totals to the estimated totals. In the next iteration, a weight is calculated in the same way, for another group. The procedure continues for all groups until convergence is attained, i.e. the weighted totals of all groups are approximately equal to the respective population totals and the weights do not change much in each iteration.

The final weights were assigned to each business site based on their combination of water and sewerage companies, and their size.

The weights were not trimmed, as this would lead to substantial gaps between the weighted sample proportions and the population proportions.

Table 29 and Table 30 below shows the unweighted sample proportions, population proportions, and weighted sample proportions by water company and by wastewater company respectively. Appendix E contains further tables showing these proportions by

employment size band within each company. As shown in these tables, the weighted sample proportions match those of the population well.

Table 29: Proportions of non-household customers in population and sample, unweighted and weighted, by water company

		Sample	
	Population (%)	Unweighted (%)	Weighted (%)
Affinity Water	5	6	5
Anglian Water	8	5	8
Bristol Water	2	6	2
Dŵr Cymru	8	11	6
Hafren Dyfrdwy	1	4	1
Northumbrian Water	7	7	7
Portsmouth Water	3	5	3
SES Water	1	5	1
Severn Trent Water	13	5	13
South East Water	1	5	1
South Staffs Water	3	5	4
South West Water	6	6	5
Southern Water	4	5	4
Thames Water	14	6	14
United Utilities	12	7	14
Wessex Water	3	6	3
Yorkshire Water	9	5	9
ALL	100	100	100

Base: 3,838

Table 30: Proportions of non-household customers in population and sample, unweighted and weighted, by wastewater company

		Sample	
	Population (%)	Unweighted (%)	Weighted (%)
Anglian Water	10	8	10
Dŵr Cymru	7	13	7
Hafren Dyfrdwy	0	2	0
Northumbrian Water	5	5	5
Severn Trent Water	16	10	16
South West Water	4	5	4
Southern Water	7	15	8
Thames Water	23	17	23
United Utilities	14	7	14
Wessex Water	5	12	5
Yorkshire Water	9	5	9
ALL	100	100	100

Base: 3,838

4 Conclusions

The survey methodology adopted for this stage of the Collaborative ODI research introduced a number of innovations in the context of the England and Wales water sector. These were embodied in both the household and non-household surveys, as described in the following.

4.1 Household survey

Most notably with respect to the household survey, the sampling method made use of the PAF as a means of obtaining a sample conforming to the principles of probability sampling, as part of a mixed-method approach including a 50-50 split of PAF-Panel sample. This allowed for a direct comparison of the impact of sampling frame on survey performance and results.

First comparisons of differences between the PAF and Panel samples show that the PAF participants took substantially longer to complete the survey than those from the Panel sample. This suggests that they may have given the survey less attention than those from the PAF, which could suggest a lower quality of response. However, an alternative explanation is that Panel participants may have been able to grasp what was required more quickly, as they will generally have been more experienced at completing surveys.

A further notable finding was that, despite not having the quota control that Panel samples are able to have, comparisons of demographic characteristics between the PAF and Panel samples and the Census suggest that both methods performed roughly the same in terms of their ability to obtain a representative sample. Thus, sensitivity to variations in response rates does not appear to be a significant weakness of the PAF method.

Further analysis during the next phase of the research (Analysis and modelling) will reveal whether there are any further differences between PAF and Panel samples with respect to survey quality and/or results. On the basis of the survey performance and initial analysis, however, the PAF approach appears to be at least a valid alternative worth considering for future research.

4.2 Non-household survey

In a first for the water sector in England, the sampling approach and survey methodology for the non-household survey made use of MOSL's CMOS database of all registered non-household supply points in England, combined with a retailer-provided dataset of contact details assembled for the purposes of this study. This provided a comprehensive and detailed sampling frame for allowing the selection of a random sample of non-household premises in England stratified by water and wastewater company, and size. Moreover, it allowed customers to be contacted by email, telephone and/or post without compromising the sample integrity.

For Wales, Dwr Cymru's and Hafren Dyfrdwy's own customer data were used to sample and contact customers. These data were broadly comparable to the combined MOSL-retailer sampling frame, meaning that the approach taken in Wales to sampling and fieldwork was almost identical to the approach taken in England.

Although the approach took somewhat longer than ideal to develop, which led to a few weeks' delay in launching the survey, no significant problems emerged in implementing the approach, and first results from the non-household survey suggest that it performed well at achieving the target sample sizes by stratum. Consequently, the approach appears to have much to recommend it as the basis for sampling and surveying non-household customers in future where possible.

4.3 Next steps

The present report has documented Stage 3 of the broader Collaborative ODI research study. The next phase of research, currently underway, is the Analysis and Modelling stage, which will deliver the core results from the survey on the values associated with water and wastewater service issues, along with details of the methodology used to derive them from the survey data described herein.

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Appendix A

Questionnaire

Water Company Research

This survey is designed to get your views on water and sewerage services. It is being undertaken on behalf of Ofwat, the regulator, and Consumer Council for Water (CCW), the consumer organisation which represents the interests of water and sewerage customers in England and Wales.

The research will be used to help water companies plan investment in their service from 2025, and will influence your future water services and bills.

This research is being conducted by Accent, an independent research agency on behalf of Ofwat and CCW.

NOT PANEL: Anyone completing the survey will be eligible for a £10 voucher (either an Amazon voucher, an M&S voucher or a One4All voucher). Alternatively, we can donate your incentive to WaterAid. Details on how to claim your voucher are given at the end of the survey.

The questionnaire will take about 10 minutes to complete.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society and your data will be treated in accordance with the Data Protection Act 2018. If you would like to confirm Accent's credentials type Accent in the search box at: https://www.mrs.org.uk/researchbuyersguide.

You do not have to answer any question you do not wish to and you may terminate the interview at any point.

QA IF PAF: Please enter the **Unique ID** that is printed on the top right of your letter.

Please enter the **PIN** number that is printed on the top right of your letter.

Q1. Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party, including Ofwat, CCW and your water company, unless you give permission (or unless we are legally required to do so). Our privacy statement is available at https://www.accent-mr.com/privacy-policy/.

Do you agree to proceeding with the interview on this basis?

Yes
No **THANK AND CLOSE IF ONLINE**

Q2. **ASK HH ONLY:** Do you or any of your close family work in market research or for a water company?

Yes **THANK & CLOSE**
No

Q3. **IF NHH ASK:** We would like you to think about the site at #ADDRESS, POSTCODE# (SPID=#SPID#) when responding to this survey.

Are you solely or jointly responsible as the decision maker for your organisation's water and wastewater service at that property?

Yes
No **THANK AND CLOSE**

Q3b Does **HH ONLY:** your **NHH ONLY:** that property have a septic tank or cess pit? If you do have one, this would mean that your property is **not** connected to the main sewer and you would periodically arrange to have the septic tank emptied.

Yes **THANK & CLOSE**
No

Q4. **IF PANEL ASK (OTHERWISE GO TO Q8):** Please tell us the beginning of your postcode. So if your full postcode is ME14 3BN please just tell us ME14 3. (This will be used to check who supplies your water and wastewater services)

IF HH AND REFUSE GO TO Q6

Q5. **IF PANEL AND DIFFERENT WATER AND WASTEWATER**: Based on your postcode area, we believe your clean water service company should be #WATER COMPANY# and your wastewater service company should be #WASTEWATER COMPANY#. You may receive separate bills from each organisation or one combined bill. Is that correct?
IF PANEL AND SAME WATER AND WASTEWATER: Based on your postcode area, we believe your clean water service and wastewater service company should be #WATER COMPANY#. Is that correct?

Yes **GO TO Q8**
No **GO TO Q6**
Don't know **GO TO Q8**

Q6. **IF HH:** Which water company supplies clean water to your home?

Affinity Water
Anglian Water
Bournemouth Water
Bristol Water
Cambridge Water
Essex & Suffolk Water
Hafren Dyfrdwy
Hartlepool Water
Northumbrian Water
Portsmouth Water
Severn Trent Water
South East Water

Southern Water
South Staffs Water
South West Water
Sutton & East Surrey (SES) Water
Thames Water
United Utilities
Welsh Water/Dŵr Cymru
Wessex Water
Yorkshire Water
Other (Please specify) **THEN THANK AND CLOSE**
Don't know **THANK AND CLOSE**
None **THANK AND CLOSE**

Q7. **IF HH:** Which company provides wastewater (sewerage) services to your home?

Anglian Water
Hafren Dyfrdwy
Northumbrian Water
Severn Trent Water
Southern Water
South West Water
Thames Water
United Utilities
Welsh Water/Dŵr Cymru
Wessex Water
Yorkshire Water
Other (please specify) **THEN THANK AND CLOSE**
Don't know **THANK AND CLOSE**
None **THANK AND CLOSE**

Q8. **IF HH:** Are you the person in your household who is responsible, either solely or jointly, for paying for your water services bill?

I have complete responsibility for payment
I share responsibility for payment with others in my household
I have no responsibility
Don't know

BILLPAYER : = CODE 1 OR 2
NONBILLPAYER : = CODE 3-4

Q9. **IF HH** Which of the following age groups do you fall into?

Under 18 **THANK AND CLOSE**
18-29
30-64
65 or older
Prefer not to say
USE HH QUOTA IF PANEL

Q10. **IF HH** What is your sex? (A question about gender identity will follow)

Male
Female
USE HH QUOTA IF PANEL

Q10a **IF HH:** Is the gender you identify with the same as your sex registered at birth? **We would like to collect this to ensure that people of all backgrounds are represented in the study, but you do**

not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.

Yes
No (type in gender identity)
Prefer not to say

Q11. **IF ONE SUPPLIER FOR WATER AND WASTEWATER DON'T ASK (BUT CODE AS ONE BILL FOR BOTH SERVICES) IF HH & BILLPAYER:** Do you receive separate bills for water and sewerage services or one bill for both services?

Separate bills
One bill for both services
Don't know

Q12b **IF HH & BILLPAYER:** How often do you make payment for water and sewerage services?

Annually
Every six months
Every month, over eight months of the year
Every month
Other (please specify)
Don't know **GO TO Q14**

Q13 **IF HH & BILLPAYER AND Q12B=1, 4-5 ASK:** How much, roughly, do you pay for water and sewerage services each month, or in total for a year? The month amounts assume that the bills are paid evenly over a 12-month period, but some customers pay over a different number of months.
IF HH & BILLPAYER AND Q12B=3 ASK: How much, roughly, do you pay for water and sewerage services for each of the eight months, or in total for a year?
IF HH & BILLPAYER AND Q12B=2 ASK: How much, roughly, do you pay for water and sewerage services every 6 months, or in total for a year?
IF NHH AND NO BILLING DATA FROM SAMPLE: Which of the following bands do you estimate that your organisation's annual total water bill at your premises falls into – that's the amount for both water and sewerage services.

IF HH and 12B=1, 4 or 5: Less than £10 per month/Less than £120 per year
IF HH and 12B=1, 4 or 5: £10 - £19.99 per month/£120 - £239.99 per year
IF HH and 12B=1, 4 or 5: £20 - £29.99 per month/£240 - £359.99 per year
IF HH and 12B=1, 4 or 5: £30 - £39.99 per month/£360 - £479.99 per year
IF HH and 12B=1, 4 or 5: £40 - £59.99 per month/£480 - £719.99 per year
IF HH and 12B=1, 4 or 5: £60 - £79.99 per month/£720 - £959.99 per year
IF HH and 12B=1, 4 or 5: £80 or more per month /£960 or more per year
IF HH and 12B=3: Less than £15 per month/Less than £120 per year
IF HH and 12B=3: £15 - £29.99 per month/£120 - £239.99 per year
IF HH and 12B=3: £30 - £39.99 per month/£240 - £319.99 per year
IF HH and 12B=3: £40 - £59.99 per month/£320 - £479.99 per year
IF HH and 12B=3: £60 - £89.99 per month/£480 - £719.99 per year
IF HH and 12B=3: £90 - £119.99 per month/£720 - £959.99 per year
IF HH and 12B=3: £120 or more per month /£960 or more per year
IF HH and 12B=2: Less than £60 every 6 months/Less than £120 per year
IF HH and 12B=2: £60 - £119.99 every 6 months /£120 - £239.99 per year
IF HH and 12B=2: £120 - £179.99 every 6 months /£240 - £359.99 per year
IF HH and 12B=2: £180 - £239.99 every 6 months /£360 - £479.99 per year
IF HH and 12B=2: £240 - £359.99 every 6 months /£480 - £719.99 per year
IF HH and 12B=2: £360- £479.99 every 6 months /£720 - £959.99 per year

IF HH and 12B=2: £480 or more every 6 months /£960 or more per year
IF NHH: Less than £1,000 per year
IF NHH: £1,000 to £5,000 per year
IF NHH: £5,000 to £25,000 per year
IF NHH: More than £25,000 per year
I'm not sure
TIMESTAMP

Service issues

Q14 Have you ever experienced any of the following **NHH ONLY:** at this property? *ROTATE* **Please tick one or more**

Unexpected water supply interruption
Planned water supply interruption
Unexpected low pressure
Boil water notice
Do not drink notice
Discolouration of water coming out of your tap
A change to the taste and/or smell of your tap water
Sewer flooding: inside your property
Sewer flooding: outside your property
Hosepipe ban
Emergency drought restrictions **(e.g. tap water being cut off on a rota basis to conserve supplies)**
Pollution in a river
Pollution in the sea near a beach
Other (please specify)
I haven't experienced any of these GO TO Q15

Q14b IF ONE BELOW IN Q14 ASK: Have you experienced the following in the last 12 months NHH ONLY: at this property?
IF BOTH BELOW IN Q14 ASK: Have you experienced any of the following in the last 12 months NHH ONLY: at this property?

IF TICKED IN Q14: Discolouration of water coming out of your tap
IF TICKED IN Q14: A change to the taste and/or smell of your tap water

Use of rivers and canals in the UK

IF HH: We would like to now find out a bit more about your use of rivers and canals in the UK.

Q15 IF HH: How often do you, or anyone in your household, use rivers or canals in the UK for any of the following activities?

	Often (more than six times a year)	**Sometimes** (between one and five times a year)	**Rarely** (less than once a year)	**Never**
ter contact activities (e.g. canoeing, rowing, rafting, paddleboarding, swimming, paddling)				
hing				
lking, running, cycling or sitting nearby or other activities on or around the water (e.g. narrowboating, other types of boating)				

Use of beaches and the sea in the UK

Q16 IF HH: How often do you, or anyone in your household, use the beach or sea in the UK for any of the following activities?

	Often (more than six times a year)	**Sometimes** (between one and five times a year)	**Rarely** (less than once a year)	**Never**
ter contact activities (e.g. surfing, windsurfing, dinghy sailing, canoeing, paddleboarding, swimming, paddling)				
hing				
lking, running, cycling or sitting or playing nearby or other activities on or around the water (e.g. other types of boating)				

Use of hosepipe or sprinkler

Q16a How often does [IF HH] your household [IF NHH] this property use a hosepipe or sprinkler for any purpose (e.g. washing/cleaning, or watering plants)?

Often (more than six times a year)
Sometimes (between one and five times a year)
Rarely (less than once a year)
Never

TIMESTAMP

Impact of service issues

You are now going to be shown a series of ten short questions where you will be asked to choose between two different scenarios for your water or wastewater service.

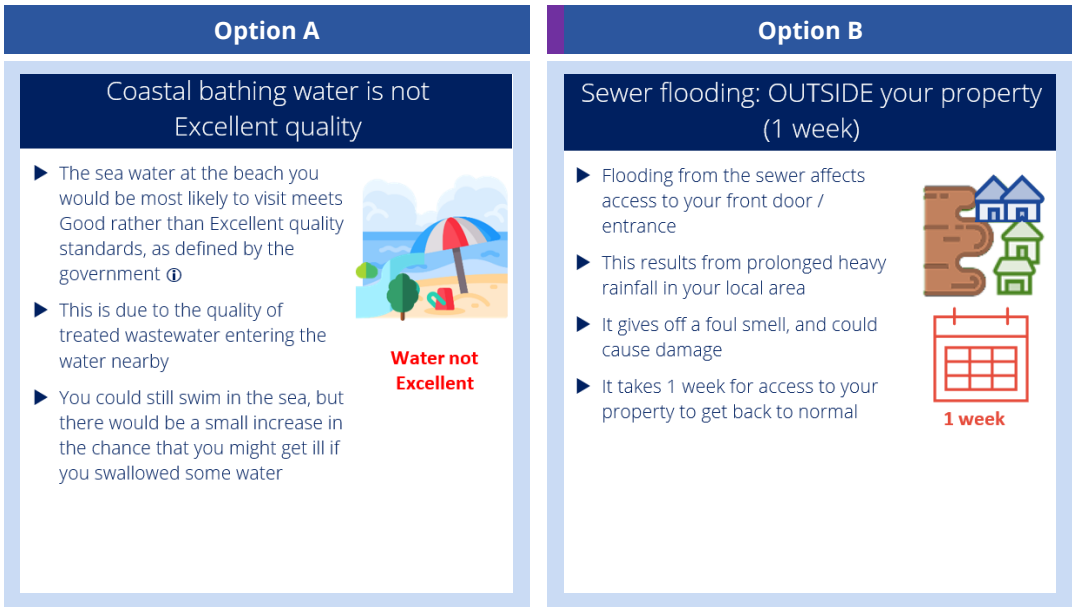
Please consider, and then compare the scenarios carefully, and then **choose the one which would have the most impact** on your IF HH: household IF NHH: organisation if it were to happen.

Some of the scenarios would affect your IF HH: own IF NHH: organisation's property whereas others would affect your local area. When comparing the impact that each would have, please:

- **do** consider any concerns you may have for your local or regional environment; but
- **don't** consider any impacts on other people outside your IF HH: household IF NHH: organisation - other people will answer for themselves!

On some of the options you will see an ⓘ. Please click on this to see some more information about the option.

Q17 Which of these would have the most impact on your IF HH: household IF NHH: organisation?



Q17b Why did you choose this option?

Q18 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q19 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q20 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q21 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q22 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q23 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q24 Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q24b Which of these would have the most impact on your IF HH: household IF NHH: organisation?

Q24c Which of these would have the most impact on your IF HH: household IF NHH: organisation?

TIMESTAMP

Q25 We would now like to ask you a few questions about the choices you have just made. How strongly do you agree or disagree with the following statements about the choices you have just made?

	Strongly disagree	Disagree	Neither	Agree	rongly agree
as able to understand the choices					
und the options believable					
choices were based on how much impact I thought each option would have on my [IF HH] household [IF NHH] organisation.					
und it easy to choose between the options					
H ONLY: I found it easy to answer with this specific property in mind					

Q26 **ASK IF Q25R1 = 1 OR 2. OTHERS GO TO Q27:** Why were you unable to understand the choices?

Q27 **ASK IF Q25R2 = 1 OR 2. OTHERS GO TO Q28:** What was not believable about the options shown?

Q28 **ASK IF Q25R3 = 1 OR 2. OTHERS GO TO Q29:** What were the main factors driving your choices if not the impact that each would have on your [IF HH] household [IF NHH] organisation?

Q29 **ASK IF Q25R4 = 1 OR 2. OTHERS GO TO NEXT SECTION:** Why was it difficult choosing between the options?

Q29B **ASK IF 0.5 = 1 OR 2. OTHERS GO TO NEXT SECTION:** Why was it difficult to answer with this specific property in mind?

TIMESTAMP

Compensation for service issues

The following questions will each present you with a choice between:

a) experiencing a service issue and receiving compensation from your water company,

or

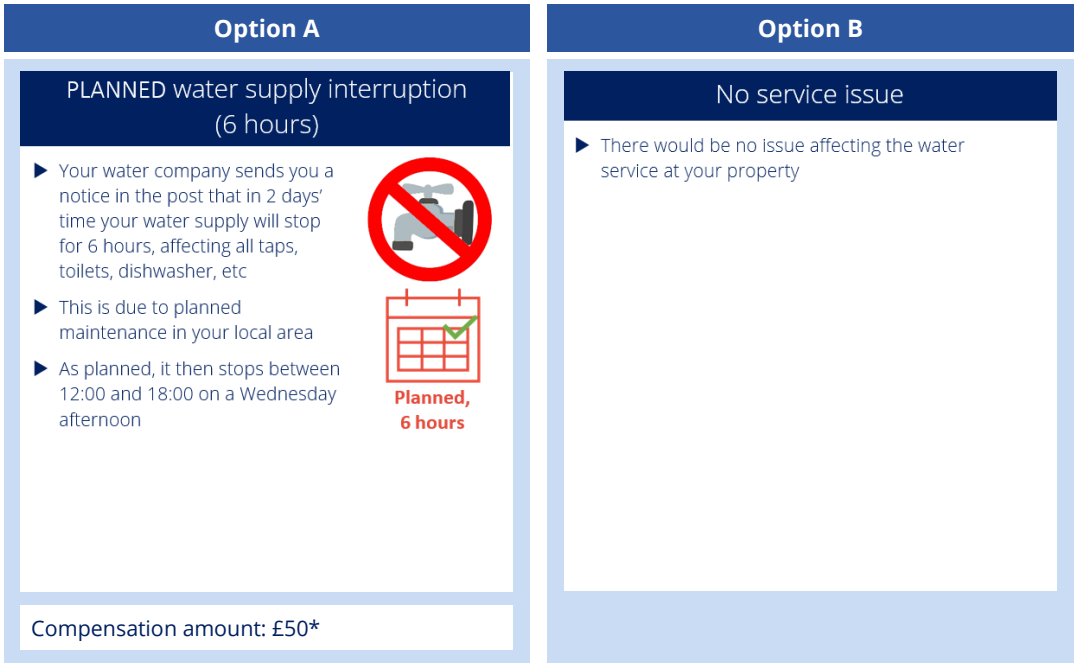
b) not experiencing the issue and not receiving any compensation.

In each question, the type of service issue and the compensation amount will vary. The amounts will not necessarily reflect current compensation entitlements and may exceed these levels - substantially in some cases.

The purpose of these questions is to see if the amounts shown are enough to make up for the impact on your [IF HH] household [IF NHH] organisation from the service issue shown. It is important to consider each amount at face value, even if it seems higher than you would imagine might be offered.

RANDOMISE ORDER OF SERVICE ISSUES SHOWN IN Q30-Q31.

Q30 Which option would you prefer?



IF BILLPAYER OR NHH: *Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

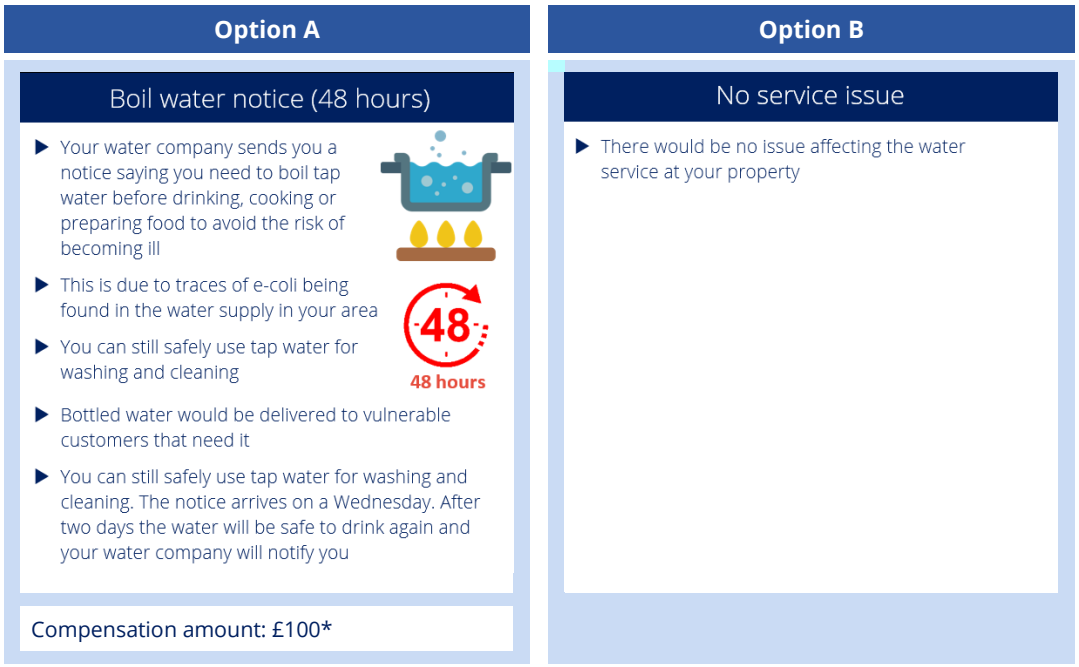
IF NON-BILLPAYER: *Compensation would be paid automatically, and within 7 days, by sending a cheque to your household.

If Option A Compensation level=50% of Q30 value
If Option B Compensation level =2*Q30 value
Then add in follow up question (Q30a) containing new compensation amounts.

Q30a Which option would you prefer?

Q30d [IF Q30=B AND Q30a=B] Why did you choose this option?

Q31 Which option would you prefer?



IF BILLPAYER OR NHH: *Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

IF NON-BILLPAYER: *Compensation would be paid automatically, and within 7 days, by sending a cheque to your household.

If Option A Compensation level=50% of Q31 value
If Option B Compensation level =2*Q31 value
Then add in follow up question (Q31B) containing new compensation amounts.

Q31B Which option would you prefer?

Q31C **[IF Q31=B AND Q31B=B]** Why did you choose this option?

TIMESTAMP

Q32 We would now like to ask you a few questions about the choices you have just made. How strongly do you agree or disagree with the following statements about the choices you have just made?

	Strongly disagree	Disagree	Neither	Agree	rongly agree
as able to understand the choices					
und the options believable					
choices were based on how much impact I thought each option would have on my [IF HH] household [IF NHH] organisation and whether the amount of money shown was enough to compensate for this					
und it easy to choose between the options					

Q33 **ASK IF Q32R1 = 1 OR 2. OTHERS GO TO Q34**: Why were you unable to understand the choices?

Q34 **ASK IF Q32R2 = 1 OR 2. OTHERS GO TO Q35:** What was not believable about the options shown?

Q35 **ASK IF Q32R3 = 1 OR 2. OTHERS GO TO Q36**: What were the main factors driving your choices?

Q36 **ASK IF Q32R4 = 1 OR 2. OTHERS GO TO NEXT SECTION:** Why was it difficult choosing between the options?

Q36X **IF NHH:** Thinking about the choices you have just made about the impacts of different service issues and the compensation amounts shown, would you say that your responses would be similar across most other sites for which you manage the water and wastewater services?

Yes **USE # IN 96 CELLS**
No **DO NOT USE # IN 96 CELLS**
I am not responsible for any other sites
Don't know **DO NOT USE # IN 96 CELLS**

TIMESTAMP

Attitudes to environmental costs

Q37 **IF HH:** Please look at the following five statements about pollution control and the costs of pollution control. Which one do you agree with most? ***SINGLE CHOICE***

The environment should be protected from pollution and improved, **regardless of cost**
The environment should be protected from pollution and improved, **provided costs are not excessive**
The environment should be protected from pollution and improved, **but at no additional cost**
Further protection and improvements to the environment are not needed, and **the costs for this should fall**
Standards for protection and improvement to the environment are already too high and should be relaxed, **and costs should fall**
Don't know

Q38 Please use this box to leave any further comments about this topic or this survey. Please note, your water company will be unable to respond to individuals.

TIMESTAMP

Classification Questions

We will now ask you a few questions about you and your IF HH household IF NHH organisation. These will only be used to ensure we have spoken to a wide range of customers. All responses you give will be kept strictly confidential.

Q39 **IF HH:** How would you describe the occupation type of the main income earner in your household?

Higher managerial/ professional/ administrative (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees), top level civil servant/public service employee)
Intermediate managerial/ professional/ administrative (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government)

Supervisory or clerical/ junior managerial/ professional/ administrative (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc)
Skilled manual work (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc)
Semi or unskilled manual work (e.g. Manual worker, apprentice to skilled trade, Caretaker, Park keeper, non-HGV driver, shop assistant)
Unemployed
Retired
Student
Prefer not to say **GO TO Q44**

Q40 **IF Q39=7 (RETIRED) ASK:** Does the main income earner have a state pension, a private pension or both?

State only
Private only
Both
Prefer not to say **GO TO Q44**

Q41 **IF Q40= PRIVATE OR BOTH ASK:** How would you describe the main income earner's occupation type before retirement?

Higher managerial/ professional/ administrative (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees), top level civil servant/public service employee)
Intermediate managerial/ professional/ administrative (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government)
Supervisory or clerical/ junior managerial/ professional/ administrative (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc)
Skilled manual work (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/ Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc)
Semi or unskilled manual work. (e.g. Manual worker, apprentice to skilled trade, Caretaker, Park keeper, non-HGV driver, shop assistant)
None of these
Prefer not to say

Q44 **IF HH:** To which of these ethnic groups do you consider you belong to? **We would like to collect this to ensure that people of all backgrounds are represented in the study, but you do not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.**

WHITE
English, Welsh, Scottish, Northern Irish or British
Irish
Gypsy or Irish Traveller
Any other White background

MIXED
White and Black Caribbean
White and Black African
White and Asian
Any other Mixed background

ASIAN OR ASIAN BRITISH
Indian
Pakistani
Bangladeshi
Chinese
Any other Asian background

BLACK OR BLACK BRITISH
Caribbean
African
Any other Black background

OTHER ETHNIC GROUP
Arab
Any other ethnic group
Prefer not to say

Q45 **IF HH:** Thinking about all the people in your household, including yourself, how many people live here?

1 or 2
3 or 4
5 or more
Prefer not to say

Q46 **IF HH:** Please let us know if any of the following apply to you or a member of your household.
RANDOMISE ROWS
We would like to collect this to ensure that people with a variety of particular needs are represented in the study, but you do not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.

Disabled or suffers from a debilitating illness
Has a learning difficulty
Relies on water for medical reasons
Visually impaired (i.e. struggles to read even with glasses)
Over the age of 75 years old
Speaks English as a second language
Deaf or hard of hearing
A new parent
None of these statements apply
Prefer not to say

Q47 **IF HH:** Which of the following statements do you most agree with? ***Please remember, this research is entirely confidential and that it is only by understanding the views of people who are struggling to pay their household bills (eg gas, electricity, telephone etc) that change can be made.***

I can always afford to pay my household bills
I can usually afford to pay my household bills
I sometimes struggle to pay my household bills
I usually struggle to pay my household bills
I always struggle to pay my household bills
Prefer not to say

Q47a. **IF HH:** Thinking about your household finances, do you expect your household to be better off, worse off or about the same in 12 months' time?

Better off
The same
Worse off
Don't know

Q47b **IF NHH:** How does your organisation mainly use water at this property? **You can choose more than one answer**

The manufacturing process which is essential to the running of your organisation (e.g. to power machinery, agricultural production etc.)
The supply of services your organisation provides (e.g. cleaning services etc.)
An ingredient or part of the product or service your organisation provides (e.g. food or drink, chemical, cosmetics manufacturer etc.)
Normal domestic use for your organisation's customers and employees (e.g. customer toilets, supply of drinking water)
None of the above
Don't Know

Q48 **IF NHH:** How many sites in the UK does your organisation operate from?

1
2
3
4
5-10
11-50
51-250
250+
Prefer not to say

Q49 **IF NHH:** How many employees does your organisation have in the UK?

None, sole trader
Fewer than 4 employees
4 to 49 employees
50 to 249 employees
250+ employees
Prefer not to say

Q50 **IF NHH:** Which of the following best defines the core activity of your organisation?

Agriculture, forestry and fishing
Mining and quarrying
Energy or water service & supply
Manufacturing
Construction
Wholesale and retail trade (including motor vehicles repair)
Transport and storage
Hotels & catering
IT and Communication
Finance and insurance activities
Real estate activities
Professional, scientific and technical activities
Administrative and Support Service Activities
Public administration and defence
Education
Human health and social work activities
Arts, entertainment and recreation
Other service activities
Other (please specify)
Prefer not to say

Q52 **IF HH:** Do you have a water meter?
IF NHH: Does this property have a water meter?

Yes
No
Don't know
Prefer not to say

Q53 **IF HH AND Q52=1 ASK:** Did you ask to have a water meter fitted for your household?

Yes
No
Prefer not to say

Q54 **IF HH AND POSTAL:** Which of these best describes you?

I have never used the internet
I have used the internet but do not have regular access to it
I have regular access to the internet
Prefer not to say

Q54b Earlier in the questionnaire we asked you to make choices between experiencing a service issue and receiving compensation, or not experiencing the service issue. Different amounts were shown to different survey participants as part of this study to test how much money would be needed, in principle, to compensate for the impact that the service issue would have on customers.

We wish to reiterate that the amounts shown were not the same as those you would be currently entitled to expect if you were to experience the service issue at your property.

Q55 **IF NON PANEL:** We mentioned that there would be a £10 incentive for completing this survey. This incentive will be administered by Accent, within 4 weeks.

This can be sent as an Amazon, Marks & Spencer or One4All voucher by email **[PAPER ONLY:** or by post]. Alternatively, we can donate your incentive to WaterAid. Which would you prefer?

Amazon voucher by email **COLLECT EMAIL ADDRESS**
M&S Voucher by email **COLLECT EMAIL ADDRESS**
One4All by email **COLLECT EMAIL ADDRESS**
PAPER ONLY: Amazon voucher by post **COLLECT ADDRESS**
PAPER ONLY: M&S voucher by post **COLLECT ADDRESS**
PAPER ONLY: One4All voucher by post **COLLECT ADDRESS**
Donation to Water Aid

If you have any queries about your incentive, please contact us on 0131 220 8770.

Q56 Thank you. Would you be willing to be contacted again if we need to clarify any of the answers you have given today?

Yes
No

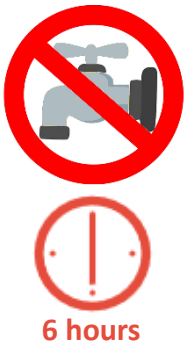
Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential.

Appendix B

Service issues included in research

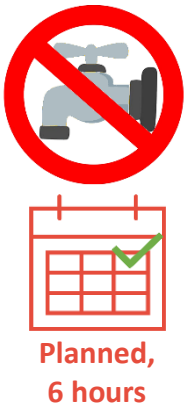
UNEXPECTED water supply interruption (6 hours)

- Your water supply stops working without warning, affecting taps, toilets, dishwasher, etc
- This is due to a burst pipe in your local area
- It stops for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon



PLANNED water supply interruption (6 hours)

- Your water company sends you a notice in the post that in 2 days' time your water supply will stop for 6 hours, affecting all taps, toilets, dishwasher, etc
- This is due to planned maintenance in your local area
- As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon



UNEXPECTED water supply interruption (24 hours)

- Your water supply stops working without warning, affecting all taps, toilets, dishwasher, etc
- This is due to a burst pipe in your local area
- Water would be made available nearby to collect in buckets or bottles and vulnerable people would be delivered water directly
- It stops for 24 hours, from a Wednesday morning to a Thursday morning

24 hours

UNEXPECTED low water pressure (6 hours)

- Your tap water supply starts running with a low pressure, without warning
- This is due to a burst pipe in your local area
- It takes longer to fill a kettle, sink or bath and a shower would be weak. Some appliances like dishwashers and washing machines may not work properly
- This happens for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon

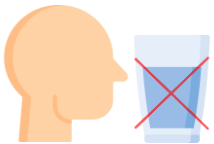
6 hours

Boil water notice (48 hours)

- Your water company sends you a notice saying you need to boil tap water before drinking, cooking or preparing food to avoid the risk of becoming ill
- This is due to traces of e-coli being found in the water supply in your area
- You can still safely use tap water for washing and cleaning

- Bottled water would be delivered to vulnerable customers that need it
- You can still safely use tap water for washing and cleaning. The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you

Do not drink notice (48 hours)



- Your water company sends you a notice saying not to drink your tap water, or use it for cooking or preparing food, to avoid the risk of becoming ill
- This is due to traces of a harmful chemical being found in the water supply in your area

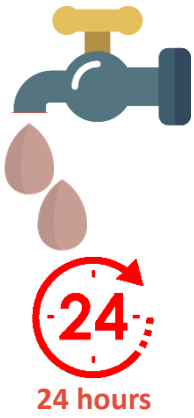
- You can still safely use tap water for washing and cleaning
- Water would be made available nearby to collect in your own buckets or bottles and vulnerable people would be delivered bottled water directly
- The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you

Discoloured water (6 hours)

- Your tap water starts running light brown, without warning
- This is due to traces of sediment from pipes being disturbed
- The water is safe to drink, but you shouldn't use a dishwasher or washing machine until the water runs clear again
- This happens for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon

Discoloured water (24 hours)

- Your tap water starts running light brown, without warning
- This is due to traces of sediment from pipes being disturbed
- The water is safe to drink, but you shouldn't use a dishwasher or washing machine until the water runs clear again
- This happens for 24 hours from a Wednesday morning



Water taste and smell (6 hours)

- Your tap water starts tasting or smelling different, without warning
- This is due to chlorine, and the taste and smell is like a swimming pool
- The water is safe to drink, and for use in the dishwasher or washing machine
- This happens for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon

6 hours

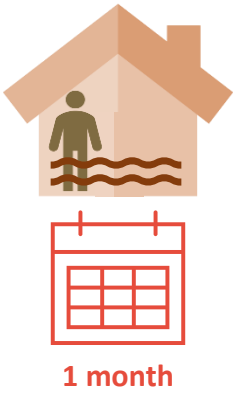
Water taste and smell (24 hours)

- Your tap water starts tasting or smelling different, without warning
- This is due to chlorine, and the taste and smell is like a swimming pool
- The water is safe to drink, and for use in the dishwasher or washing machine
- This happens for 24 hours from a Wednesday morning

24 hours

Sewer flooding: INSIDE your property (1 month)

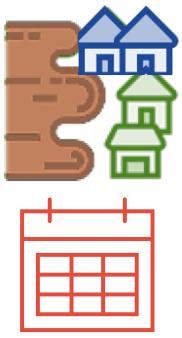
- Flooding from the sewer gets inside your property, affecting your living areas
- This results from prolonged heavy rainfall in your local area
- It gives off a foul smell, and damages floors, walls and furniture
- It takes 1 month for your property to get back to normal



1 month

Sewer flooding: OUTSIDE your property (1 week)

- Flooding from the sewer affects access to your front door / entrance
- This results from prolonged heavy rainfall in your local area
- It gives off a foul smell, and could cause damage
- It takes 1 week for access to your property to get back to normal



1 week

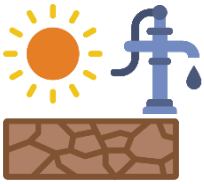
Hosepipe ban (5 months)

- Your water company sends you a notice saying you must not use a hosepipe or sprinkler
- This is due to an extended period of dry weather leading to a water shortage
- The hosepipe ban begins in May and lasts for 5 months

5 months

Emergency drought restrictions (2 months)

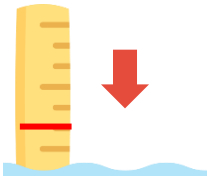
- Your water company cuts off the tap water supply from 2pm to 7am every day
- This is due to a severe drought leading to an extreme water shortage in your area
- Standpipes would be available nearby to collect water in your own buckets or bottles and vulnerable people would be delivered bottled water directly
- The restrictions begin in July and last for 2 months



2 months

Low flows in rivers NEARBY (2 months)

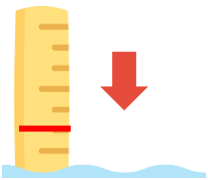
- The water level in a nearby stretch of river (less than 5 miles away) has a flow that is lower than the minimum it should be naturally
- This could affect habitats and harm the wildlife living in and by the river
- This is due to a combination of extended dry weather and water being taken for public water supply
- This happens from July and lasts for 2 months



Nearby, 2 months

Low flows in rivers ELSEWHERE (2 months)

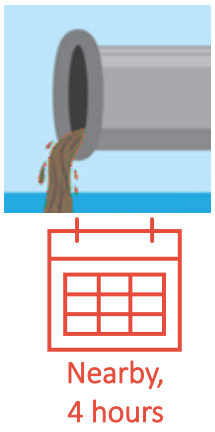
- The water level in a stretch of river somewhere in your region, but not nearby, has a flow that is lower than the minimum it should be naturally
- This could harm the wildlife living in and by the river
- This is due to a combination of extended dry weather and water being taken for public water supply
- This happens from July and lasts for 2 months



Elsewhere, 2 months

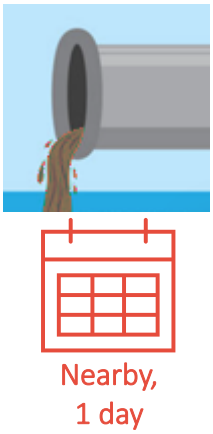
Storm overflow NEARBY (4 hours)

- Rainwater mixed with untreated sewage spills into a nearby stretch of river (less than 5 miles away)
- This is due to prolonged heavy rainfall and is allowed by the regulator to reduce the risk of sewer flooding
- There is no damage to the river and visible pollution is minor



Minor pollution incident NEARBY (1 day)

- Untreated sewage spills into a nearby stretch of river (less than 5 miles away)
- This is due to sewerage equipment failure
- The damage to the river and visible pollution would be minor
- The spill begins on a Wednesday and lasts for 4 hours. The river is then back to normal after 1 day



Significant pollution incident NEARBY (4 weeks)

- Untreated sewage spills into a nearby stretch of river (less than 5 miles away)
- This is due to sewerage equipment failure
- The damage to the river would be significant, including possible harm to wildlife and health risks to river users, plus visible sewage litter
- The spill begins on a Wednesday and lasts for 2 days. The river is then back to normal after 4 weeks

Nearby, 4 weeks

Storm overflow ELSEWHERE (4 hours)

- Rainwater mixed with untreated sewage spills into a stretch of river somewhere in your region, but not nearby
- This is due to prolonged heavy rainfall and is allowed by the regulator to reduce the risk of sewer flooding
- There is no damage to the river and visible pollution is minor

Elsewhere, 4 hours

Minor pollution incident ELSEWHERE (1 day)

- Untreated sewage spills into a stretch of river somewhere in your region, but not nearby
- This is due to sewerage equipment failure
- The damage to the river and visible pollution would be minor
- The spill begins on a Wednesday and lasts for 4 hours. The river is then back to normal after 1 day

Elsewhere , 1 day

Significant pollution incident ELSEWHERE (4 weeks)

- Untreated sewage spills into a stretch of river somewhere in your region, but not nearby
- This is due to sewerage equipment failure
- The damage to the river would be significant, including possible harm to wildlife and health risks to river users, plus visible sewage litter
- The spill begins on a Wednesday and lasts for 2 days. The river is then back to normal after 4 weeks

Elsewhere , 4 weeks

River water NEARBY is not High quality

- A nearby stretch of river (less than 5 miles away) meets Medium rather than High quality standards, as defined by the government ⓘ
- This is due to a variety of factors, including the quality of treated wastewater, the river flow level, and the run-off from the surrounding area
- This has some effect on habitats for fish and wildlife, and can lead to algae (green slime) in the water

Local

River water ELSEWHERE is not High quality

- A stretch of river **in your region, but** not nearby, meets Medium rather than High quality standards, as defined by the government ⓘ
- This is due to a variety of factors, including the quality of treated wastewater, the river flow level, and the run-off from the surrounding area
- This has some effect on habitats for fish and wildlife, and can lead to algae (green slime) in the water

Elsewhere

ⓘ button show card:

River water quality level	Definition
High	• There will be a diverse and natural range of plants, insects, fish, birds and other animals. ▪ Water will generally have the right degree of clarity and there will be no noticeable pollution. • Water will generally be suitable for contact activities, such as rowing or swimming
Medium	▪ There will be plants, insects, fish, birds and other animals, but there will be some fish and other wildlife missing. ▪ Water will be slightly murky or discoloured in parts, and there will sometimes be visible pollution in some places, and some algal blooms. ▪ Water may be suitable for contact activities in some areas but not others.
Low	▪ There may be limited or no plants or wildlife, or the water may be dominated by a single plant species. ▪ Water will generally be murky or discoloured, and may sometimes be bad-smelling in some places. There may also regularly be visible pollution in some places, and frequent algal blooms. ▪ Water will be unsuitable for contact activities.

Coastal bathing water is not Excellent quality

- The sea water at the beach you would be most likely to visit meets Good rather than Excellent quality standards, as defined by the government ⓘ
- This is due to the quality of treated wastewater entering the water nearby
- You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water

Water not Excellent

ⓘ button show card:

Bathing water quality level	Definition
Excellent	The highest standard which means the bathing water is consistently very clean, with less than a 3%, or 3 in 100, chance of a stomach upset.
Good	Between 'Sufficient' and 'Excellent'. This means there is between a 3% and a 5% chance of a stomach upset.
Sufficient	The minimum standard required for bathing water which means there is between a 5% and an 8% chance of a stomach upset.

Coastal bathing water is neither Excellent nor Good quality

- The sea water at the beach you would be most likely to visit meets Sufficient rather than Good or Excellent quality standards, as defined by the government ⓘ
- This is due to the quality of treated wastewater entering the water nearby
- You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water

Water not Excellent

ⓘ button show card:
(Same as for previous bathing water quality card)

No service issue

- There would be no issue affecting the water service at your property

Appendix C

Survey invitations and reminders

Household invitation letter (English)

Ofwat

CCW
The voice for water consumers
Llais defnyddwyr dŵr

Accent

Southside
105 Victoria Street
London
SW1E 6QT

Unique ID number: XXXX
PIN: nnnn

Dear Sir/Madam

Water services research: complete a 10 minute survey and receive a £10 voucher

This letter has been sent to you by Accent, an independent market research company, on behalf of Ofwat, the water regulator, and Consumer Council for Water (CCW), the consumer organisation which represents the interests of water and sewerage customers in England and Wales.

We are looking for people to complete a survey about their views on water and sewerage services.

The research will be used to help water companies plan investment in their service from 2025 and will influence your future water services and bills.

Anyone completing the survey will be eligible for a £10 voucher (an Amazon voucher, an M&S voucher or a One4All voucher). Alternatively we can donate your incentive to WaterAid. Details on how claim your voucher are given at the end of the survey.

How to take part

The questionnaire will take about 10 minutes to complete. You can complete the survey online by entering the following link or scanning the QR code: **https://acsvy.com/3551survey** and entering your Unique ID (XXXX) and PIN (nnnn).

Alternatively, you can fill the survey in by pen and paper. To request a paper version of the survey please call FREEPHONE 0800 099 6245. You will be asked to leave your name and the 4 digit unique ID number (XXXX) and PIN (nnnn). We will send a paper version of the survey by post, and include a FREEPOST return envelope for you to post it back.

The final date for us to receive completed surveys is **30th July 2022.** Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

If you have any questions, please don't hesitate to contact the research team at WaterResearch@accent-mr.com

Yours faithfully

Chris Heywood on behalf of the study team

MARKET RESEARCH SERVICES ISO 20252 MA Cert No. 0462 UKAS PRODUCT CERTIFICATION 036

MRS Evidence Matters™ Company Partner

CYBER ESSENTIALS

MRS Net Zero Pledge

Registered in London No. 2231083. Accent Marketing & Research Limited Registered Address: 30 City Road, London, EC1Y 2AB

Household invitation letter (Welsh)

Ofwat

CCW
The voice for water consumers
Llais defnyddwyr dŵr

Accent

Southside
105 Victoria Street
Llundain
SW1E 6QT

Rhif Adnabod Unigryw: XXXX
PIN: nnnn

Annwyl Syr/Madam

Ymchwil gwasanaethau dŵr: llenwch arolwg 10 munud i dderbyn taleb £10

Anfonwyd y llythyr hwn atoch gan Accent, cwmni ymchwil i'r farchnad annibynnol, ar ran Ofwat, y rheoleiddiwr dŵr, a'r Cyngor Defnyddwyr Dŵr (CCW), y sefydliad defnyddwyr sy'n cynrychioli buddiannau cwsmeriaid dŵr a charthffosiaeth yng Nghymru a Lloegr.

Rydym ni'n chwilio am bobl i gwblhau arolwg am eu barn am wasanaethau dŵr a charthffosiaeth (dŵr gwastraff).

Bydd yr ymchwil yn cael ei defnyddio i helpu cwmnïau dŵr i gynllunio buddsoddiad yn eu gwasanaeth o 2025 a bydd yn dylanwadu ar eich gwasanaethau a'ch biliau dŵr yn y dyfodol.

Bydd pawb sy'n cwblhau'r arolwg yn gymwys i gael taleb gwerth £10 (naill ai Amazon, M&S neu One4All). Fel arall, gallwch ddewis ein bod yn gwneud cyfraniad cyfatebol i elusen WaterAid. Mae'r manylion ar sut i gael eich taleb i'w gweld ar ddiwedd yr arolwg.

Sut i gymryd rhan

Bydd yn cymryd tua 10 munud i gwblhau'r arolwg. Gallwch gwblhau'r arolwg ar-lein drwy fynd i'r ddolen ganlynol neu sganio'r cod QR: **https://acsvy.com/3551welsh** a theipio'ch rhif adnabod unigryw (XXXX) a'ch PIN (nnnn).

Fel arall, gallwch lenwi'r arolwg ar bapur. I ofyn am fersiwn bapur o'r arolwg, ffoniwch RHADFFÔN 0800 099 6245. Bydd gofyn i chi adael eich enw a'r rhif adnabod unigryw 4 digid (XXXX) a'ch PIN (nnnn). Byddwn yn anfon fersiwn papur o'r arolwg drwy'r post, ac yn cynnwys amlen ddychwelyd RHADBOST i chi ar gyfer ei bostio'n ôl.

Y dyddiad olaf gallwn dderbyn eich arolwg wedi ei gwblhau ydy **4 Awst 2022.** Bydd Ofwat a CCW yn hynod ddiolchgar am eich cymorth ond mae cwblhau'r arolwg yn gwbl ddewisol.

Os oes gennych unrhyw gwestiynau, mae croeso i chi gysylltu â'r tîm ymchwil yn WaterResearch@accent-mr.com

Yn gywir

Chris Heywood ar ran tîm yr astudiaeth

ISO 20252 Cert No. 0462 · UKAS 036 · MRS Evidence Matters Company Partner · CYBER ESSENTIALS

Non-household invitation letter (English)

Ofwat

CCW
The voice for water consumers
Llais defnyddwyr dŵr

Accent

Southside
105 Victoria Street
London
SW1E 6QT

Unique ID number: XXXX
PIN: nnnn

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The research will be used to help water companies plan investment in their service from 2025 and will influence your future water services and bills.

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You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Policy on Ofwat's website.

How to take part

The questionnaire will take about 10 minutes to complete. You can complete the survey online by entering the following link or scanning the QR code: **https://acsvy.com/3551nhh** and entering your Unique ID (XXXX) and PIN (nnnn).

The final date for us to receive completed surveys is **30th July 2022.** Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

If you have any questions, please don't hesitate to contact the research team at WaterResearch@accent-mr.com

Yours faithfully

Chris Heywood on behalf of the study team

MARKET RESEARCH SERVICES ISO 20252 MRQA Cert No. 0462 UKAS PRODUCT CERTIFICATION 006

MRS Evidence Matters™ Company Partner

CYBER ESSENTIALS

MRS Net Zero Pledge

Non-household invitation letter (Welsh)

Ofwat

CCW
The voice for water consumers
Llais defnyddwyr dŵr

Accent

Southside
105 Victoria Street
Llundain
SW1E 6QT

Rhif Adnabod Unigryw: XXXX
PIN: nnnn

Annwyl Syr/Madam

Ymchwil gwasanaethau dŵr: llenwch arolwg 10 munud i dderbyn taleb gwerth £10

Anfonwyd y llythyr hwn atoch gan Accent, cwmni ymchwil i'r farchnad annibynnol, ar ran Ofwat, y rheoleiddiwr dŵr, a'r Cyngor Defnyddwyr Dŵr (CCW), y sefydliad defnyddwyr sy'n cynrychioli buddiannau cwsmeriaid dŵr a charthffosiaeth (dŵr gwastraff) yng Nghymru a Lloegr.

Mae astudiaeth ar raddfa fawr yn cael ei chynnal i gasglu barn cartrefi. Mae hefyd yn bwysig bod safbwyntiau busnesau a sefydliadau yn cael eu hystyried. Dyma gyfle i fynegi'ch barn. Felly, rydym ni'n chwilio am fusnesau a sefydliadau i gwblhau arolwg am eu barn am wasanaethau dŵr a charthffosiaeth.

Bydd yr ymchwil yn cael ei defnyddio i helpu cwmnïau dŵr i gynllunio buddsoddiad yn eu gwasanaeth o 2025 a bydd yn dylanwadu ar eich gwasanaethau a'ch biliau dŵr yn y dyfodol.

Bydd pawb sy'n cwblhau'r arolwg yn gymwys i gael taleb gwerth £10 (naill ai Amazon, M&S neu One4All). Fel arall, gallwch ddewis ein bod yn gwneud cyfraniad cyfatebol i elusen WaterAid. Mae'r manylion ar sut i gael eich taleb i'w gweld ar ddiwedd yr arolwg.

Gallwch ddysgu mwy am arolygon Ofwat a'r hyn fydd yn digwydd i'r wybodaeth a gesglir yn y Polisi Preifatrwydd ar wefan Ofwat.

Sut i gymryd rhan

Bydd yn cymryd tua 10 munud i gwblhau'r arolwg. Gallwch gwblhau'r arolwg ar-lein drwy fynd i'r ddolen ganlynol neu sganio'r cod QR: **https://acsvy.com/3551nhhw** a theipio'ch rhif adnabod unigryw (XXXX) a'ch PIN (nnnn).

Y dyddiad olaf gallwn dderbyn eich arolwg wedi ei gwblhau ydy **14 Awst 2022.** Bydd Ofwat a CCW yn hynod ddiolchgar am eich cymorth ond mae cwblhau'r arolwg yn gwbl ddewisol.

Os oes gennych unrhyw gwestiynau, mae croeso i chi gysylltu â'r tîm ymchwil yn WaterResearch@accent-mr.com

Yn gywir

Chris Heywood ar ran tîm yr astudiaeth

ISO 20252 Cert No. 0462 UKAS 006

MRS Evidence Matters Company Partner

CYBER ESSENTIALS

Cofrestrwyd yn Llundain Rhif. 2231083. Accent Marketing & Research Limited CYFEIRIAD COFRESTREDIG: 30 City Road, London, EC1Y 2AB

Household reminder letter (English)

Accent
Southside
105 Victoria Street
London
SW1E 6QT

Unique ID number: XXXX
PIN: nnnn

Dear Sir/Madam

Water services research: Still time to complete a 10 minute survey and receive a £10 voucher - REMINDER

This letter has been sent to you by Accent, an independent market research company, on behalf of Ofwat, the water regulator, and Consumer Council for Water (CCW), the consumer organisation which represents the interests of water and sewerage customers in England and Wales.

We are still looking for people to complete a survey about their views on water and sewerage services. The research will be used to help water companies plan investment in their service from 2025 and will influence your future water services and bills.

Anyone completing the survey will be eligible for a £10 voucher (an Amazon voucher, an M&S voucher or a One4All voucher). Alternatively we can donate your incentive to WaterAid. Details on how claim your voucher are given at the end of the survey.

How to take part

The questionnaire will take about 10 minutes to complete. You can complete the survey online by entering the following link or scanning the QR code: **https://acsvy.com/3551survey** and entering your Unique ID (XXXX) and PIN (nnnn).

The final date for us to receive completed surveys is **30th July 2022.** Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

If you have any questions, please don't hesitate to contact the research team at WaterResearch@accent-mr.com

Yours faithfully

Chris Heywood on behalf of the study team

Non-household reminder letter (English)

Accent
Southside
105 Victoria Street
London
SW1E 6QT

Unique ID number: XXXX
PIN: nnnn

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How to take part

The questionnaire will take about 10 minutes to complete. You can complete the survey online by entering the following link or scanning the QR code: **https://acsvy.com/3551nhh** and entering your Unique ID (XXXX) and PIN (nnnn).

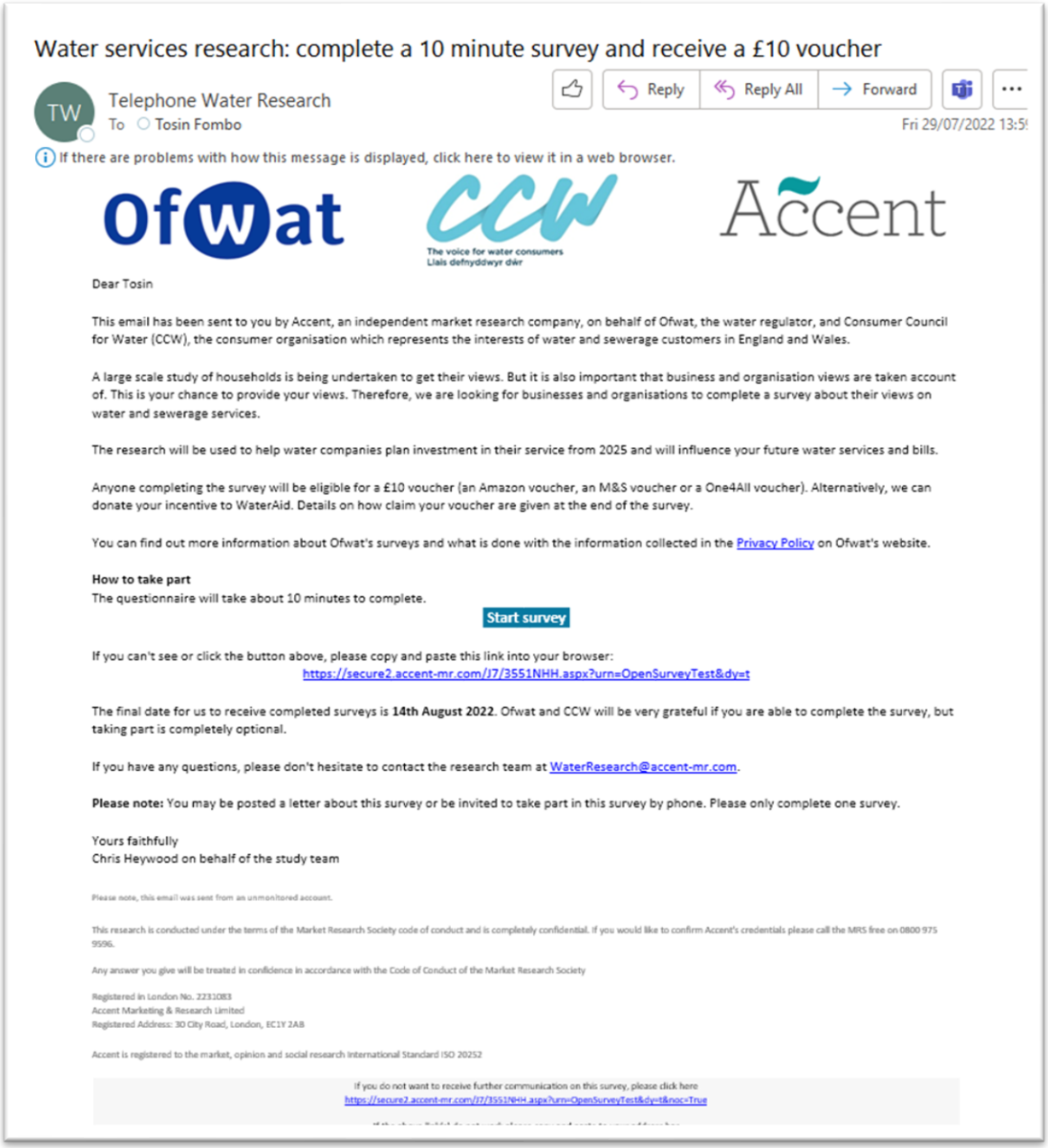
The final date for us to receive completed surveys is **25th September 2022**. Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

If you have any questions, please don't hesitate to contact the research team at WaterResearch@accent-mr.com

Yours faithfully

Chris Heywood on behalf of the study team

Non-household invitation email (English)



Water services research: complete a 10 minute survey and receive a £10 voucher

TW Telephone Water Research
To Tosin Fombo

Reply | Reply All | Forward

Fri 29/07/2022 13:5

If there are problems with how this message is displayed, click here to view it in a web browser.

Ofwat

CCW
The voice for water consumers
Llais defnyddwyr dŵr

Accent

Dear Tosin

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You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Policy on Ofwat's website.

How to take part
The questionnaire will take about 10 minutes to complete.

Start survey

If you can't see or click the button above, please copy and paste this link into your browser:
https://secure2.accent-mr.com/J7/3551NHH.aspx?urn=OpenSurveyTest&dy=t

The final date for us to receive completed surveys is **14th August 2022**. Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

If you have any questions, please don't hesitate to contact the research team at WaterResearch@accent-mr.com.

Please note: You may be posted a letter about this survey or be invited to take part in this survey by phone. Please only complete one survey.

Yours faithfully
Chris Heywood on behalf of the study team

Please note, this email was sent from an unmonitored account.

This research is conducted under the terms of the Market Research Society code of conduct and is completely confidential. If you would like to confirm Accent's credentials please call the MRS free on 0800 975 9596.

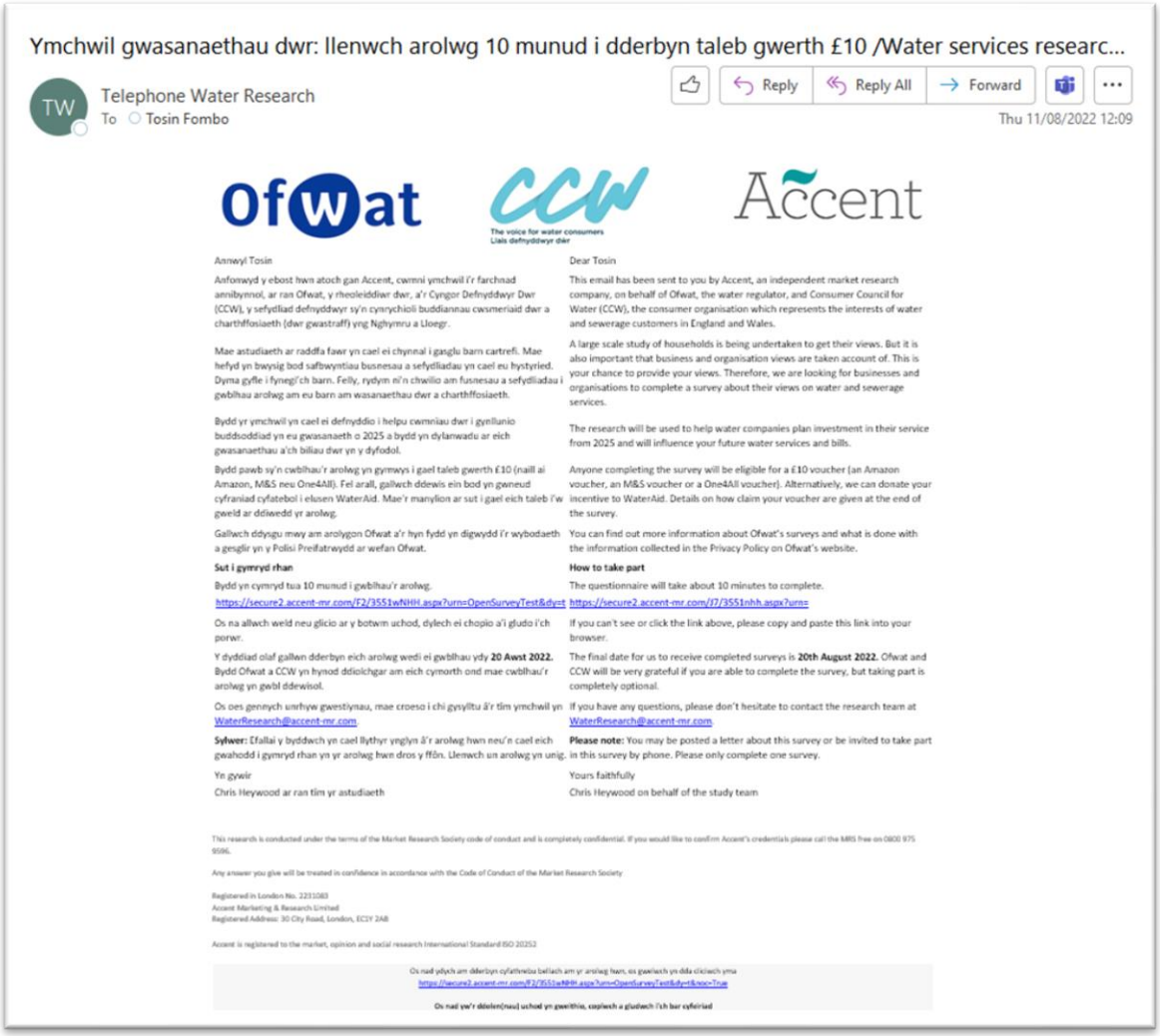
Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society

Registered in London No. 2231083
Accent Marketing & Research Limited
Registered Address: 30 City Road, London, EC1Y 2AB

Accent is registered to the market, opinion and social research International Standard ISO 20252

If you do not want to receive further communication on this survey, please click here
https://secure2.accent-mr.com/J7/3551NHH.aspx?urn=OpenSurveyTest&dy=t&noc=True

Non-household invitation email (English/Welsh)



Ymchwil gwasanaethau dwr: llenwch arolwg 10 munud i dderbyn taleb gwerth £10 /Water services researc...

TW Telephone Water Research
To Tosin Fombo

Reply | Reply All | Forward

Thu 11/08/2022 12:09

Ofwat | CCW The voice for water consumers Llais defnyddwyr dŵr | Accent

Annwyl Tosin

Anfonwyd y ebost hwn atoch gan Accent, cwmni ymchwil i'r farchnad annibynnol, ar ran Ofwat, y rheoleiddiwr dwr, a'r Cyngor Defnyddwyr Dwr (CCW), y sefydliad defnyddwyr sy'n cynrychioli buddiannau cwsmeriaid dwr a charthffosiaeth (dwr gwastraff) yng Nghymru a Lloegr.

Mae astudiaeth ar raddfa fawr yn cael ei chynnal i ganglu barn cartrefi. Mae hefyd yn bwysig bod safbwyntiau busnesau a sefydliadau yn cael eu hystyried. Dyma gyfle i fynegi'ch barn. Felly, rydym ni'n chwilio am fusnesau a sefydliadau i gwblhau arolwg am eu barn am wasanaethau dwr a charthffosiaeth.

Bydd yr ymchwil yn cael ei defnyddio i helpu cwmniau dwr i gynllunio buddsoddiad yn eu gwasanaeth o 2025 a bydd yn dylanwadu ar eich gwasanaethau a'ch biliau dwr yn y dyfodol.

Bydd pawb sy'n cwblhau'r arolwg yn gymwys i gael taleb gwerth £10 (naill ai Amazon, M&S neu One4All). Fel arall, gallwch ddewis ein bod yn gwneud cyfraniad cyfatebol i elusen WaterAid. Mae'r manylion ar sut i gael eich taleb i'w gweld ar ddiwedd yr arolwg.

Gallwch ddysgu mwy am arolygon Ofwat a'r hyn fydd yn digwydd i'r wybodaeth a gesglir yn y Polisi Preifatrwydd ar wefan Ofwat.

Sut i gymryd rhan

Bydd yn cymryd tua 10 munud i gwblhau'r arolwg.

https://secure2.accent-mr.com/F2/3551wNHH.aspx?urn=OpenSurveyTest&dyn=t

Os na allwch weld neu glicio ar y botwm uchod, dylech ei chopio a'i gludo i'ch porwr.

Y dyddiad olaf gallwn dderbyn eich arolwg wedi ei gwblhau ydy **20 Awst 2022.** Bydd Ofwat a CCW yn hynod ddiolchgar am eich cymorth ond mae cwblhau'r arolwg yn gwbl ddewisol.

Os oes gennych unrhyw gwestiynau, mae croeso i chi gysylltu â'r tîm ymchwil yn WaterResearch@accent-mr.com.

Sylwer: Efallai y byddwch yn cael llythyr ynglyn â'r arolwg hwn neu'n cael eich gwahodd i gymryd rhan yn yr arolwg hwn dros y ffôn. Llenwch un arolwg yn unig.

Yn gywir

Chris Heywood ar ran tîm yr astudiaeth

Dear Tosin

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A large scale study of households is being undertaken to get their views. But it is also important that business and organisation views are taken account of. This is your chance to provide your views. Therefore, we are looking for businesses and organisations to complete a survey about their views on water and sewerage services.

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You can find out more information about Ofwat's surveys and what is done with the information collected in the Privacy Policy on Ofwat's website.

How to take part

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https://secure2.accent-mr.com/f7/3551nhh.aspx?urn=

If you can't see or click the link above, please copy and paste this link into your browser.

The final date for us to receive completed surveys is **20th August 2022.** Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

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Please note: You may be posted a letter about this survey or be invited to take part in this survey by phone. Please only complete one survey.

Yours faithfully

Chris Heywood on behalf of the study team

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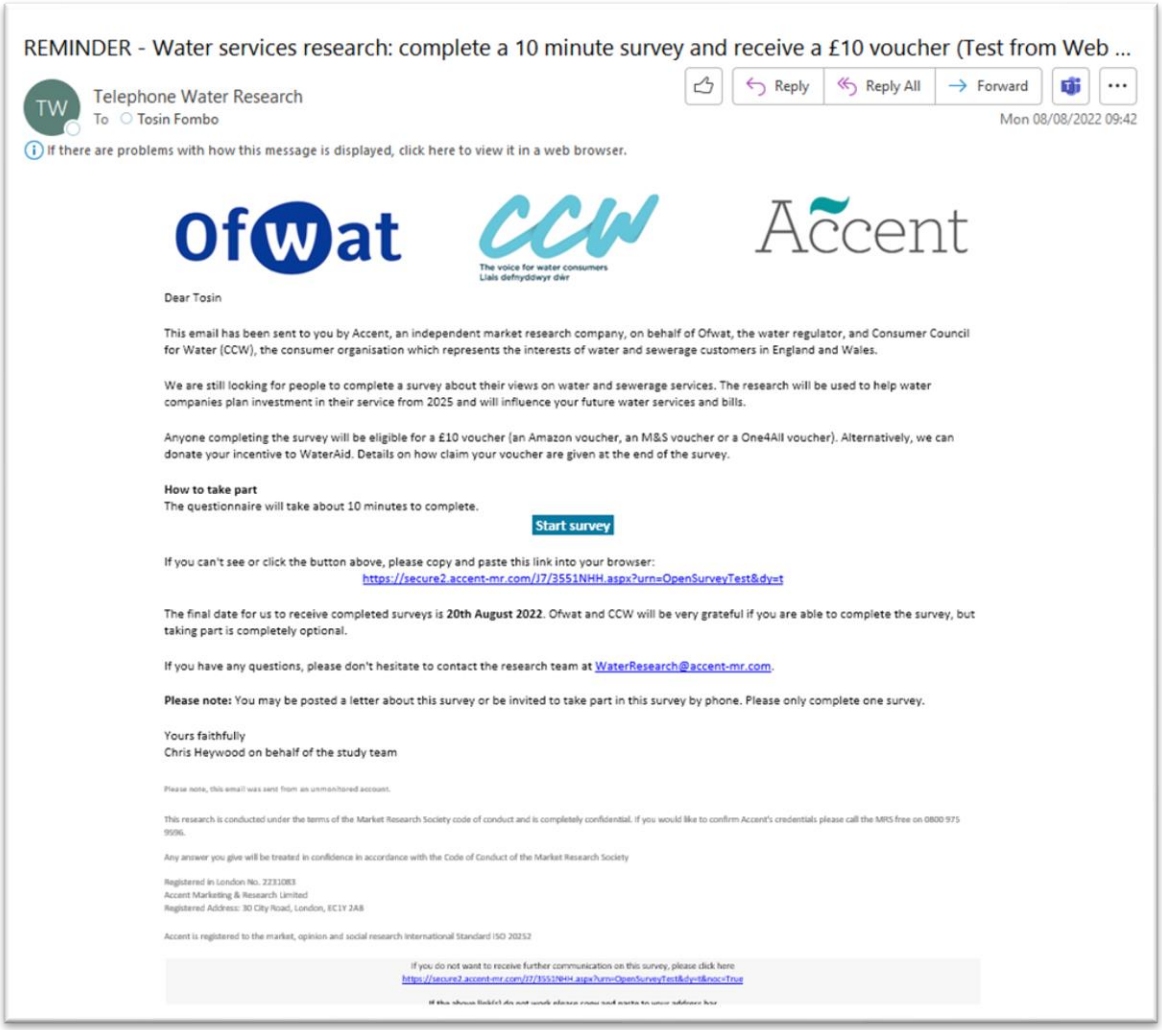
Accent Marketing & Research Limited
Registered Address: 30 City Road, London, EC1Y 2AB

Accent is registered to the market, opinion and social research International Standard ISO 20252

Os nad ydych am dderbyn cyfathrebu bellach am yr arolwg hwn, os gwelwch yn dda clicwch yma
https://secure2.accent-mr.com/F2/3551wNHH.aspx?urn=OpenSurveyTest&dyn=t&noo=True

Os nad yw'r ddolen(nau) uchod yn gweithio, copïwch a gludwch i'ch bar cyfeiriad

Non-household reminder email (English)



REMINDER - Water services research: complete a 10 minute survey and receive a £10 voucher (Test from Web ...

Reply | Reply All | Forward

TW Telephone Water Research
To Tosin Fombo
Mon 08/08/2022 09:42

If there are problems with how this message is displayed, click here to view it in a web browser.

Ofwat CCW The voice for water consumers Llais defnyddwyr dŵr Accent

Dear Tosin

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https://secure2.accent-mr.com/i7/3551NHH.aspx?urn=OpenSurveyTest&dy=t

The final date for us to receive completed surveys is **20th August 2022**. Ofwat and CCW will be very grateful if you are able to complete the survey, but taking part is completely optional.

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Chris Heywood on behalf of the study team

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If you do not want to receive further communication on this survey, please click here
https://secure2.accent-mr.com/i7/3551NHH.aspx?urn=OpenSurveyTest&dy=t&noc=True

Appendix D

Paper version of Household questionnaire

Water Company Research

This survey is designed to get your views on water and sewerage services. It is being undertaken on behalf of Ofwat, the regulator, and Consumer Council for Water (CCW), the consumer organisation which represents the interests of water and sewerage customers in England and Wales.

The research will be used to help water companies plan investment in their service from 2025, and will influence your future water services and bills.

This research is being conducted by Accent, an independent research agency on behalf of Ofwat and CCW.

Anyone completing the survey will be eligible for a £10 voucher (either an Amazon voucher, an M&S voucher or a One4All voucher). Alternatively, we can donate your incentive to WaterAid. Details on how to claim your voucher are given at the end of the survey.

The questionnaire will take about 10 minutes to complete.

Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society and your data will be treated in accordance with the Data Protection Act 2018. If you would like to confirm Accent's credentials type Accent in the search box at: https://www.mrs.org.uk/researchbuyersguide.

You do not have to answer any question you do not wish to and you may terminate the interview at any point.

QA Please enter the **Unique ID** that is printed on the top right of your letter.

Please enter the **PIN** number that is printed on the top right of your letter.

Q1 Any data collected over the course of this interview that could be used to identify you, such as your name, address, or other contact details, will be held securely and will not be shared with any third party, including Ofwat, CCW and your water company, unless you give permission (or unless we are legally required to do so). Our privacy statement is available at https://www.accent-mr.com/privacy-policy/.

Do you agree to proceeding with the interview on this basis?

☐ Yes
☐ No

Q2 Do you or any of your close family work in market research or for a water company?

☐ Yes
☐ No

Q2b Does your property have a septic tank or cess pit? If you do have one, this would mean that your property is **not** connected to the main sewer and you would periodically arrange to have the septic tank emptied.

☐ Yes
☐ No

Q4b Please tell us the first half of your postcode. So if your full postcode is ME14 3BN please just tell us ME14 3. (This will be used to check who supplies your water and wastewater services)

Q8 Are you the person in your household who is responsible, either solely or jointly, for paying for your water services bill?

☐ I have complete responsibility for payment
☐ I share responsibility for payment with others in my household
☐ I have no responsibility
☐ Don't know

Q9 Which of the following age groups do you fall into?

☐ Under 18
☐ 18-29
☐ 30-64
☐ 65 or older
☐ Prefer not to say

Q10 What is your sex? (A question about gender identity will follow)

☐ Male
☐ Female

Q10a Is the gender you identify with the same as your sex registered at birth? We would like to collect this to ensure that people of all backgrounds are represented in the study, but you do not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.

☐ Yes
☐ No (write in gender identity) ☐
☐ Prefer not to say

Q11 Do you receive separate bills for water and sewerage services or one bill for both services?

☐ Separate bills
☐ Combined bills
☐ Don't know

Q12b How often do you make payment for water and sewerage services?

- ☐ Annually
- ☐ Every six months
- ☐ Every month, over eight months of the year
- ☐ Every month
- ☐ Other (please specify) ____

Q13 How much, roughly, do you pay for water and sewerage services? **Please tick one only**

IF EVERY MONTH OR ANNUALLY

- ☐ Less than £10 per month/Less than £120 per year
- ☐ £10 - £19.99 per month/£120 - £239.99 per year
- ☐ £20 - £29.99 per month/£240 - £359.99 per year
- ☐ £30 - £39.99 per month/£360 - £479.99 per year
- ☐ £40 - £59.99 per month/£480 - £719.99 per year
- ☐ £60 - £79.99 per month/£720 - £959.99 per year
- ☐ £80 or more per month /£960 or more per year

IF EVERY MONTH OVER EIGHT MONTHS

- ☐ Less than £15 per month/Less than £120 per year
- ☐ £15 - £29.99 per month/£120 - £239.99 per year
- ☐ £30 - £39.99 per month/£240 - £319.99 per year
- ☐ £40 - £59.99 per month/£320 - £479.99 per year
- ☐ £60 - £89.99 per month/£480 - £719.99 per year
- ☐ £90 - £119.99 per month/£720 - £959.99 per year
- ☐ £120 or more per month /£960 or more per year

IF EVERY SIX MONTHS

- ☐ Less than £60 every 6 months/Less than £120 per year
- ☐ £60 - £119.99 every 6 months /£120 - £239.99 per year
- ☐ £120 - £179.99 every 6 months /£240 - £359.99 per year
- ☐ £180 - £239.99 every 6 months /£360 - £479.99 per year
- ☐ £240 - £359.99 every 6 months /£480 - £719.99 per year
- ☐ £360- £479.99 every 6 months /£720 - £959.99 per year
- ☐ £480 or more every 6 months /£960 or more per year
- ☐ I'm not sure

Service issues

Q14 Have you ever experienced any of the following? **Please tick one or more**

- ☐ Unexpected water supply interruption
- ☐ Planned water supply interruption
- ☐ Unexpected low pressure
- ☐ Boil water notice
- ☐ Do not drink notice
- ☐ Discolouration of water coming out of your tap
- ☐ A change to the taste and/or smell of your tap water
- ☐ Sewer flooding: inside your property
- ☐ Sewer flooding: outside your property
- ☐ Hosepipe ban
- ☐ Emergency drought restrictions (e.g. tap water being cut off on a rota basis to conserve supplies)
- ☐ Pollution in a river
- ☐ Pollution in the sea near a beach
- ☐ Other (please specify)
- ☐ I haven't experienced any of these **GO TO USE OF RIVERS AND CANALS IN THE UK**

Q14b Have you experienced the following in the last 12 months?

☐ Discolouration of water coming out of your tap
☐ A change to the taste and/or smell of your tap water

Use of rivers and canals in the UK

We would like to now find out a bit more about your use of rivers and canals in the UK.

Q15 How often do you, or anyone in your household, use rivers or canals in the UK for any of the following activities? **Please tick one in each row**

	Often (more than six times a year)	**Sometimes** (between one and five times a year)	**Rarely** (less than once a year)	**Never**
Water contact activities (e.g. canoeing, rowing, rafting, paddleboarding, swimming, paddling)	☐	☐	☐	☐
Fishing	☐	☐	☐	☐
Walking, running, cycling or sitting nearby or other activities on or around the water (e.g. narrowboating, other types of boating)	☐	☐	☐	☐

Use of beaches and the sea in the UK

Q16 How often do you, or anyone in your household, use the beach or sea in the UK for any of the following activities? **Please tick one in each row**

	Often (more than six times a year)	**Sometimes** (between one and five times a year)	**Rarely** (less than once a year)	**Never**
Water contact activities (e.g. surfing, windsurfing, dinghy sailing, canoeing, paddleboarding, swimming, paddling)	☐	☐	☐	☐
Fishing	☐	☐	☐	☐
Walking, running, cycling or sitting or playing nearby or other activities on or around the water (e.g. other types of boating)	☐	☐	☐	☐

Use of hosepipe or sprinkler

Q16a How often does your household use a hosepipe or sprinkler for any purpose (e.g. washing/cleaning, or watering plants)?

☐ Often (more than six times a year);
☐ Sometimes (between one and five times a year)
☐ Rarely (less than once a year)
☐ Never

Impact of service issues

You are now going to be shown a series of ten short questions where you will be asked to choose between two different scenarios for your water or wastewater service.

Please consider, and then compare the scenarios carefully, and then **choose the one which would have the most impact** on your household if it were to happen.

Some of the scenarios would affect your own property whereas others would affect your local area. When comparing the impact that each would have, please:

- **do** consider any concerns you may have for your local or regional environment; but
- **don't** consider any impacts on other people outside your household - other people will answer for themselves!

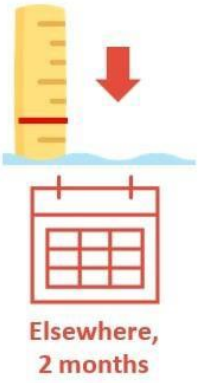
On some of the options you will see an ⓘ. Please read the notes below.

Q17 Which of these would have the most impact on your household?

Option A	**Option B**
PLANNED water supply interruption (6 hours) ▶ Your water company sends you a notice in the post that in 2 days' time your water supply will stop for 6 hours, affecting all taps, toilets, dishwasher, etc ▶ This is due to planned maintenance in your local area ▶ As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon  Planned, 6 hours	Water taste and smell (6 hours) ▶ Your tap water starts tasting or smelling different, without warning ▶ This is due to chlorine, and the taste and smell is like a swimming pool ▶ The water is safe to drink, and for use in the dishwasher or washing machine ▶ This happens for 6 hours, between 12:00 and 18:00 on a Wednesday afternoon  6 hours
3 ○	27 ○

Q17b Why did you choose this option?

Q18 Which of these would have the most impact on your household?

Option A	Option B
Coastal bathing water is not Excellent quality ▶ The sea water at the beach you would be most likely to visit meets Good rather than Excellent quality standards, as defined by the government ⓘ ▶ This is due to the quality of treated wastewater entering the water nearby ▶ You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water  **Water not Excellent**	**Low flows in rivers ELSEWHERE (2 months)** ▶ The water level in a stretch of river somewhere in your region, but not nearby, has a flow that is lower than the minimum it should be naturally ▶ This could affect habitats and harm the wildlife living in and by the river ▶ This is due to a combination of extended dry weather and water being taken for public water supply ▶ This happens from July and lasts for 2 months  **Elsewhere, 2 months**
24	15
○	○

Q19 Which of these would have the most impact on your household?

Option A	Option B
Discoloured water (24 hours) ▶ Your tap water starts running light brown, without warning ▶ This is due to traces of sediment from pipes being disturbed ▶ The water is safe to drink, but you shouldn't use a dishwasher or washing machine until the water runs clear again ▶ This happens for 24 hours from a Wednesday morning  **24 hours**	**Do not drink notice (48 hours)** ▶ Your water company sends you a notice saying not to drink your tap water, or use it for cooking or preparing food, to avoid the risk of becoming ill ▶ This is due to traces of a harmful chemical being found in the water supply in your area ▶ You can still safely use tap water for washing and cleaning ▶ Water would be made available nearby to collect in your own buckets or bottles and vulnerable people would be delivered bottled water directly ▶ The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you  **48 hours**
8	7
○	○

Q20 Which of these would have the most impact on your household?

Option A

Hosepipe ban (5 months)

- Your water company sends you a notice saying you must not use a hosepipe or sprinkler
- This is due to an extended period of dry weather leading to a water shortage
- The hosepipe ban begins in May and lasts for 5 months

12 ○

Option B

River water NEARBY is not High quality

- A nearby stretch of river (less than 5 miles away) meets Medium rather than High quality standards, as defined by the government ⓘ
- This is due to a variety of factors, including the quality of treated wastewater, the river flow level, and the run-off from the surrounding area
- This has some effect on habitats for fish and wildlife, and can lead to algae (green slime) in the water

22 ○

ⓘ

River water quality level	Definition
High	▪ There will be a diverse and natural range of plants, insects, fish, birds and other animals. ▪ Water will generally have the right degree of clarity and there will be no noticeable pollution. • Water will generally be suitable for contact activities, such as rowing or swimming
Medium	▪ There will be plants, insects, fish, birds and other animals, but there will be some fish and other wildlife missing. ▪ Water will be slightly murky or discoloured in parts, and there will sometimes be visible pollution in some places, and some algal blooms. ▪ Water may be suitable for contact activities in some areas but not others.
Low	▪ There may be limited or no plants or wildlife, or the water may be dominated by a single plant species. ▪ Water will generally be murky or discoloured, and may sometimes be bad-smelling in some places. There may also regularly be visible pollution in some places, and frequent algal blooms. ▪ Water will be unsuitable for contact activities.

Q21 Which of these would have the most impact on your household?

Option A	Option B
UNEXPECTED water supply interruption (24 hours) ▶ Your water supply stops working without warning, affecting taps, toilets, dishwasher, etc ▶ This is due to a burst pipe in your local area ▶ Water would be made available nearby to collect in buckets or bottles and vulnerable people would be delivered water directly ▶ It stops for 24 hours, from a Wednesday morning to a Thursday morning   24 hours	**Significant pollution incident ELSEWHERE (4 weeks)** ▶ Untreated sewage spills into a stretch of river somewhere in your region, but not nearby ▶ This is due to sewerage equipment failure ▶ The damage to the river would be significant, including possible harm to wildlife and health risks to river users, plus visible sewage litter ▶ The spill begins on a Wednesday and lasts for 2 days. The river is then back to normal after 4 weeks   Elsewhere, 4 weeks
2	21
○	○

Q22 Which of these would have the most impact on your household?

Option A	Option B
Coastal bathing water is not Excellent quality ▶ The sea water at the beach you would be most likely to visit meets Good rather than Excellent quality standards, as defined by the government ⓘ ▶ This is due to the quality of treated wastewater entering the water nearby ▶ You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water  Water not Excellent	**Sewer flooding: OUTSIDE your property (1 week)** ▶ Flooding from the sewer affects access to your front door / entrance ▶ This results from prolonged heavy rainfall in your local area ▶ It gives off a foul smell, and could cause damage ▶ It takes 1 week for access to your property to get back to normal   1 week
24	11
○	○

ⓘ

Bathing water quality level	Definition
Excellent	The highest standard which means the bathing water is consistently very clean, **with less than a 3%, or 3 in 100, chance of a stomach upset**.
Good	Between 'Sufficient' and 'Excellent'. This means there is **between a 3% and a 5% chance of a stomach upset**.
Sufficient	The minimum standard required for bathing water which means there is **between a 5% and an 8% chance of a stomach upset**.

Q23 Which of these would have the most impact on your household?

Option A

Coastal bathing water is neither Excellent nor Good quality

- The sea water at the beach you would be most likely to visit meets Sufficient rather than Good or Excellent quality standards, as defined by the government ⓘ
- This is due to the quality of treated wastewater entering the water nearby
- You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water

Water neither Excellent nor Good

25

Option B

Boil water notice (48 hours)

- Your water company sends you a notice saying you need to boil tap water before drinking, cooking or preparing food to avoid the risk of becoming ill
- This is due to traces of e-coli being found in the water supply in your area
- You can still safely use tap water for washing and cleaning
- Bottled water would be delivered to vulnerable customers that need it
- The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you

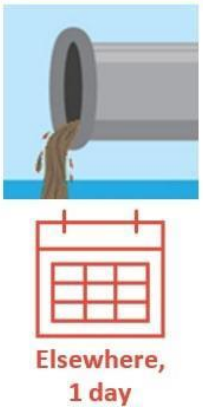
48 hours

6

ⓘ

Bathing water quality level	Definition
Excellent	The highest standard which means the bathing water is consistently very clean, **with less than a 3%, or 3 in 100, chance of a stomach upset**.
Good	Between 'Sufficient' and 'Excellent'. This means there is **between a 3% and a 5% chance of a stomach upset**.
Sufficient	The minimum standard required for bathing water which means there is **between a 5% and an 8% chance of a stomach upset**.

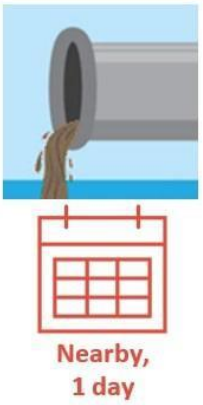
Q24 Which of these would have the most impact on your household?

Option A	Option B
Minor pollution incident ELSEWHERE (1 day) ▶ Untreated sewage spills into a stretch of river somewhere in your region, but not nearby ▶ This is due to sewerage equipment failure ▶ The damage to the river and visible pollution would be minor ▶ The spill begins on a Wednesday and lasts for 4 hours. The river is then back to normal after 1 day  Elsewhere, 1 day	**River water NEARBY is not High quality** ▶ A nearby stretch of river (less than 5 miles away) meets Medium rather than High quality standards, as defined by the government ⓘ ▶ This is due to a variety of factors, including the quality of treated wastewater, the river flow level, and the run-off from the surrounding area ▶ This has some effect on habitats for fish and wildlife, and can lead to algae (green slime) in the water  Nearby
20 ○	22 ○

ⓘ

River water quality level	Definition
High	▪ There will be a diverse and natural range of plants, insects, fish, birds and other animals. ▪ Water will generally have the right degree of clarity and there will be no noticeable pollution. • Water will generally be suitable for contact activities, such as rowing or swimming
Medium	▪ There will be plants, insects, fish, birds and other animals, but there will be some fish and other wildlife missing. ▪ Water will be slightly murky or discoloured in parts, and there will sometimes be visible pollution in some places, and some algal blooms. ▪ Water may be suitable for contact activities in some areas but not others.
Low	▪ There may be limited or no plants or wildlife, or the water may be dominated by a single plant species. ▪ Water will generally be murky or discoloured, and may sometimes be bad-smelling in some places. There may also regularly be visible pollution in some places, and frequent algal blooms. ▪ Water will be unsuitable for contact activities.

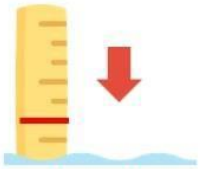
Q24b Which of these would have the most impact on your household?

Option A	Option B
Coastal bathing water is neither Excellent nor Good quality ▶ The sea water at the beach you would be most likely to visit meets Sufficient rather than Good or Excellent quality standards, as defined by the government ⓘ ▶ This is due to the quality of treated wastewater entering the water nearby ▶ You could still swim in the sea, but there would be a small increase in the chance that you might get ill if you swallowed some water  **Water neither Excellent nor Good**	**Minor pollution incident NEARBY (1 day)** ▶ Untreated sewage spills into a nearby stretch of river (less than 5 miles away) ▶ This is due to sewerage equipment failure ▶ The damage to the river and visible pollution would be minor ▶ The spill begins on a Wednesday and lasts for 4 hours. The river is then back to normal after 1 day  **Nearby, 1 day**
25 ○	17 ○

ⓘ

Bathing water quality level	Definition
Excellent	The highest standard which means the bathing water is consistently very clean, **with less than a 3%, or 3 in 100, chance of a stomach upset**.
Good	Between 'Sufficient' and 'Excellent'. This means there is **between a 3% and a 5% chance of a stomach upset**.
Sufficient	The minimum standard required for bathing water which means there is **between a 5% and an 8% chance of a stomach upset**.

Q24c Which of these would have the most impact on your household?

Option A	Option B
Significant pollution incident ELSEWHERE (4 weeks) ▶ Untreated sewage spills into a stretch of river somewhere in your region, but not nearby ▶ This is due to sewerage equipment failure ▶ The damage to the river would be significant, including possible harm to wildlife and health risks to river users, plus visible sewage litter ▶ The spill begins on a Wednesday and lasts for 2 days. The river is then back to normal after 4 weeks   **Elsewhere, 4 weeks**	**Low flows in rivers ELSEWHERE (2 months)** ▶ The water level in a stretch of river somewhere in your region, but not nearby, has a flow that is lower than the minimum it should be naturally ▶ This could affect habitats and harm the wildlife living in and by the river ▶ This is due to a combination of extended dry weather and water being taken for public water supply ▶ This happens from July and lasts for 2 months   **Elsewhere, 2 months**
21 ○	15 ○

Q25 We would now like to ask you a few questions about the choices you have just made. How strongly do you agree or disagree with the following statements about the choices you have just made?
Please tick one in each row

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I was able to understand the choices	☐	☐	☐	☐	☐
I found the options believable	☐	☐	☐	☐	☐
My choices were based on how much impact I thought each option would have on my household	☐	☐	☐	☐	☐
I found it easy to choose between the options	☐	☐	☐	☐	☐

Q26 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I WAS ABLE TO UNDERSTAND THE CHOICES'**: Why were you unable to understand the choices?

Q27 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I FOUND THE OPTIONS BELIEVABLE':** What was not believable about the options shown?

Q28 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'MY CHOICES WERE BASED ON HOW MUCH IMPACT I THOUGHT EACH OPTION WOULD HAVE ON MY HOUSEHOLD':** What were the main factors driving your choices if not the impact that each would have on your household?

Q29 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I FOUND IT EASY TO CHOOSE BETWEEN THE OPTIONS':** Why was it difficult choosing between the options?

Compensation for service issues

The following questions will each present you with a choice between:

a) experiencing a service issue and receiving compensation from your water company, or

b) not experiencing the issue and not receiving any compensation.

In each question, the type of service issue and the compensation amount will vary. The amounts will not necessarily reflect current compensation entitlements and may exceed these levels - substantially in some cases.

The purpose of these questions is to see if the amounts shown are enough to make up for the impact on your household from the service issue shown. It is important to consider each amount at face value, even if it seems higher than you would imagine might be offered.

Q30 Which option would you prefer?

Option A	Option B
PLANNED water supply interruption (6 hours) ▶ Your water company sends you a notice in the post that in 2 days' time your water supply will stop for 6 hours, affecting all taps, toilets, dishwasher, etc ▶ This is due to planned maintenance in your local area ▶ As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon  Planned, 6 hours Compensation amount: £ 5.00*	No service issue ▶ There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ **GO TO Q30c** ○ **GO TO Q30b**

Q30b Which option would you prefer?

Option A	Option B
PLANNED water supply interruption (6 hours) ▶ Your water company sends you a notice in the post that in 2 days' time your water supply will stop for 6 hours, affecting all taps, toilets, dishwasher, etc ▶ This is due to planned maintenance in your local area ▶ As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon  Planned, 6 hours Compensation amount: £ 10.00*	No service issue ▶ There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ **GO TO Q31** ○ **GO TO Q31**

Q30c Which option would you prefer?

Option A

PLANNED water supply interruption (6 hours)

- Your water company sends you a notice in the post that in 2 days' time your water supply will stop for 6 hours, affecting all taps, toilets, dishwasher, etc
- This is due to planned maintenance in your local area
- As planned, it then stops between 12:00 and 18:00 on a Wednesday afternoon

Compensation amount: £ 2.50*

Option B

No service issue

- There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ ○

Q31 Which option would you prefer?

Option A

Boil water notice (48 hours)

- Your water company sends you a notice saying you need to boil tap water before drinking, cooking or preparing food to avoid the risk of becoming ill
- This is due to traces of e-coli being found in the water supply in your area
- You can still safely use tap water for washing and cleaning
- Bottled water would be delivered to vulnerable customers that need it
- You can still safely use tap water for washing and cleaning. The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you

Compensation amount: £ 5.00*

Option B

No service issue

- There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ **GO TO Q31b** ○ **GO TO Q31c**

Q31b Which option would you prefer?

Option A	Option B
Boil water notice (48 hours) ▶ Your water company sends you a notice saying you need to boil tap water before drinking, cooking or preparing food to avoid the risk of becoming ill  ▶ This is due to traces of e-coli being found in the water supply in your area ▶ You can still safely use tap water for washing and cleaning  ▶ Bottled water would be delivered to vulnerable customers that need it ▶ You can still safely use tap water for washing and cleaning. The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you Compensation amount: £ 10.00*	**No service issue** ▶ There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ **GO TO Q32** ○ **GO TO Q32**

Q31c Which option would you prefer?

Option A	Option B
Boil water notice (48 hours) ▶ Your water company sends you a notice saying you need to boil tap water before drinking, cooking or preparing food to avoid the risk of becoming ill  ▶ This is due to traces of e-coli being found in the water supply in your area ▶ You can still safely use tap water for washing and cleaning  ▶ Bottled water would be delivered to vulnerable customers that need it ▶ You can still safely use tap water for washing and cleaning. The notice arrives on a Wednesday. After two days the water will be safe to drink again and your water company will notify you Compensation amount: £ 2.50*	**No service issue** ▶ There would be no issue affecting the water service at your property

*Compensation would be paid automatically, and within 7 days, by crediting your bank account, if you have a direct debit set up, or by sending you a cheque otherwise

○ ○

Q32 We would now like to ask you a few questions about the choices you have just made. How strongly do you agree or disagree with the following statements about the choices you have just made?

Please tick one in each row

	Strongly disagree	Disagree	Neither	Agree	Strongly agree
I was able to understand the choices	☐	☐	☐	☐	☐
I found the options believable	☐	☐	☐	☐	☐
My choices were based on how much impact I thought each option would have on my household and whether the amount of money shown was enough to compensate for this	☐	☐	☐	☐	☐
I found it easy to choose between the options	☐	☐	☐	☐	☐

Q33 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I WAS ABLE TO UNDERSTAND THE CHOICES':** Why were you unable to understand the choices?

Q34 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I FOUND THE OPTIONS BELIEVABLE':** What was not believable about the options shown?

Q35 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'MY CHOICES WERE BASED ON HOW MUCH IMPACT I THOUGHT EACH OPTION WOULD HAVE ON MY HOUSEHOLD AND WHETHER THE AMOUNT OF MONEY SHOWN WAS ENOUGH TO COMPENSATE FOR THIS.':** What were the main factors driving your choices?

Q36 **IF YOU ANSWERED DISAGREE OR DISAGREE STRONGLY TO 'I FOUND IT EASY TO CHOOSE BETWEEN THE OPTIONS':** Why was it difficult choosing between the options?

Attitudes to environmental costs

Q37 Please look at the following five statements about pollution control and the costs of pollution control. Which one do you agree with most? **TICK ONE BOX**

- ☐ The environment should be protected from pollution and improved, **regardless of cost**
- ☐ The environment should be protected from pollution and improved, **provided costs are not excessive**
- ☐ The environment should be protected from pollution and improved, **but at no additional cost**
- ☐ Further protection and improvements to the environment are not needed, and **the costs for this should fall**
- ☐ Standards for protection and improvement to the environment are already too high and should be relaxed, **and costs should fall**
- ☐ Don't know

Q38 Please use this box to leave any further comments about this topic or this survey. Please note, your water company will be unable to respond to individuals.

Classification Questions

We will now ask you a few questions about you and your household. These will only be used to ensure we have spoken to a wide range of customers. All responses you give will be kept strictly confidential.

Q39 How would you describe the occupation type of the main income earner in your household?

- ☐ **Higher managerial/ professional/ administrative** (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees), top level civil servant/public service employee) GO TO Q44
- ☐ **Intermediate managerial/ professional/ administrative** (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government) GO TO Q44
- ☐ **Supervisory or clerical/ junior managerial/ professional/ administrative** (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc) GO TO Q44
- ☐ **Skilled manual work** (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/ Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc) GO TO Q44
- ☐ **Semi or unskilled manual work** (e.g. Manual work, apprentice to skilled trade, Caretaker, Park keeper, non-HGV driver, shop assistant) GO TO Q44
- ☐ Unemployed GO TO Q44
- ☐ Retired
- ☐ Student GO TO Q44
- ☐ Prefer not to say GO TO Q44

Q40 **IF RETIRED:** Does the main income earner have a state pension, a private pension or both?

State only GO TO Q44
Privat
e only
Both
Prefer not to say GO TO Q44

Q41 IF PRIVATE PENSION OR BOTH STATE AND PRVATE: How would you describe the main income earner's occupation type before retirement?

- ☐ **Higher managerial/ professional/ administrative** (e.g. Established doctor, Solicitor, Board Director in a large organisation (200+ employees), top level civil servant/public service employee)
- ☐ **Intermediate managerial/ professional/ administrative** (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principle officer in civil service/local government)
- ☐ **Supervisory or clerical/ junior managerial/ professional/ administrative** (e.g. Office worker, Student Doctor, Foreman with 25+ employees, salesperson, etc)
- ☐ **Skilled manual work** (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/ Ambulance Driver, HGV driver, AA patrolman, pub/bar worker, etc)
- ☐ **Semi or unskilled manual work** (e.g. Manual work, apprentice to skilled trade, Caretaker, Park keeper, non-HGV driver, shop assistant)
- ☐ None of these
- ☐ Prefer not to say

Q44 To which of these ethnic groups do you consider you belong to? **We would like to collect this to ensure that people of all backgrounds are represented in the study, but you do not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.**

White
- ☐ English, Welsh, Scottish, Northern Irish or British
- ☐ Irish
- ☐ Gypsy or Irish Traveller
- ☐ Any other White background

Mixed
- ☐ White and Black Caribbean
- ☐ White and Black African
- ☐ White and Asian
- ☐ Any other Mixed background

Asian or Asian British
- ☐ Indian
- ☐ Pakistani
- ☐ Bangladeshi
- ☐ Chinese
- ☐ Any other Asian background

Black or Black British
- ☐ Caribbean
- ☐ African
- ☐ Any other Black background

Other Ethnic Group
- ☐ Arab
- ☐ Any other ethnic group
- ☐ Prefer not to say

Q45 Thinking about all the people in your household, including yourself, how many people live here?

- ☐ 1 or 2
- ☐ 3 or 4
- ☐ 5 or more
- ☐ Prefer not to say

Q46 Please let us know if any of the following apply to you or a member of your household.
We would like to collect this to ensure that people with a variety of particular needs are represented in the study, but you do not have to answer if you do not wish to. This information will not be shared with any third party and will be destroyed within 12 months of project completion.

- ☐ Disabled or suffers from a debilitating illness
- ☐ Has a learning difficulty
- ☐ Relies on water for medical reasons
- ☐ Visually impaired (i.e. struggles to read even with glasses)
- ☐ Over the age of 75 years old
- ☐ Speaks English as a second language
- ☐ Deaf or hard of hearing
- ☐ A new parent
- ☐ None of these statements apply
- ☐ Prefer not to say

Q47 Which of the following statements do you most agree with? Please remember, this research is entirely confidential and that it is only by understanding the views of people who are struggling to pay their household bills (eg gas, electricity, telephone etc) that change can be made. **TICK ONE ONLY**

- ☐ I can always afford to pay my household bills
- ☐ I can usually afford to pay my household bills
- ☐ I sometimes struggle to pay my household bills
- ☐ I usually struggle to pay my household bills
- ☐ I always struggle to pay my household bills
- ☐ Prefer not to say

Q47a. Thinking about your household finances, do you expect your household to be better off, worse off or about the same in 12 months' time?

- ☐ Better off
- ☐ The same
- ☐ Worse off
- ☐ Don't know

Q52 Do you have a water meter?

- ☐ Yes
- ☐ No GO TO Q54
- ☐ Don't Know GO TO Q54
- ☐ Prefer not to say GO TO Q54

Q53 IF YOU HAVE A WATER METER: Did you ask to have a water meter fitted for your household?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

Q54 Which of these best describes you?

- ☐ I have never used the internet
- ☐ I have used the internet but do not have regular access to it
- ☐ I have regular access to the internet
- ☐ Prefer not to say

Q54b Earlier in the questionnaire we asked you to make choices between experiencing a service issue and receiving compensation, or not experiencing the service issue. Different amounts were shown to different survey participants as part of this study to test how much money would be needed, in principle, to compensate for the impact that the service issue would have on customers.

We wish to reiterate that the amounts shown were not the same as those you would be currently entitled to expect if you were to experience the service issue at your property

Q55 We mentioned that there would be a £10 incentive for completing this survey. This incentive will be administered by Accent, within 4 weeks.

This can be sent as an Amazon, Marks & Spencer or One4All voucher by email or by post. Alternatively, we can donate your incentive to WaterAid. Which would you prefer?

- ☐ Amazon voucher by email PLEASE WRITE EMAIL ADDRESS BELOW
- ☐ M&S Voucher by email PLEASE WRITE EMAIL ADDRESS BELOW
- ☐ One4All voucher by email PLEASE WRITE EMAIL ADDRESS BELOW
- ☐ Amazon voucher by post PLEASE WRITE ADDRESS BELOW
- ☐ M&S voucher by post PLEASE WRITE ADDRESS BELOW
- ☐ One4All voucher by post PLEASE WRITE ADDRESS BELOW
- ☐ Donation to Water Aid

NAME:

EMAIL ADDRESS:

POSTAL ADDRESS:

If you have any queries about your incentive, please contact us on 0131 220 8770.

Q56 Thank you. Would you be willing to be contacted again if we need to clarify any of the answers you have given today?

- ☐ Yes
- ☐ No

Thank you. This research was conducted under the terms of the MRS code of conduct and is completely confidential.

Appendix E

Population and sample proportions by company

Appendix E1 – Households

Population and Sample Proportions of Household Customers by Demographic Characteristics

By Water Company

Affinity Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	49	49
Female	51	51	51
Age			
18-29	18	8	18
30-64	61	66	61
65+	21	26	21
Socio-economic grade			
AB	27	44	27
C1C2	52	41	52
DE	21	15	21

Sample base: 503

Anglian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	50	49
Female	51	50	51
Age			
18-29	17	7	17
30-64	58	61	58
65+	25	32	25
Socio-economic grade			
AB	21	35	21
C1C2	54	41	53
DE	26	23	26

Sample base: 513

Bristol Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	43	49
Female	51	57	51
Age			
18-29	21	9	21
30-64	56	62	56
65+	23	30	23
Socio-economic grade			
AB	25	44	25
C1C2	54	39	54
DE	21	18	21

Sample base: 511

Hafren Dyfrdwy

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	50	48	49
Female	50	52	51
Age			
18-29	16	7	16
30-64	57	63	57
65+	28	30	27
Socio-economic grade			
AB	18	38	18
C1C2	54	43	53
DE	29	18	29

Sample base: 350

Northumbrian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	47	49
Female	51	53	51
Age			
18-29	18	8	18
30-64	58	66	57
65+	24	26	25
Socio-economic grade			
AB	18	39	18
C1C2	54	42	54
DE	27	19	28

Sample base: 1,264

Portsmouth Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	49	49
Female	51	51	51
Age			
18-29	18	7	19
30-64	54	60	55
65+	27	33	27
Socio-economic grade			
AB	22	47	22
C1C2	56	38	55
DE	22	14	23

Sample base: 507

Severn Trent Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	47	49
Female	51	53	51
Age			
18-29	19	14	19
30-64	57	58	57
65+	24	28	24
Socio-economic grade			
AB	20	35	21
C1C2	52	44	52
DE	28	21	28

Sample base: 1,014

South East Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	48	49
Female	51	52	51
Age			
18-29	16	8	16
30-64	58	60	58
65+	26	32	26
Socio-economic grade			
AB	29	47	30
C1C2	53	40	53
DE	17	13	17

Sample base: 508

Southern Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	48	49
Female	51	52	51
Age			
18-29	18	6	18
30-64	57	63	58
65+	25	31	24
Socio-economic grade			
AB	23	39	23
C1C2	55	42	55
DE	22	19	22

Sample base: 811

South Staffordshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	45	49
Female	51	55	51
Age			
18-29	19	9	19
30-64	58	63	58
65+	23	28	24
Socio-economic grade			
AB	22	43	20
C1C2	52	38	52
DE	27	19	28

Sample base: 609

South West Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	17	7	15
30-64	54	60	55
65+	29	34	30
Socio-economic grade			
AB	20	38	21
C1C2	57	42	56
DE	23	20	23

Sample base: 613

SES Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	48	48
Female	51	52	52
Age			
18-29	15	5	15
30-64	62	65	62
65+	23	30	23
Socio-economic grade			
AB	31	58	32
C1C2	54	32	54
DE	15	10	15

Sample base: 505

Thames Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	50	50
Female	51	50	50
Age			
18-29	22	13	13
30-64	61	61	61
65+	16	25	25
Socio-economic grade			
AB	30	49	49
C1C2	48	37	37
DE	22	14	14

Sample base: 1,012

United Utilities

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	19	9	19
30-64	57	64	57
65+	24	28	24
Socio-economic grade			
AB	20	37	20
C1C2	52	42	52
DE	29	20	29

Sample base: 2,028

Dŵr Cymru Welsh Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	18	7	18
30-64	55	64	55
65+	27	29	27
Socio-economic grade			
AB	18	38	19
C1C2	54	39	54
DE	28	23	27

Sample base: 807

Wessex Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	16	9	17
30-64	56	55	56
65+	28	36	28
Socio-economic grade			
AB	24	41	24
C1C2	55	40	54
DE	21	19	21

Sample base: 508

Yorkshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	50	49
Female	51	50	51
Age			
18-29	20	7	20
30-64	57	64	57
65+	24	29	23
Socio-economic grade			
AB	19	33	19
C1C2	53	41	52
DE	28	26	28

Sample base: 504

By Wastewater Company

Anglian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	49	49
Female	51	51	51
Age			
18-29	17	7	17
30-64	58	61	58
65+	25	32	25
Socio-economic grade			
AB	22	43	21
C1C2	54	37	54
DE	24	19	25

Sample base: 1,125

Hafren Dyfrdwy

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	50	50	50
Female	50	50	51
Age			
18-29	14	8	14
30-64	54	62	53
65+	32	30	32
Socio-economic grade			
AB	18	41	18
C1C2	58	41	58
DE	25	18	25

Sample base: 147

Northumbrian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	44	49
Female	51	56	51
Age			
18-29	19	8	19
30-64	57	63	57
65+	25	29	25
Socio-economic grade			
AB	17	31	17
C1C2	53	44	53
DE	30	25	30

Sample base: 502

Severn Trent Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	45	49
Female	51	55	51
Age			
18-29	19	12	19
30-64	57	60	57
65+	24	28	24
Socio-economic grade			
AB	20	34	20
C1C2	52	44	52
DE	28	22	28

Sample base: 1,436

Southern Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	48	49
Female	51	52	52
Age			
18-29	17	7	16
30-64	56	61	56
65+	27	33	27
Socio-economic grade			
AB	24	43	24
C1C2	55	40	55
DE	21	17	21

Sample base: 1,679

South West Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	44	49
Female	51	56	51
Age			
18-29	16	8	16
30-64	55	59	55
65+	29	34	29
Socio-economic grade			
AB	19	38	19
C1C2	57	43	57
DE	24	20	24

Sample base: 507

Thames Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	50	49
Female	51	50	51
Age			
18-29	21	10	21
30-64	62	65	61
65+	18	25	17
Socio-economic grade			
AB	29	50	30
C1C2	50	37	49
DE	21	13	21

Sample base: 2,518

United Utilities

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	19	9	19
30-64	57	64	57
65+	24	28	24
Socio-economic grade			
AB	20	37	20
C1C2	52	42	52
DE	29	20	29

Sample base: 2,028

Dŵr Cymru Welsh Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	46	49
Female	51	54	51
Age			
18-29	18	7	18
30-64	55	64	55
65+	27	29	27
Socio-economic grade			
AB	19	37	19
C1C2	54	41	54
DE	28	22	27

Sample base: 1,010

Wessex Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	45	48
Female	51	55	52
Age			
18-29	19	8	20
30-64	56	59	54
65+	26	33	26
Socio-economic grade			
AB	25	42	24
C1C2	54	39	56
DE	21	19	20

Sample base: 1,108

Yorkshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
Sex			
Male	49	50	49
Female	51	50	51
Age			
18-29	19	7	19
30-64	57	64	57
65+	24	29	24
Socio-economic grade			
AB	19	33	19
C1C2	53	42	53
DE	28	26	28

Sample base: 507

Appendix E2 – Non-households

Population and Sample Proportions of Non-household Customers by Employment Size

By Water Company

Affinity Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	11	15
1-49 employees	28	72	27
50-249 employees	12	13	12
250+ employees	45	4	46

Sample base: 213

Anglian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	12	15
1-49 employees	29	69	30
50-249 employees	12	16	12
250+ employees	44	3	43

Sample base: 201

Bristol Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	22	14	22
1-49 employees	37	65	37
50-249 employees	14	10	14
250+ employees	27	11	27

Sample base: 222

Dŵr Cymru Welsh Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	26	16
1-49 employees	31	63	33
50-249 employees	12	6	13
250+ employees	42	5	39

Sample base: 423

Hafren Dyfrdwy

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	18	15
1-49 employees	31	71	32
50-249 employees	12	6	13
250+ employees	43	5	40

Sample base: 140

Northumbrian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	16	12	13
1-49 employees	31	76	26
50-249 employees	13	8	10
250+ employees	41	4	51

Sample base: 270

Portsmouth Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	18	9	18
1-49 employees	32	74	32
50-249 employees	13	8	13
250+ employees	37	9	37

Sample base: 208

SES Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	16	20	16
1-49 employees	28	61	28
50-249 employees	12	15	12
250+ employees	44	4	43

Sample base: 203

Severn Trent Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	17	9	18
1-49 employees	34	73	34
50-249 employees	13	13	13
250+ employees	35	5	35

Sample base: 204

South East Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	18	13	18
1-49 employees	32	73	32
50-249 employees	13	10	13
250+ employees	37	4	37

Sample base: 202

South Staffordshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	17	13	17
1-49 employees	32	67	32
50-249 employees	12	15	12
250+ employees	38	5	40

Sample base: 203

South West Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	22	17	18
1-49 employees	37	71	38
50-249 employees	14	10	20
250+ employees	28	3	24

Sample base: 237

Southern Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	18	12	18
1-49 employees	32	75	31
50-249 employees	13	6	16
250+ employees	37	7	35

Sample base: 207

Thames Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	16	11	16
1-49 employees	28	58	28
50-249 employees	12	16	12
250+ employees	44	16	44

Sample base: 211

United Utilities

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	13	15
1-49 employees	35	67	35
50-249 employees	15	13	15
250+ employees	35	7	35

Sample base: 277

Wessex Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	22	16	22
1-49 employees	37	76	37
50-249 employees	14	5	14
250+ employees	27	3	27

Sample base: 212

Yorkshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	12	15
1-49 employees	32	71	33
50-249 employees	14	10	13
250+ employees	39	7	39

Sample base: 205

By Wastewater Company

Anglian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	13	15
1-49 employees	29	67	30
50-249 employees	12	15	11
250+ employees	44	5	44

Sample base: 304

Dŵr Cymru Welsh Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	25	15
1-49 employees	31	64	32
50-249 employees	12	6	12
250+ employees	42	6	40

Sample base: 503

Hafren Dyfrdwy

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	15	25
1-49 employees	31	78	54
50-249 employees	12	7	21
250+ employees	43	0	0

Sample base: 60

Northumbrian Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	17	10	17
1-49 employees	35	78	35
50-249 employees	14	8	14
250+ employees	34	3	34

Sample base: 199

Severn Trent Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	18	12	17
1-49 employees	34	70	34
50-249 employees	13	13	13
250+ employees	35	5	36

Sample base: 373

South West Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	22	19	22
1-49 employees	37	68	37
50-249 employees	14	11	14
250+ employees	27	2	27

Sample base: 200

Southern Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	18	11	16
1-49 employees	32	75	34
50-249 employees	13	8	17
250+ employees	37	6	33

Sample base: 573

Thames Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	16	14	15
1-49 employees	28	65	26
50-249 employees	12	14	12
250+ employees	44	8	48

Sample base: 676

United Utilities

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	13	15
1-49 employees	35	67	35
50-249 employees	15	13	15
250+ employees	35	7	35

Sample base: 277

Wessex Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	22	14	22
1-49 employees	37	72	37
50-249 employees	14	7	13
250+ employees	28	7	28

Sample base: 466

Yorkshire Water

	Population (%)	Sample	
		Unweighted (%)	Weighted (%)
0 employees	15	11	15
1-49 employees	32	71	32
50-249 employees	14	10	14
250+ employees	39	7	39

Sample base: 207