

The scope of work for our Independent Limited Assurance Report to the Directors of Northumbrian Water Limited dated 10 July 2019 was limited to the Selected Information summarised in the table below, alongside the Reporting Criteria* against which it was assessed.

Ref	Selected Information – Performance Commitments	Reporting criteria
W-B2	Overall drinking water compliance	<p>The three-year rolling average of mean zonal percentage compliance from the regulatory sampling programme, based on current regulation and standards (including the tightening of the lead standard in 2013) as reported to the Drinking Water Inspectorate (DWI). Under the asset health approach, the annual figures will be assessed using a rolling three-year average of mean zonal compliance reported by the DWI.</p> <p>The measure is based on up to 39 parameters which are determined by the DWI, where data is obtained through sampling. The percentage compliance score is calculated from the number of determinants taken minus the number of determinants that failed the relevant drinking water standard in each water quality zone. It is calculated by averaging the mean zonal percentage compliance from the regulatory sampling programme. Each parameter is weighted equally.</p> <p>The measure is the mean of the company's performance for the calendar years 2016, 2017 and 2018.</p>
W-C2	Properties experiencing poor water pressure	<p>The three-year rolling average of the number of properties regularly experiencing water pressure below the minimum standard.</p> <p>Properties are considered to be regularly experiencing water pressure below the minimum standard if they have received, and are likely to continue to receive, pressure below the reference level when demand is not abnormal.</p> <p>The reference level is a pressure of service is a flow of 9l/min at a pressure of 10m head on the customer's side of the main stop tap (mst). The reference level applies to a single property. The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap. Because of the difficulty in measuring pressure and flow at the mst, companies may measure against a surrogate reference level. Companies should use a surrogate of 15m head in the adjacent distribution main unless a different level can be shown to be suitable.</p> <p>There are a number of circumstances under which properties identified as receiving low pressure should be excluded from the reported figure. The aim of these exclusions is to exclude properties which receive a low pressure as a result of a one-off event and which, under normal circumstances (including normal peaks in demand), will not receive pressure or flow below the reference level. These exclusions include:</p> <ul style="list-style-type: none"> • Planned maintenance - Companies should not report low pressures caused by planned maintenance; • One-off incidents - This exclusion covers a number of causes of low pressure: mains bursts; failures of company equipment (such as Pressure Reducing Valves or booster pumps); firefighting; and action by a third party. If problems of this type affect a property frequently (more than five times in a year), they cannot be classed as one-off events and further investigation will be required before they can be excluded; and • Low pressure incidents of short duration - Properties affected by low pressures which only occur for a short period (less than one hour), and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures. <p>If a property experiences poor water pressure during the year in line with the above, but the company can evidence that they have taken steps to ensure the property will not experience poor water pressure again for the same reason(s), then the property can be excluded from the reported number.</p>

W-C4	Leakage (Ml/d) Northumbrian area	<p>The measure is based on the volume of water leaking from the company's water supply assets. The annual average is applied to give a figure for megalitres per day (Ml/d). It includes any uncontrolled losses between water treatment works and customers' internal stop taps. It does not include customers' internal plumbing losses. This measure will be assessed on the company's regulatory year performance.</p> <p>This measure relates to the Northumbrian area in the North East of England.</p>
W-C5	W-C5: Leakage (Ml/d) Essex & Suffolk area	<p>The measure is based on the volume of water leaking from the company's water supply assets. The annual average is applied to give a figure for megalitres per day (Ml/d). It includes any uncontrolled losses between water treatment works and customers' internal stop taps. It does not include customers' internal plumbing losses. This measure will be assessed on the company's regulatory year performance.</p> <p>This measure relates to the Essex and Suffolk areas in the South East of England.</p>
S-C1	Sewage treatment works discharge compliance	<p>The three-year rolling average of the company's compliance with discharge consents set by the Environment Agency from sewage treatment works. It is a measure of the capability of the company's sewage treatment works to treat and dispose of sewage in line with the company's discharge permit conditions.</p> <p>The measure includes compliance with all numeric consents. The measure of success excludes non-sanitary failures (that is, failures not related to sewage, such as industrial chemicals, metals or hazardous substances and technical breaches (for example a sample that has failed because it has been collected from the wrong location).</p> <p>The measure is the mean of the company's performance for the calendar years 2016, 2017 and 2018.</p>
S-C2	Pollution incidents (category 3)	<p>The three-year rolling average of the number of category 3 pollution events (as reported by the Environment Agency) the company have caused. It includes pollution failures on all assets, water and wastewater, being the total number of category 3 pollution events from a discharge or escape of a pollutant from the company's water and sewerage assets affecting rivers or coastal waters (defined by Environment Agency guidance 16_02, version 6). Per the Environment Agency, a category 3 pollution incident is one that has a 'minor, or minimal impact or effect on the environment, people and/or property'.</p> <p>Under the asset health approach, the annual figures will be assessed using a rolling three-year average.</p> <p>The measure is the mean of the company's performance for the calendar years 2016, 2017 and 2018.</p>

Ref	Selected Information – other data points	Reporting criteria
3C.1	Abstraction site	The name of the abstraction site (which has been designated by the Environment Agency as an eligible abstraction site to be included in the Abstraction Incentive Mechanism (AIM)). This can be anonymised if it is necessary for national security reasons.
3C.3	AIM performance	<p>The AIM performance in Ml (megalitres) for the current reporting year is calculated as follows:</p> $(F-T) * P$ <p>where:</p> <p>A = AIM performance in Ml</p> <p>F = average daily abstraction (Ml/d) during period when flows are at or below the trigger threshold</p> <p>T = baseline average daily abstraction (Ml/d) during period when flows are at or below the trigger threshold</p> <p>P = length of period (d) when flows are at or below the trigger threshold</p>
3C.4	Normalised AIM performance	<p>The normalised AIM performance for the current reporting year is calculated as follows:</p> $A / (T * P)$ <p>where:</p> <p>A = AIM performance in Ml</p> <p>T = baseline average daily abstraction (Ml/d) during period when flows are at or below the trigger threshold</p> <p>P = length of period (d) when flows are at or below the trigger threshold</p>
3C.5	Cumulative AIM performance 2016-17 onwards	<p>Cumulative AIM performance in Ml for the years 2016-17 onwards.</p> $A_i + A_{ii} + A_{iii} \dots$ <p>where:</p> <p>A_i = AIM performance in Ml in year i</p>
3C.6	Cumulative Normalised AIM performance 2016-17 onwards	<p>Cumulative normalised AIM performance for the years 2016-17 onwards.</p> $\Sigma A / (T * \Sigma P)$ <p>Where:</p> <p>$\Sigma A = A_i + A_{ii} + A_{iii} \dots$, A_i = AIM performance in Ml in year i</p> <p>$\Sigma P = P_i + P_{ii} + P_{iii} \dots$, P_i = length of period (d) when flows are at or below the trigger threshold in year i</p>
4A.1	Number of void households ('000s)	Average total number of household properties, within the supply area, which are connected for either a water service only, a wastewater service only or both services but do not receive a charge, as there are no occupants. This should not include properties that do not receive a bill because it would be uneconomical to do so. Note that a property connected for both services that is not occupied, only counts as one void property.

4A.2	Per capita consumption (unmeasured households excluding supply pipe leakage)	<p>Estimated per capita (person) consumption of households that are supplied with unmeasured water. This figure applies to billed unmeasured households and excludes underground supply pipe leakage. Underground supply pipe leakage is any loss of water from the underground supply pipe.</p> <p>The Ofwat guidance identifies two distinct classes of household property under the retail household price control:</p> <ol style="list-style-type: none"> 1. mainstream household properties, such as houses, bungalows, and flats; and 2. other types of property which are ineligible to choose their supplier. These would be mixed- use premises where the principal use is as a home. <p>Most companies will be reporting on per capita consumption relating to an outcome defined for the period 2015-20. This will be measured using the narrower household definition under 1) above and will not include 2). Companies therefore should restrict the definition of households to the narrower property types under 1) for reporting this measure.</p>
4A.2	Per capita consumption (measured households excluding supply pipe leakage)	<p>Estimated per capita (person) consumption of measured households. This figure applies to billed measured households and excludes underground supply pipe leakage.</p> <p>The Ofwat guidance identifies two distinct classes of household property under the retail household price control:</p> <ol style="list-style-type: none"> 1. mainstream household properties, such as houses, bungalows, and flats; and 2. other types of property which are ineligible to choose their supplier. These would be mixed- use premises where the principal use is as a home. <p>Most companies will be reporting on per capita consumption relating to an outcome defined for the period 2015-20. This will be measured using the narrower household definition under 1) above and will not include 2). Companies therefore should restrict the definition of households to the narrower property types under 1) for reporting this measure.</p>
4A.3	Bulk supply export	<p>Water</p> <p>Volume of water (treated and untreated) exported to other companies in bulk supplies by the appointed business (under the normal course of business).</p> <p>Wastewater</p> <p>Volume of wastewater exported to other companies in bulk supplies by the appointed business (under the normal course of business).</p>
4A.4	Bulk supply import	<p>Water</p> <p>Volume of water (treated and untreated) imported from other companies in bulk supplies by the appointed business (under the normal course of business).</p> <p>Wastewater</p> <p>Volume of wastewater imported from other companies in bulk supplies by the appointed business (under the normal course of business). Tankered waste volumes, which is a non-appointed activity, should not be included in this line. Non-appointed activity is activity undertaken that does not form part of the business' regular activities.</p>
4A.5	Distribution input	<p>Distribution input is the average amount of potable (drinkable) water entering the distribution system. It is calculated as follows: Works output + Imports – Exports.</p> <p>Works output is the water that enters the distribution system from treatment works. Imports refers to any water imported from nearby regions. Exports refers to any water exported to nearby regions.</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals.</p>

4D.25	Licensed volume available	The total volume of raw water (water found in the environment that has not been treated) that is licensed to be abstracted from all water sources (reservoirs (impounding and pumped storage), rivers and boreholes) within the reporting year measured in Ml. This should equal the total licensed volume of water available to abstract, not the actual volume abstracted within the reporting period.
4D.25	Volume abstracted	The total volume of water that is abstracted from the environment, from all water sources (reservoirs (impounding and pumped storage), rivers and boreholes) within the reporting year measured in Ml.
4D.25	Volume transported	<p>The total volume of raw water (water found in the environment that has not been treated) that is transported from an abstraction site (a water source i.e. reservoirs (impounding and pumped storage), rivers and boreholes) through the raw water transport network to a treatment works, raw water storage facility, or to customers who require untreated or non-potable water (including third party water companies) measured in Ml.</p> <p>Where a water abstraction site and water treatment works are co-located on the same site, then the raw water effectively 'by-passes' the raw water transport stage and would not be included.</p>
4D.25	Average volume stored	<p>The average (mean) volume of raw water (water found in the environment that has not been treated) stored in raw water storage facilities prior to treatment at a Water Treatment Works (WTW) measured in Ml.</p> <p>Actual volumes should be used where possible and volumes measured at least monthly. If actual volume data is unavailable, it is assumed that they are storing 80% of their full capacity at any one time.</p>
4D.25	Distribution input volume	<p>Distribution input (potable) volume in Ml. Distribution input is the average amount of potable water entering the distribution system and supplied to customers within the company's area of supply, on an annual rather than daily basis. It is calculated as follows: Works output + Imports – Exports.</p> <p>Works output is the water that enters the distribution system from treatment works. Imports refers to any water imported from nearby regions. Exports refers to any water exported to nearby regions.</p>
4D.27	Population	Total resident population served in billed households with measured and unmeasured water and billed non-households supplied with measured and unmeasured water.

4E.25	Volume collected	<p>Foul</p> <p>This service is for the collection of foul sewage from customers' properties. This includes development, repair and maintenance of the sewage collection infrastructure. Other specific activities are the provision and maintenance of ancillaries such as overflows, screens, and online and offline retention tanks, rising main wells and pumps and flow measurement.</p> <p>Volume is collected in Ml.</p> <p>Surface water drainage</p> <p>This service is for the collection of surface water from exterior areas of customers' properties. This includes development, repair and maintenance of the sewage collection infrastructure. Other specific activities are the provision and maintenance of ancillaries such as overflows, screens, and online and offline retention tanks, rising main wells and pumps and flow measurement.</p> <p>Volume is collected in Ml.</p> <p>Highway drainage</p> <p>This service is for the collection of surface water that runs off roads and pavements. The activities included in this service relate to the development, repair and maintenance of the sewage collection infrastructure. Other activities that could be considered within this service may include the provision and maintenance of ancillaries such as overflows, screens, and online and offline retention tanks, rising main wells and pumps and flow measurement.</p> <p>Volume is collected in Ml.</p> <p>The surface water drainage and highway drainage figures are a 65%/35% split of the total volume collected, after deducting the foul volume collected.</p>
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4E.25	BOD (Biochemical Oxygen Demand)	<p>Receive untreated sewage from the sewage collection system into treatment works, undertake treatment processes and discharge treated wastewater into rivers, etc. and sewage sludge for transporting onwards to sludge treatment processes. Includes all direct costs associated with sewage treatment including terminal pumping costs. The activities of emptying septic tanks or very small sewage works by transporting the contents periodically to the inlet of a larger sewage treatment works are sewage treatment activities.</p> <p>Biochemical Oxygen Demand (BOD) is measured in tonnes.</p>
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4E.25	Volume transported	<p>This service includes the transport of sludge from the sewage treatment plant to the sludge treatment plant. All types of transport, and associated fuel costs, are included within this service. However, transport within the sludge treatment plant or between sludge treatment plants is not included in this service, which is instead an activity of the 'sludge treatment' service.</p>

4E.25 Dried solid mass treated & disposed **Sludge Treatment**

All sludge treatment activities including;

- Thickening of treated sludge,
- Dewatering of thickened sludge,
- Incineration of non-treated sludge; and,
- Treatment of sludge liquors in a stand-alone liquor treatment plant.

While different technologies exist for sludge treatment, sludge treatment is defined as a technology-neutral service for the purpose of the Annual Performance Reporting.

Dried solid mass in thousand tonnes of dried solids (thousand tonnes dry solids).

This is the total amount of sewage sludge produced during the report year expressed in thousands of tonnes of dry solids of sludge produced by the whole service.

Sludge Disposal

The collection of treated sludge from collection point, onward transport and disposal to landfill, agricultural land, land reclamation sites and to other end users in various forms including;

- treated sludge
- incinerated sewage sludge ash (ISSA),
- composted sludge,
- sludge cake (dewatered sludge).

If incineration of completely treated sludge takes place, then this should be included in 'sludge disposal'.

Dried solid mass in thousand tonnes of dried solids (ttds).

This is the total for all sewage sludge disposal. This should include disposal to farmland, landfill, incineration, composting and other routes.

4E.27	Population	Total resident population connected to the sewage system in billed households and billed non-households.
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4O.1	Works name	Name of sewage treatment works
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4O.2	Classification of treatment works	<p>Classification of treatment works, according to the following Ofwat classification definitions:</p> <p>P = Primary treatment (<i>Includes works whose treatment methods are restricted to primary treatment (screening, comminution, maceration, grit and detritus removal, pre-aeration and grease removal, storm tanks, plus primary sedimentation, including where assisted by the addition of chemicals e.g. Clariflow)</i>);</p> <p>SAS = Secondary Activated Sludge (<i>As primary, plus works whose treatment methods include activated sludge (including diffused air aeration, coarse bubble aeration, mechanical aeration, oxygen injection, submerged filters) and other equivalent techniques including deep shaft process, extended aeration (single, double and triple ditches) and biological aerated filters as secondary treatment</i>);</p> <p>SB = Secondary Biological (<i>As primary, plus works whose treatment methods include rotating biological contactors and biological filtration (including conventional filtration, high rate filtration, alternating double filtration and double filtration), root zone treatment (where used as a secondary treatment stage)</i>);</p> <p>TA1 = Tertiary A1 (<i>Works with a secondary activated sludge process whose treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage</i>);</p> <p>TA2 = Tertiary A2 (<i>Works with a secondary activated sludge process whose treatment methods also include rapid-gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard COD and colour removal, where used as a tertiary treatment stage</i>);</p> <p>TB1 = Tertiary B1 (<i>Works with a secondary stage biological process whose treatment methods also include prolonged settlement in conventional lagoons or raft lagoons, irrigation over grassland, constructed wetlands, root zone treatment (where used as a tertiary stage), drum filters, microstrainers, slow sand filters, tertiary nitrifying filters, wedge wire clarifiers or Clariflow installed in humus tanks, where used as a tertiary treatment stage</i>);</p> <p>TB2 = Tertiary B2 (<i>Works with a secondary biological process whose treatment methods also include rapid gravity sand filters, moving bed filters, pressure filters, nutrient control using physico-chemical and biological methods, disinfection, hard Chemical Oxygen Demand (COD) and colour removal, where used as a tertiary treatment stage</i>).</p> <p>Where a works' load is split into two treatment streams, the works should be reported in this line as the higher of the two proportions. For example, a works with a split of 60% Secondary Activated Sludge and 40% Secondary Biological should be classed as Secondary Activated Sludge (SAS) in this line.</p>
4O.3	Population equivalent of total load received	<p>The average equivalent population of the total load received by the treatment works during the report year. Total load will be comprised of both resident and non- resident population loads.</p> <p>Resident population is defined as all billed households supplied with unmeasured and measured water and billed business supplied with unmeasured and measured water.</p> <p>Non- resident population is defined as the holiday and tourist population connected to the sewerage system (note that this does not include daily commuters or day visitors).</p>

40.4	Suspended solids consent	<p>The value of the effluent consent standard (95%ile) with respect to suspended solids.</p> <p>A trade effluent consent is a legal document that is required to discharge trade effluent into the public sewer. Suspended solids is a measure of the particles in the trade effluent. This is controlled to ensure that there are no blockages in the sewers due to settlement.</p> <p>This figure must be as determined by the Environment Agency and not a company's own assessment of the consent standard.</p>
40.5	BOD ₅ consent	<p>The value of the effluent consent standard (95%ile) with respect to BOD₅.</p> <p>A trade effluent consent is a legal document that is required to discharge trade effluent into the public sewer. BOD₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.</p> <p>This figure must be as determined by the Environment Agency and not a company's own assessment of the consent standard.</p>
40.6	Ammonia consent	<p>The value of the effluent consent standard (95%ile) with respect to ammonia, if applicable at the works in question.</p> <p>A trade effluent consent is a legal document that is required to discharge trade effluent into the public sewer. Ammonia is a colourless gas, which is a compound of nitrogen and hydrogen with the formula NH₃.</p> <p>This figure must be as determined by the Environment Agency and not a company's own assessment of the consent standard.</p>
40.7	Phosphorus consent	<p>The value of the effluent consent standard with respect to phosphorus (annual mean), if applicable at the works in question.</p> <p>A trade effluent consent is a legal document that is required to discharge trade effluent into the public sewer. Phosphorus is a chemical element of atomic number 15, a poisonous non-metal which is highly reactive.</p> <p>This figure must be as determined by the Environment Agency and not a company's own assessment of the consent standard.</p>
40.8	UV consent	<p>The value of the consent process standard with respect to intensity of Ultraviolet irradiation, if applicable at the works in question.</p> <p>A trade effluent consent is a legal document that is required to discharge trade effluent into the public sewer. Ultraviolet irradiation is the projection of ultraviolet light from a generator which is a by product of the water treatment process.</p> <p>This figure must be as determined by the Environment Agency and not a company's own assessment of the consent standard.</p>
40.9	Load received by STW	<p>The average daily organic load (in kgBOD₅) received by the treatment works during the report year. Calculated on the basis of a contribution of 60g BOD₅ per head of equivalent population per day.</p> <p>BOD₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.</p> <p>Calculated values should agree with those reported in 4S.6.</p>
40.10	Flow passed to full treatment	<p>The average daily flow (in m³/d) passed to full treatment at the treatment works during the report year.</p> <p>Typically a sewage treatment works is sized to take a 'flow to full treatment' value which is set as an industry standard at a multiple of incoming components figures which would be expected to be sufficiently higher than the peak dry weather flow of any catchment to ensure that all sewage receives adequate treatment.</p>

4P.1	Proportion of distribution input derived from impounding reservoirs	<p>The proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from impounding (gravity fed) reservoirs, including bulk supply.</p> <p>Operational sources from which no water has been obtained in the report year should not be included in the number of sources. A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works.</p>
4P.2	Proportion of distribution input derived from pumped storage reservoirs	<p>The proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from pumped storage reservoirs including bulk supply.</p> <p>A pumped storage reservoir is one where water is pumped from a river to fill the reservoir, rather than simply relying on rainfall from their limited catchment area.</p> <p>Pumped storage reservoirs received an element of gravity flow. If this flow makes a material contribution (>20%) to the volume of the reservoir the distribution input from this source should be allocated proportionally between the two reservoir types. When reporting source numbers the source should be allocated according to the type of flow that delivers the larger part of the reservoir's input. For example, if 60% of the reservoir's volume is pumped river water the source should be counted as a pumped storage source.</p> <p>Operational sources from which no water has been obtained in the report year should not be included in the number of sources. A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works.</p>
4P.3	Proportion of distribution input derived from river abstractions	<p>The proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from river abstractions including bulk supply.</p> <p>River abstraction is the process of abstracting water directly from a river.</p> <p>Operational sources from which no water has been obtained in the report year should not be included in the number of sources. A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works.</p>
4P.4	Proportion of distribution input derived from groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	<p>Proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from groundwater works including bulk supply, but excluding managed aquifer recharge (MAR) water supply schemes.</p> <p>Groundwater is water that is found underground beneath the Earth's surface and abstracted using boreholes.</p> <p>Managed aquifer recharge (MAR) describes the intentional recharge (and storage) of water into an aquifer for subsequent recovery or for environmental benefits.</p> <p>Operational sources from which no water has been obtained in the report year should not be included in the number of sources. A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works.</p>
4P.5	Proportion of distribution input derived from artificial recharge (AR) water supply schemes	<p>Proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from artificial recharge (AR) supply schemes including bulk supply.</p> <p>Artificial recharge schemes are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer before or after abstraction. The water abstracted is not necessarily the water that has been recharged, so the water can be of natural quality and require more complex treatment. This excludes aquifer storage and recovery (ASR) water supply schemes. These are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer, storing that water and maintaining its quality.</p>

4P.6	Proportion of distribution input derived from aquifer storage and recovery (ASR) water supply schemes	<p>Proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from aquifer storage and recovery (ASR) supply schemes including bulk supply.</p> <p>Aquifer storage and recovery (ASR) schemes are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer, storing that water and maintaining its quality. The aim is to enable simple and less costly treatment of the re-abstracted water, and that the water recharged is predominantly the water that is re- abstracted. This excludes artificial recharge (AR) water supply schemes. This excludes artificial recharge (AR) water supply schemes. These are a subset of managed aquifer recharge (MAR) schemes, which functions by recharging an aquifer before or after abstraction.</p>
4P.7	Proportion of distribution input from saline abstractions	<p>Proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from saline abstractions including bulk supply.</p> <p>Saline abstraction is the process of abstracting salt water and making fit to enter the distribution system.</p> <p>Operational sources from which no water has been obtained in the report year should not be included in the number of sources. A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works.</p>
4P.8	Proportion of distribution input from water reuse schemes	<p>Proportion of potable (drinkable) water that entered the distribution system (distribution input) derived from reuse schemes.</p> <p>Water reuse schemes are where effluent discharged from a Sewage Treatment Works (STW) is not returned to the environment but goes directly to a Water Treatment Works (WTW) for processing.</p>
4P.9	Number of impounding reservoirs	<p>Number of sources of impounding (gravity fed) reservoirs.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p>
4P.10	Number of pumped storage reservoirs	<p>Number of sources of pumped storage (i.e. not fed by gravity) reservoirs.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p> <p>Pumped storage reservoirs will receive an element of gravity flow. The source should be allocated according to the type of flow that delivers the larger part of the reservoir's input. For example, if 60% of the reservoir's volume is pumped river water the source should be counted as a pumped storage source.</p>
4P.11	Number of river abstractions	<p>Number of sources of river abstractions. River abstraction is the process of removing water from rivers.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p>

4P.12	Number of groundwater works, excluding managed aquifer recharge (MAR) water supply schemes	<p>Number of sources of groundwater works, excluding managed aquifer recharge (MAR) water supply schemes. Groundwater works abstract water that is found underground beneath the Earth's surface using boreholes.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p> <p>Managed aquifer recharge (MAR) describes the intentional recharge (and storage) of water into an aquifer for subsequent recovery or for environmental benefits.</p>
4P.13	Number of artificial recharge (AR) water supply schemes	<p>Number of sources of artificial recharge (AR) water supply schemes. Artificial recharge (AR) is the process of injecting (or recharging) water into the ground in a controlled way, by means of special recharge walls.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p>
4P.14	Number of aquifer storage and recovery (ASR) water supply schemes	<p>Number of sources of aquifer storage and recovery (ASR) water supply schemes. Aquifer storage and recovery (ASR) is the direct injection of surface water supplies such as potable (drinkable) water, reclaimed water, or river into an aquifer for later recovery and use.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p>
4P.15	Number of saline abstraction schemes	<p>Total number of sources of saline abstraction schemes. Saline abstraction is the process of abstracting salt water and making fit to enter the distribution system.</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby (emergency supplies) or mothballed (contains a mothballing pump) sources from which no water has been obtained in the year should not be included.</p>
4P.16	Total number of sources	<p>The total number of sources operated by a company. This should equal the sum of lines 4P.9 to 4P.15</p> <p>A source is defined as an independent raw water supply that directly supplies a treatment works, such as impounding reservoirs, river abstractions and groundwater works. Standby or mothballed sources from which no water has been obtained in the year should not be included.</p>
4P.17	Number of reuse schemes	<p>Total number of reuse schemes. Do not include in number of sources (line 4P.16). Water reuse schemes are where effluent discharged from a Sewage Treatment Works (STW) is not returned to the environment but goes directly to a Water Treatment Works (WTW) for processing.</p>
4P.18	Total number of water reservoirs	<p>All reservoirs used for holding raw water. This line shall include impounding (gravity fed) reservoirs, pumped storage reservoirs (one where the water is pumped from a river to fill them) and bank side storage facilities (where water is pumped or siphoned from a nearby river).</p>
4P.19	Total capacity of water reservoirs	<p>Total design/construction capacity (measured in megalitres) of all reservoirs used for holding raw water. This line shall include impounding (gravity fed) reservoirs, pumped storage reservoirs (one where the water is pumped from a river to fill them) and bank side storage facilities (where water is pumped or siphoned from a nearby river).</p>

4P.20	Total number of intake and source pumping stations	<p>The total number of surface water (water on the Earth's surface) intake and groundwater (water found beneath the Earth's surface) intake pumping stations associated with potable (drinkable), non-potable (non-drinkable) and raw water (water found in the environment that has not been treated) systems.</p> <p>Intake and source pumping stations abstract water directly from a source which can be an impounding reservoir, pumped storage reservoir, river or groundwater works.</p> <p>For the avoidance of doubt, this is the number of sites as opposed to the number of individual pumps.</p>
4P.21	Total number of raw water transfer stations	<p>Total number of number of raw water transfer (water found in the environment that has not been treated) stations.</p> <p>Raw water transfer stations transfer raw water from its abstraction source through the transport network to a Water Treatment Works (WTW), a raw water storage facility, or to customers that require non-potable (non-drinkable) water (including third party water companies).</p> <p>For the avoidance of doubt, this is the number of sites as opposed to the number of individual pumps.</p>
4P.22	Total capacity of intake and source pumping stations	<p>Total kiloWatts (kW's) of all abstraction pumpsets, those reported in line 4P.20 (duty, assist and standby irrespective of the number that may be working at any one time) associated with raw water (water found in the environment that has not been treated) abstraction.</p> <p>A duty pump covers daily requirements. An assist pump is one where each pump is sized for 50% of the estimated flow rate required and a standby pump is a backup pump in the event of duty pump failing.</p>
4P.23	Total capacity of raw water transfer pumping stations	<p>Total capacity, measured in kiloWatts (kW's), of all raw water transfer pumpsets, those reported in line 4P.21 (duty, assist and standby - irrespective of the number that may be working at any one time) associated with raw water transfer.</p> <p>A duty pump covers daily requirements. An assist pump is one where each pump is sized for 50% of the estimated flow rate required and a standby pump is a backup pump in the event of duty pump failing.</p>
4P.25	Average pumping head – raw water abstraction	<p>Average pumping head for the raw water abstraction business unit, the pumpsets reported in 4P.20. Average pumping head is measured as the sum of the annual mean head (defined as the average delivery pressure minus the average suction pressure when the pump is operating, or the height the water is lifted) multiplied by the total measured volume of water pumped entering the raw water abstraction price control divided by the total volume of water entering the raw water abstraction price control, whether it has been pumped or gravitated (moved by gravity).</p> <p>This is calculated using actual pumping head rather than the rating of the pumps.</p>
4P.26	Average pumping head – raw water transport	<p>Average pumping head for the raw water transport business unit, the pumpsets reported in 4P.21. Average pumping head is measured as the sum of the annual mean head (defined as the average delivery pressure minus the average suction pressure when the pump is operating, or the height the water is lifted) multiplied by the total measured volume of water pumped entering the raw water transport price control divided by the total volume of water entering the raw water transport price control, whether it has been pumped or gravitated (moved by gravity).</p> <p>This is calculated using actual pumping head rather than the rating of the pumps.</p>

4P.28	Water resources capacity (measured using water resources yield)	<p>The company level water resources capacity, which should be the sum of all company water resource zones (WRZs) across all of its licensed areas. This is the average volume of water available from the environment (dependent on the level of service and planning period) and constrained by water resources control assets. These will be assets that provide water for raw water abstraction and includes boreholes, reservoirs (impounding and pumped storage) and river abstraction assets. Assets that sit outside of the water resources control assets boundary like, for example, the water treatment capacity of the water resource zone (WRZ), will not influence the reporting of water resources yield.</p> <p>Capacity is measured in terms of water resources yield which captures the average volume of water available from the environment and constrained by water resources control assets. The abstraction asset capacities are fixed values regardless of the assumptions made. Therefore, water resources yield is constrained by:</p> <ul style="list-style-type: none"> - the company's agreed level of service (the return period of drought resilience and frequency of restriction implementation); - the company's agreed planning period period (the period over which the amount of water available is measured e.g. dry year annual average); - the baseline hydrological/hydrogeological (source) yield; - the abstraction licence availability; and - the raw water abstraction asset capacities (e.g. abstraction pumps). <p>In simple terms, where there is one raw water source, one abstraction licence, and one abstraction asset - the water resources yield, and therefore the capacity, will be the lowest of the flow rates (volume per unit time) that can be achieved across each of those three components using the company's level of service and planning period scenario(s) (i.e. the lower of, source yield - the amount available from the environment, the limit set in the abstraction licence or the physical capacity of the asset used for abstraction).</p>
4P.60	Average pumping head – water treatment	<p>Average pumping head for the water treatment business unit (water received from the raw water transport process and treated to make potable (drinkable) water. Average pumping head is measured as the sum of the annual mean head (defined as the average delivery pressure minus the average suction pressure when the pump is operating, or the height the water is lifted) multiplied by the total measured volume of water pumped entering the water treatment transport price control divided by the total volume of water entering the water treatment price control (defined potable (drinkable) water that entered the distribution system (distribution input)), whether it has been pumped or gravitated (moved by gravity).</p> <p>This is calculated using actual pumping head rather than the rating of the pumps.</p>
4P.69	Capacity of booster pumping stations	<p>Total kiloWatts (kW's) of all treated water pumpsets, those reported in line 4P.83 (duty, assist and standby irrespective of the number that may be working at any one time) associated with treated water (drinkable) distribution.</p> <p>A duty pump covers daily requirements. An assist pump is one where each pump is sized for 50% of the estimated flow rate required and a standby pump is a backup pump in the event of duty pump failing.</p>
4P.70	Capacity of service reservoirs	<p>The installed design/constructed capacity (measured in megalitres) of treated (drinkable) water service reservoirs (reservoirs used to store treated water prior to being delivered), those reported in line 4P.84, within the water supply system including treated water reservoirs at water treatment works and any secondary disinfection plant on reservoir sites. Include break pressure tanks. This excludes decommissioned assets.</p>
4P.71	Capacity of water towers	<p>The installed design/constructed capacity (measured in megalitres) of treated (drinkable) water storage towers (towers used to store treated water prior to being delivered), those reported in line 4P.85, within the water supply system. Exclude decommissioned assets.</p>

4P.72	Distribution input	<p>Distribution input is the average amount of potable (drinkable) water entering the distribution system. It is calculated as follows: Works output + Imports – Exports.</p> <p>Works output is the water that enters the distribution system from treatment works. Imports refers to any water imported from nearby regions. Exports refers to any water exported to nearby regions.</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals.</p>
4P.73	Water delivered (non-potable)	<p>All non-potable (non-drinkable) water supplied as part of the appointed business. Include all non-potable water charged at standard and non-standard rates.</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals.</p>
4P.74	Water delivered (potable)	<p>All potable (drinkable) water supplied as part of the appointed business. This includes:</p> <ul style="list-style-type: none"> a) the average volume of water delivered for billed measured (metered) residential and businesses; b) the estimated volume of water delivered for billed unmeasured (unmetered) residential and businesses; c) supply pipe leakage (water leaked from customer owned pipes; d) meter under registration for water delivered which is measured (a measure of the volume of water used that is not reported by meters); e) unbilled water taken legally for legitimate purposes (public supplies for which no charge is made e.g. some sewer flushing etc., uncharged church supplies, fire training and fire-fighting supplies where these are not charged irrespective of whether or not they are metered). This excludes volumes associated with leakage allowance rebates to metered customers; and f) water taken illegally providing it is based on actual occurrences using sound and auditable identification and recording procedures (if not this should be treated as distribution losses and excluded from this line). <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals.</p>
4P.75	Water delivered (billed residential properties)	<p>Average volume of water delivered to residential properties which is measured (Ml/d). This is to include supply pipe leakage (any loss of water from the underground supply pipe) and meter under-registration (where meters fail to record all usage).</p> <p>Additional meters fitted to measured residential properties for ancillary supplies (e.g. external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured (unmetered) residential properties if this is how revenue is allocated. Exclude miscellaneous use (Distribution system operational use, water taken legally unbilled and water taken illegally unbilled).</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals.</p>

4P.76	Water delivered (billed measured businesses)	<p>Average volume of water delivered to businesses which is measured (Ml/d). This is to include supply pipe leakage (any loss of water from customer owned pipes) and meter under-registration (a measure of the volume of water used that is not reported by meters).</p> <p>Additional meters fitted to measured businesses for ancillary supplies (e.g. external hosepipes) which are non-commercial are to be included, as should any fitted to unmeasured (unmetered) businesses if this is how revenue is allocated. Exclude miscellaneous use (Distribution system operational use, water taken legally unbilled and water taken illegally unbilled).</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals).</p>
4P.77	Total leakage	<p>Total leakage measures the sum of distribution losses (losses on the company's potable water distribution system and so excludes supply pipe leakage), reported as 4P.78, and supply pipe losses (any loss of water from customer owned pipes) in megalitres per day (Ml/d). It includes any uncontrolled losses between the treatment works and the customer's stop tap. It does not include internal plumbing losses.</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals).</p>
4P.78	Distribution losses	<p>Distribution losses represent the losses on the company's potable (drinkable) water distribution system and so excludes supply pipe leakage (any loss of water from customer owned pipes).</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals).</p>
4P.79	Water taken unbilled	<p>Total water taken unbilled (whether legally or illegally). This includes water used by the company for mains tests, flushing, washouts, running to waste, or incurred through burst mains or other leakage should be excluded.</p> <p>Unbilled water taken legally is water taken for legitimate purposes (public supplies for which no charge is made e.g. some sewer flushing etc., uncharged church supplies, fire training and fire-fighting supplies where these are not charged irrespective of whether or not they are metered). This excludes volumes associated with leakage allowance rebates to metered customers.</p> <p>Water taken illegally is water that has not legally been obtained from the treated water distribution system. It should be included providing it is based on actual occurrences using sound and auditable identification and recording procedures (if not this should be treated as distribution losses and excluded from this line).</p> <p>It is reported as a post Maximum Likelihood Estimation (MLE) figure (a statistical method used to normalise differences identified when a water company calculates their water balance (distribution input compared to water consumption + leakage) through the use of confidence intervals).</p>

4P.83	Number of booster pumping stations	<p>Total number of number of booster pumping stations.</p> <p>Booster pumping stations distribute treated (drinkable) water across the distribution system from a Water Treatment Works (WTW) to a customers and new appointees. This includes those relating to peak network capacity provision (assist pumps) and those designed to provide resilience and back up for pump failure (standby pumps).</p> <p>A duty pump covers daily requirements. An assist pump is one where each pump is sized for 50% of the estimated flow rate required and a standby pump is a backup pump in the event of duty pump failing.</p> <p>For the avoidance of doubt, this is the number of sites as opposed to the number of individual pumps. Do not include single property booster pumps.</p>
4P.84	Total number of service reservoirs	<p>The number of treated water service reservoirs (reservoirs used to store treated water prior to being delivered) within the water supply system including treated water reservoirs at water treatment works and any secondary disinfection plant on reservoir sites. Include break pressure tanks. Exclude decommissioned assets. A single structure divided into separate cells counts as one reservoir.</p>
4P.85	Number of water towers	<p>The number of treated water service towers (towers used to store treated water prior to being delivered) within the water supply system. Exclude decommissioned assets.</p>
4P.94	Average pumping head – treated water distribution	<p>Average pumping head for the treated water distribution business unit, the pump sets reported in 4P.83. Average pumping head is measured as the sum of the annual mean head (defined as the average delivery pressure minus the average suction pressure when the pump is operating, or the height the water is lifted) multiplied by the total measured volume of water pumped entering the treated water distribution price control divided by the total volume of water entering the treated water distribution price control, whether it has been pumped or gravitated (moved by gravity).</p> <p>This is calculated using actual pumping head rather than the rating of the pumps.</p>
4Q.1	Residential properties billed for measured water (external meter)	<p>Average number of billed metered residential properties with external meters. An external meter is one located underground on the customer's underground supply pipe. Closeness to the property boundary is not important. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).</p>
4Q.2	Residential properties billed for measured water (not external meter)	<p>Average number of billed metered residential properties (not externally metered). An internal meter is one located inside the customer's property or attached to the property at above ground level in a box or cabinet. All other meters should be classed as external. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).</p>
4Q.3	Business properties billed measured water	<p>Average number of business properties billed for measured water (both internal and external meters) within the supply area. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).</p> <p>An external meter is one located underground on the customer's underground supply pipe.</p> <p>An internal meter is one located inside the customer's property or attached to the property at above ground level in a box or cabinet.</p>
4Q.4	Residential properties billed for unmeasured water	<p>Average number of residential properties billed for unmeasured water within the supply area. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).</p>
4Q.5	Business billed unmeasured water	<p>Average number of businesses billed for unmeasured water within the supply area. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).</p>

4Q.6	Total business connected properties at year end	The total number of business properties connected to the water distribution system at the end of the report year. This must include properties which are connected but not necessarily billed (for example, temporarily unoccupied, or "void") but should exclude properties which have been permanently disconnected. A group of properties supplied by a single connection should be counted as several properties. They should only be treated as a single property if a single bill covers the whole property.
4Q.7	Total residential properties connected properties at year end	The total number of residential properties connected to the water distribution system at the end of the report year. This must include properties which are connected but not necessarily billed (for example, temporarily unoccupied, or "void") but should exclude properties which have been permanently disconnected. A group of properties supplied by a single connection should be counted as several properties. They should only be treated as a single property if a single bill covers the whole property.
4Q.8	Total connected properties at year end	The total number of properties (residential and business) connected to the distribution system at the end of the report year. This must include properties which are connected but not billed (for example, temporarily unoccupied, or "void") but should exclude properties which have been permanently disconnected. A group of properties supplied by a single connection should be counted as several properties. They should only be treated as a single property if a single bill covers the whole property. This should be the sum of the number of properties reported across 4Q.6 and 4Q.7.
4Q.13	Total number of new business properties connections	Total number of new business connections to a company's area of supply during the report year. This will cover the number of new business properties added for each year that were previously not connected for water supply. This excludes separation of common services, or other reconnections.
4Q.14	Total number of new household connections	Total number of new residential connections to a company's area of supply during the report year. This will cover the number of new residential properties added for each year that were previously not connected for water supply. This excludes separation of common services, or other reconnections.
4Q.15	Total population served	Total resident population served. This should include billed households supplied with unmeasured and measured water and billed business supplied with unmeasured and measured water.
4Q.16	Number of business meters (billed properties)	The total number of business meters at billed properties within the company's area supply, exclude void properties and meters at properties that are charged on an unmeasured basis. This may differ from the number of business properties if a single property has multiple meters.
4Q.17	Number of residential meters (billed properties)	The total number of residential meters at billed properties within the company's area of supply, exclude void properties and meters at properties that are charged on an unmeasured basis. This may differ from the number of residential properties if a single property has multiple meters.
4Q.20	Total supply side enhancements to the supply demand balance (dry year critical / peak conditions)	Incremental supply side improvements delivered during the reporting year to the dry year critical / peak period supply demand balance as at the start of the reporting year. The reported value should account for all water resource zones. Where dry year critical / peak conditions have not been presented in the current WRMP for a specific zone, the dry year annual average conditions should be substituted. Supply side enhancements should include all resource and production options. Interpretation of resource and production options, dry year critical period and dry year annual average should align with water resources management plan guidance.

4Q.21	Total supply side enhancements to the supply demand balance (dry year annual average conditions)	<p>Incremental supply side improvements delivered during the reporting year to the dry year annual average supply demand balance as at the start of the reporting year. The reported value should account for all water resource zones.</p> <p>Supply side enhancements should include all resource and production options. Interpretation of resource and production options, dry year critical period and dry year annual average should align with water resources management plan guidance.</p>
4Q.22	Total demand side enhancements to the supply demand balance (dry year critical / peak conditions)	<p>Incremental demand side improvements delivered during the reporting year to the dry year critical / peak period supply demand balance as at the start of the reporting year. The reported value should account for all water resource zones.</p> <p>Where dry year critical / peak conditions have not been presented in the current WRMP for a specific zone, the dry year annual average conditions should be substituted.</p> <p>Demand side enhancements should include all distribution and customer side options. Interpretation of resource and production options, dry year critical period and dry year annual average should align with water resources management plan guidance. Demand side enhancements should be reported as a positive number.</p>
4Q.23	Total demand side enhancements to the supply demand balance (dry year annual average conditions)	<p>Incremental demand side improvements delivered during the reporting year to the dry year annual average period supply demand balance as at the start of the reporting year. The reported value should account for all water resource zones.</p> <p>Demand side enhancements should include all distribution and customer side options. Interpretation of resource and production options, dry year critical period and dry year annual average should align with water resources management plan guidance. Demand side enhancements should be reported as a positive number.</p>
4Q.27	Mean Zonal Compliance	<p>The mean zonal percentage compliance from the regulatory sampling programme, based on current regulations and standards (including the tightening of the lead standard in 2013) as reported to the Drinking Water Inspectorate (DWI).</p> <p>The measure is based on up to 39 parameters which are determined by the DWI, where data is obtained through sampling. The percentage compliance score is calculated from the number of determinants taken minus the number of determinants that failed the relevant drinking water standard in each water quality zone. It is calculated by averaging the mean zonal percentage compliance from the regulatory sampling programme. Each parameter is weighted equally.</p> <p>The measure is the company's performance for the calendar year. Calendar year performance 2018 will be reported in the 2018-19 reporting.</p>

4Q.28	Compliance Risk Index	<p>The compliance risk index (CRI) from the regulatory sampling programme, based on current regulations and standards (including the tightening of the lead standard in 2013) as reported to the Drinking Water Inspectorate (DWI).</p> <p>The measure is based on up to 55 parameters which are determined by the DWI, where data is obtained through sampling. Each sampling failure is given a CRI score depending on sampling point:</p> <ul style="list-style-type: none"> • Water supply zones = parameter score x assessment score x population affected (the population within the water supply zone impacted) / total company population served; • Supply point and treatment works = parameter score x assessment score x volume supplied (m³/day) (by that supply point / treatment works impacted) / total daily volume supplied by the company (m³/day); or • Service reservoirs = parameter score x assessment score x reservoir capacity (m³) (of the service reservoir impacted) / total service reservoir capacity of the company (m³); where <ul style="list-style-type: none"> • parameter score is based on the scoring matrix as defined by the DWI in their CRI guidance dated August 2018; and • assessment score provided by the DWI. <p>The measure is the company's performance for the calendar year and is the sum of the individual CRI scores received throughout the reporting period. Calendar year performance 2018 will be reported in the 2018-19 reporting.</p>
4Q.29	Event Risk Index	<p>The event risk index (ERI) is a Drinking Water Inspectorate DWI measure of reportable events. Individual events are provided a score by the DWI using the following formula:</p> $\text{ERI} = (\text{seriousness} \times \text{assessment outcome} \times \text{impact}) / \text{total population served by the company};$ <p>where seriousness, assessment outcome and impact are determined by the DWI using their ERI guidance dated August 2018.</p> <p>The measure is the company's performance for the calendar year and is the sum of the individual ERI scores received throughout the reporting period. Calendar year performance 2018 will be reported in the 2018-19 reporting.</p>
4Q.30	Volume of Leakage above or below the Sustainable Economic Level	<p>The variance between actual leakage (the volume of water leaking from the company's water supply assets) and the sustainable economic level of leakage (where leakage is equal to the natural rate of rise). Leakage below the economic level will have a negative value. To be disclosed as Ml/d.</p>
4R.3	Total pumping station capacity	<p>Total installed pumping capacity, measured in kiloWatts (kW's), of all sewage pumping stations (including standby pumps). Include foul (residential and business waste), combined (highways and surface drainage), stormwater and terminal (final pump prior to treatment) pumping stations. Exclude inter-stage pumping within a sewage treatment works or sludge treatment centre. Report capacity of all installed pumps (irrespective of the number that may be working at any one time).</p>

4R.23	Total sewage sludge produced, treated by incumbents	<p>This is a measure of all the untreated sewage sludge (primary, secondary, tertiary) produced by in-area wastewater treatment processes in the report year which is either treated by the incumbent or remains untreated prior to disposal. Grit and screenings removed through preliminary treatment processes should be excluded. Cross-border imports should be excluded.</p> <p>Primary sludge is a result of the capture of suspended solids and organics in the primary treatment process.</p> <p>Secondary sludge has a lower biogas potential because the microorganisms in the secondary treatment process have consumed most of their energy content leaving behind mainly inert biomass.</p> <p>Tertiary sludge is sludge that has had the phosphates and nitrates from the water supply removed.</p> <p>Sludge treated by managed contractors should be included; sludge treated by separate 3rd party service providers should be reported in 4R.24 (Total sewage sludge produced, treated by 3rd party sludge service provider).</p>
4R.24	Total sewage sludge produced, treated by 3rd party sludge service provider	<p>This is a measure of all the untreated sewage sludge (primary, secondary, tertiary) produced by in-area wastewater treatment processes in the report year which is treated by a 3rd party sludge service provider. Grit and screenings removed through preliminary treatment processes should be excluded. Cross-border imports should be excluded.</p> <p>Primary sludge is a result of the capture of suspended solids and organics in the primary treatment process.</p> <p>Secondary sludge has a lower biogas potential because the microorganisms in the secondary treatment process have consumed most of their energy content leaving behind mainly inert biomass.</p> <p>Tertiary sludge is sludge that has had the phosphates and nitrates from the water supply removed.</p> <p>Sludge treated by managed contractors (as opposed to separate 3rd party service providers) should be excluded; instead it should be reported in 4R.23 (Total sewage sludge produced, treated by incumbents).</p>
4R.25	Total sewage sludge produced	To be entered as the sum of 4R.23 (Total sewage sludge produced, treated by incumbents) and 4R.24 (Total sewage sludge produced, treated by 3rd party sludge service provider).
4R.26	Total sewage sludge produced from non-appointed liquid waste treatment	This is an estimate of all the untreated sewage sludge (primary, secondary, tertiary) produced by in-area wastewater treatment processes in the report year, and which is produced as a result of treating non-appointed liquid wastes through appointed wastewater treatment assets. Because this sludge is generated at in-area wastewater treatment sites we expect this quantity to be included in the total given in line 25 above. Cross-border imports should be excluded.
4R.27	Percentage of sludge produced and treated at a site of STW and STC co-location	<p>The percentage of the sludge quantity reported in 4R.25 that is produced at co-located sites. For the purposes of this definition:</p> <p>i) "co-located" includes sites where the STC is physically separate but the sludge is transferred from a wastewater treatment site by pipeline,</p> <p>and ii) STC means any site where sludge is treated to a standard such that it can be recycled to the environment or disposed of without any further treatment.</p>

4R.28	Total sewage sludge disposed by incumbents	<p>The total amount of sewage sludge treated and disposed of during the report year by the incumbent expressed in thousands of tonnes of dry solids of sludge disposed by the whole service. This should include disposal to farmland (irrespective of whether spreading is undertaken by the 3rd party service provider or the farmer), landfill, incineration, composting and other routes. This will be different from sewage sludge produced due to:</p> <ul style="list-style-type: none"> - quantities of lime used in lime treated sludge, - losses of volatile solids in the treatment process, and - changes in the amount of stockpiled sludge. <p>Sludge disposed of by managed contractors should be included; sludge disposed of by separate 3rd party service providers should be reported in 4R.29 (Total sewage sludge disposed by 3rd party sludge service provider).</p>
4R.29	Total sewage sludge disposed by 3rd party sludge service provider	<p>The total amount of sewage sludge treated and disposed of during the report year by a 3rd party sludge service provider expressed in thousands of tonnes of dry solids of sludge produced by the whole service. This should include recycling to farmland (irrespective of whether spreading is undertaken by the 3rd party service provider or the farmer) and disposal to landfill, incineration, land restoration/ reclamation, composting and other routes. This may be different from sewage sludge produced due to:</p> <ul style="list-style-type: none"> - quantities of lime used in lime treated sludge, - losses of volatile solids in the treatment process, and - changes in the amount of sludge stockpiled at sludge treatment centres. <p>Sludge disposed of by managed contractors (as opposed to separate 3rd party service providers) should be excluded; instead it should be reported in line 4R.28 (Total sewage sludge disposed by incumbents).</p>
4R.30	Total sewage sludge disposed	To be entered as the sum of 4R.28 (Total sewage sludge disposed by incumbents) and 4R.29 (Total sewage sludge disposed by 3 rd party sludge service provider).
4R.31	Total measure of intersiting 'work' done by pipeline	<p>Total work done in intersiting sludge operations by pipeline during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance conveyed (in km). Based on actual length of pipeline from sludge holding tanks to Sludge Treatment Centre, not straight line distance. This measure should not include sludge transported between Sewage Treatment Works via a gravity sewer, the operating costs of which are allocated to Network+.</p> <p>$(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$</p>
4R.32	Total measure of intersiting 'work' done by tanker	<p>Total work done in intersiting sludge operations carried out by road tanker during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance travelled (in km). Based on actual distance travelled from sludge holding tanks to Sludge Treatment Centre, not straight line distance. If actual road distances aren't available please estimate this road distance and state in comments if this is the case. Work done by other forms of transport of liquid sludge (e.g. tractors) should be included in this line. This measure should exclude the distance travelled by vehicles to the sewage treatment works to collect the sludge.</p> <p>$(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$</p>

4R.33	Total measure of intersiting 'work' done by truck	<p>Total work done in intersiting sludge operations carried out by truck during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance travelled (in km). Based on actual distance travelled from sludge holding tanks to Sludge Treatment Centre, not straight line distance. If actual road distances are not available please estimate this road distance and state in comments if this is the case. This measure should exclude the distance travelled by vehicles to the sewage treatment works to collect the sludge.</p> $(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$
4R.34	Total measure of intersiting 'work' done (all forms of transportation)	To be entered as the sum of 4R.31 (Total measure of intersiting 'work' done by pipeline), 4R.32 (Total measure of intersiting 'work' done by tanker) and 4R.33 (Total measure of intersiting 'work' done by truck).
4R.35	Total measure of intersiting 'work' done by tanker (by volume transported)	<p>Total work done in intersiting sludge operations carried out by road tanker during the report year measured as the product of sludge volume (in m³) multiplied by distance travelled (in km) in transporting the sludge. Based on actual distance travelled from sludge holding tanks to Sludge Treatment Centre, not straight line distance. If actual road distances aren't available please estimate this road distance and state in commentary if this is the case. Work done by other forms of transport of liquid sludge (e.g. tractors) should be included in this line. This measure should exclude the distance travelled by vehicles to the sewage treatment works to collect the sludge. No account should be taken of distance travelled by empty tankers.</p> $(km1*m^31)+(km2*m^32)+.....(kmN*m^3N)$
4R.36	Total measure of 'work' done in sludge disposal operations by pipeline	<p>Total work done in sludge disposal operations carried out by pipeline (e.g. transport to an incinerator) during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance travelled (in km). Based on actual distance travelled from the Sludge Treatment Centre to the landbank, landfill site, land reclamation site or incinerator as appropriate, not straight line distance.</p> $(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$
4R.37	Total measure of 'work' done in sludge disposal operations by tanker	<p>Total work done in sludge disposal operations carried out by road tanker during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance travelled (in km). Based on actual distance travelled from the Sludge Treatment Centre to the landbank, landfill site or land reclamation site as appropriate, not straight line distance. If actual road distances are not available, please estimate this road distance and state in comments if this is the case. Work done by other forms of transport of liquid sludge (e.g. tractors) should be included in this line.</p> $(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$
4R.38	Total measure of 'work' done in sludge disposal operations by truck	<p>Total work done in sludge disposal operations carried out by truck during the report year measured as the product of sludge mass (in thousand tonnes dry solids) multiplied by distance travelled (in km). Based on actual distance travelled from the Sludge Treatment Centre to the landbank, landfill site or land reclamation site as appropriate, not straight line distance. If actual road distances are not available, please estimate this road distance and state in comments if this is the case.</p> $(km1*tds1)+(km2*tds2)+.....(kmN*tdsN)$
4R.39	Total measure of 'work' done in sludge disposal operations (all forms of transportation)	The sum of lines 4R.36 (Total measure of 'work' done in sludge disposal operations by pipeline), 4R.37 (Total measure of 'work' done in sludge disposal operations by tanker), and 4R.38 (Total measure of 'work' done in sludge disposal operations by truck).

4R.40	Total measure of 'work' done by tanker in sludge disposal operations (by volume transported)	Total work done in sludge disposal operations carried out by road tanker during the report year measured as the product of sludge volume (in m ³) multiplied by distance travelled (in km) in transporting the sludge. Based on actual distance travelled from the Sludge Treatment Centre to the landbank, landfill site or land reclamation site as appropriate, not straight line distance. If actual road distances are not available, please estimate this road distance and state in comments if this is the case. Work done by other forms of transport of liquid sludge (e.g. tractors) should be included in this line. No account should be taken of distance travelled by empty tankers. $(km_1 * m_{31}) + (km_2 * m_{32}) + \dots + (km_N * m_{3N})$
4R.41	Chemical P sludge as percentage of sludge produced at STWs	The total quantity of sludge produced at wastewater treatment works which use chemical dosing for phosphorus removal expressed as a percentage of total sludge produced at all in area wastewater treatment works (i.e. 4R.25)
4S.1	Load received by STWs in size band 1	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 1 (<= 15 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.2	Load received by STWs in size band 2	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 2 (15-30 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.3	Load received by STWs in size band 3	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 3 (30-120 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.4	Load received by STWs in size band 4	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 4 (120-600 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.5	Load received by STWs in size band 5	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 5 (600-1,500 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.6	Load received by STWs above size band 5	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of size band 6 (>1,500 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water. Reported values should agree with those reported in 4O.9 (Load received by Sewage Treatment Works for Large Sewage Treatment Works).
4S.7	Total load received	Average daily pollution loads in kilograms BOD ₅ received by sewage treatment works of all sizes. BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water. This is calculated as sum of 4S.1 (Load received by Sewage Treatment Works size band 1) to 4S.6 (Load received by Sewage Treatment Works size band 6).
4S.8	Load received from trade effluent customers at treatment works	Average daily pollution load in kilograms BOD ₅ received by sewage treatment works of all sizes from trade effluent customers. BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water. Trade effluent customers relates to non-households/businesses.

4S.9	STWs in size band 1	Number of sewage treatment works of size band 1 (≤ 15 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.10	STWs in size band 2	Number of sewage treatment works of size band 2 (15-30 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.11	STWs in size band 3	Number of sewage treatment works of size band 3 (30-120 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.12	STWs in size band 4	Number of sewage treatment works of size band 4 (120-600 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.13	STWs in size band 5	Number of sewage treatment works of size band 5 (600-1,500 kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.14	STWs above size band 5	Number of sewage treatment works of size band above size band 5 ($>1,500$ kilograms BOD ₅ per day). BOD ₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.
4S.15	Total number of works	Total number of sewage treatment works of all sizes. Calculated as sum of 4S.9 (Sewage Treatment Works in size band 1) to 4S.14 (Sewage Treatment Works above size band 5).
4S.16	Current population equivalent served by STWs	<p>Population equivalent (resident) connected to sewage treatment works. Equivalent population should be calculated on the basis of 60 grams BOD₅ per capita per day. Imported effluents should be included in calculation. No account should be taken of holiday (non-resident) population.</p> <p>BOD₅ stands for '5-day Biochemical Oxygen Demand'. This measures the quantity of biodegradable organic matter contained in water.</p> <p>Resident population includes trade effluent (non-households/businesses).</p>
4S.17	Current population equivalent served by discharge relocation schemes	Population equivalent served by schemes to relocate the discharge to receiving waters, delivered in the report year and for which capital costs are reported in 4M.21 (National Environment Programme – Flow 1 schemes). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenditure solutions.
4S.18	Current population equivalent served by filter bed STWs with tightened/new P consents	Population equivalent served by biological filter Sewage Treatment Works at which there are new or tightened consent conditions for phosphorus, delivered in the report year and for which capital costs are reported in 4M.18 (National Environment Programme – Reduction of sanitary parameters). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenditure solutions.
4S.19	Current population equivalent served by activated sludge STWs with tightened/new P consents	Population equivalent served by activated sludge Sewage Treatment Works at which there are new or tightened consent conditions for phosphorus, delivered in the report year and for which capital costs are reported in 4M.17 (National Environment Programme – Nutrients (Phosphorus removal at filter bed Sewage Treatment Works). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenditure solutions.

4S.20	Current population equivalent served by groundwater protection schemes	Population equivalent served by schemes to deliver improvements driven by the European Union Groundwater Directive, delivered in the report and for which capital costs are reported in 4M.14 (National Environment Programme – Groundwater schemes). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenditure solutions
4S.21	Current population equivalent served by STWs with a Flow1 driver scheme	Current population equivalent served by Sewage Treatment Works with a Flow1 driver code, delivered in the report and for which capital costs are reported in 4M.22 (Odour). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenditure solutions.
4S.22	Current population equivalent served by STWs with tightened/new N consents	Population equivalent served by Sewage Treatment Works at which there are new or tightened consent conditions for nitrogen, delivered in the report and for which capital costs are reported in 4M.16 (Current population equivalent served by discharge relocation schemes). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenses solutions.
4S.23	Current population equivalent served by STWs with tightened/new sanitary parameter consents	Population equivalent served by Sewage Treatment Works at which there are new or tightened consent conditions for one or more sanitary parameters, delivered in the report year and for which capital costs are reported in 4M.19 (Current population equivalent served by groundwater protection schemes). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenses solutions.
4S.24	Current population equivalent served by STWs with tightened/new UV consents	Population equivalent served by Sewage Treatment Works at which there are new or tightened consent conditions for microbiological parameters to meet the requirements of the European Union Shellfish Waters or revised Bathing Water Directives, delivered in the report year and for which capital costs are reported in 4M.20 (Current population equivalent served by Sewage Treatment Works). Exclude population equivalent served where the output has primarily been met through operating expenses rather than capital expenses solutions.
4S.25	Population equivalent treatment capacity enhancement	The increase in treatment capacity, from company action, measured in population equivalent. The increase must be measured from the previous year's capacity of existing sewage treatment works and the previous capacity at each works must be the higher of the then current design capacity or the company's revised understanding of actual capacity before the company's action.
4T.1	% Sludge - untreated	Percentage of sludge produced which is untreated prior to disposal.
4T.2	% Sludge treatment process - raw sludge liming	Percentage of sludge produced which is untreated other than by liming.
4T.3	% Sludge treatment process - conventional AD	Percentage of sludge produced which is treated by conventional Anaerobic Digestion (with or without liming).
4T.4	% Sludge treatment process- advanced AD	Percentage of sludge produced which is treated by advanced Anaerobic Digestion (with or without liming). Advanced Anaerobic Digestion includes the following types: Thermal Hydrolysis Process, Enzymic Hydrolysis, two- stage + Publicly Available Specification 110 certified and Acid Phase Digestion.
4T.5	% Sludge treatment process - incineration of raw sludge	Percentage of sludge produced which is untreated other than by incineration.
4T.6	% Sludge treatment process - incineration of digested sludge	Percentage of sludge produced which is digested and then incinerated.
4T.7	% Sludge treatment process - phyto-conditioning/composting	Percentage of sludge produced which is phyto- conditioned or composted.

4T.8	% Sludge treatment process - other (specify)	Percentage of sludge produced by other treatment type(s) than those described in 4T.2 (% Sludge treatment process - raw sludge liming) to 4T.7 (% Sludge treatment process - phyto-conditioning/composting).
4T.9	% Sludge treatment process - Total	Calculated as the sum of lines 4T.1 (% Sludge – untreated) to 4T.8 (% Sludge treatment process - other (specify)). The totals for the incumbent and 3rd party service provider columns should sum to 100%.
4T.10	% Sludge disposal route - landfill, raw	Percentage of (un-incinerated) sludge by disposal route - landfill, raw.
4T.11	% Sludge disposal route - landfill, partly treated	Percentage of (un-incinerated) sludge by disposal route - landfill, partly treated.
4T.12	% Sludge disposal route - land restoration / reclamation	Percentage of (un-incinerated) sludge by disposal route - land restoration / reclamation.
4T.13	% Sludge disposal route - sludge recycled to farmland	Percentage of (un-incinerated) sludge by disposal route - sludge recycled to farmland.
4T.14	% Sludge disposal route - other (specify)	Percentage of (un-incinerated) sludge by disposal route - other (specify).
4T.15	% Sludge disposal route – Total	The totals for the incumbent and 3rd party service provider columns should sum to 100%.
4U.1	Residential properties connected during the year	The number of new residential properties added for each period within the company's sewerage area during the report year.
4U.2	Business properties connected during the year	The number of new business properties added for each period within the company's sewerage area during the report year. This is the number of new connections; disconnections and demolished properties should not be netted off.
4U.3	Residential properties billed unmeasured sewage	Average number of residential properties billed for unmeasured (unmetered) sewerage within the undertaker's area. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).
4U.4	Residential properties billed measured sewage	Average number of residential properties billed for measured sewerage within the undertaker's area. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants). Include residential properties billed for measured water supply where sewerage bills are based on value of water supplied.
4U.5	Residential properties billed for sewage	Residential properties billed for sewerage. Calculated as the sum of 4U.3 (Residential properties billed unmeasured sewerage) and 4U.4 (Residential properties billed measured sewerage).
4U.6	Business properties billed unmeasured sewage	Average number of business properties billed for unmeasured sewerage. Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).
4U.7	Business properties billed measured sewage	Average number of business properties billed for measured sewerage, including trade effluent customers (businesses). Exclude void properties (properties connected to the sewerage system but do not receive a charge as there are no occupants).

4U.8	Business properties billed for sewerage	Business properties billed for sewerage. Calculated as the sum of 4U.6 (Business properties billed unmeasured (unmetered) sewerage) and 4U.7 (Business properties billed measured (metered) sewerage).
4U.9	Void properties	Average number of properties (residential and business) within the undertaker's area which are connected to the sewerage system but do not receive a charge as there are no occupants. This should not include properties that do not receive a bill because it would be uneconomical to do so.
4U.10	Number of properties	Total number of connected properties. This is calculated as the sum of 4U.5 (Residential properties billed for sewerage); 4U.8 (Business properties billed for sewerage) and 4U.9 (Void properties).
4U.11	Resident population	The annual average resident population connected to the sewerage system. For clarity, residential population includes the trade effluent (businesses); it is not confined to just households.
4U.12	Non-resident population	The annual average holiday and tourist population connected to the sewerage system. Do not include daily commuters or day visitors.
A1	Total number of contracts held with third party at the end of the financial year	The number of current contracts held with third parties to provide a bioresources service (treatment, transport, recycling) at the end of the financial year. Where a contract covers more than one service (transport, treatment and/or recycling) companies should record this as a single contract. Companies should not include contracts that they hold with joint ventures, associated companies or where they retain ownership of assets or equipment being used by contractors on their behalf.
A2	Total amount paid on contracts during the financial year	The total amount paid to third parties on bioresources service contracts during the financial year. This is for all contracts. It includes any amount of money paid out on contracts that ended during the year.
A3	Number of different suppliers at the year end	The number of different suppliers with contracts held with the company to provide a bioresources service. A company's own bioresources business should not be counted as a supplier.
A4	Number of contracts ended during the year	The number of contracts that have either been terminated in the year or have come to the end of the contract. Where a contract has been terminated the company should provide details in an accompanying commentary for the reason for its termination.
A5	Number of contracts renewed during the year	The number of contracts renewed during the financial year to provide a bioresources service.
A6	Number of new contracts that have been agreed during the year	The number of new contracts that have been agreed during the financial year to provide a bioresources service.
B1	Number of formal tenders you issued during the year	The number of formal tenders issued during the financial year asking for bids by a third party to provide bioresources services.
B2	Total number of bids received on all your tenders	Total number of bids received for all formal tenders issued during the year. For instance, if a company received 6 bids for one project, the company should count all six bids. For clarity, this has been done based on the bids received in the year, for tenders also issued in the year. Any bids received in the year on tenders issued in the previous year have not been included.
B3	Number of tenders you awarded during the year	Number of contracts awarded during the year through the formal tendering process. The company should provide an explanation where the number of tenders awarded is different from the number of formal tenders issued during the financial year. For example, differences may occur where the financial tender was issued the financial year before the contract was awarded, or where no bids were received for a tender.

C1	Number of offers made by a third party outside the formal tender process during the financial year	The number of offers or bids received by the company outside of any formal tendering process. We expect that an offer of services would include some financial and contractual detail, similar to what might be provided through an 'Expression of Interest' in a tendering process. We do not expect a company to count every speculative contact made either in writing or by phone.
C2	The number of successful offers	The number of offers or bids that have resulted in a contract being agreed during the financial year.
D1	Total quantity of sludge produced in the performance of the company's functions as a sewerage undertaker	Total quantity of sludge produced by the network plus function. This figure should be given as thousand tonnes of dry solids in the financial year.
D2	Quantity of sludge treated in-house	Thousand tonnes of dry solids treated in-house by your own bioresources business in the financial year.
D3	Quantity of sludge treated by a third party	Thousand tonnes of dry solids treated in-house by your own bioresources business in the financial year.
D4	Number of contracts to provide sludge treatment	The number of current contracts held with third parties to provide sludge treatment.
D5	Number of suppliers with contracts for sludge treatment	The number of different third-party suppliers that hold contracts to treat sludge as at the end of the financial year. The company should not include its own bioresources business as a supplier.
E1	Total quantity of sludge transported by road	Total thousand tonnes dry solids of sludge transported by road. This includes sludge transported from the network plus function to the sludge treatment centre (STC) as well as sludge from the (STC) to either a disposal site or for recycling to land.
E2	Quantity of sludge transported by road in-house by your own bioresources service	Thousand tonnes of dry solids transported by your own bioresources business in the financial year.
E3	Quantity of sludge transported by road by a third party	Thousand tonnes of dry solids transported by a third party in the financial year.
E4	Number of contracts to provide sludge transport services	The number of current contracts held with third parties to provide sludge transportation.
E5	Number of suppliers with contracts for sludge transportation	The number of different third-party suppliers that hold contracts to transport sludge as at the end of the financial year. The company should not include its own bioresources business as a supplier.
F1	Total quantity of sludge recycled or disposed	Total thousand tonnes dry solids of sludge that is either disposed of or taken to land for recycling. This figure is reported in thousand tonnes dry solids for the financial year.
F2	Quantity of sludge recycled or disposed in-house by your own bioresources service	Thousand tonnes of dry solids disposed or recycled by your own bioresources business in the financial year.
F3	Quantity of sludge recycled by a third party	Thousand tonnes of dry solids disposed or recycled by a third party in the financial year.
F4	Number of contracts held to provide sludge recycling or disposal services	The number of current contracts held with third parties to provide sludge recycling or disposal services.

F5	Number of suppliers with contracts for sludge recycling or disposal	The number of different third-party suppliers that hold contracts to dispose of or recycle sludge at the end of the financial year. The company should not include its own bioresources business as a supplier.
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**As stated within the Northumbrian Water Limited's responsibilities section of our Independent Limited Assurance Report to the Directors of Northumbrian Water Limited dated 10 July 2019, the reporting criteria are owned by management. The Directors of Northumbrian Water Limited are responsible for establishing objective Reporting Criteria for preparing the Selected Information; and measuring and reporting the Selected Information based on the Reporting Criteria.*