Scottish Water

Always serving Scotland

SCOTTISH WATER

WIC ANNUAL RETURN

COMMENTARIES

June 2014

Table of Contents

A Tables Base Information

Table A1 Connected and Billed Properties

General Comments

Property numbers are for the report year as at 30 September 2013.

A confidence grade of A2 has been applied to the figures reported in Table A1 for household properties in the report year, and B4 for non-household properties. The confidence grade reflects number of properties expected to be added at the Central Market Agency (CMA) via the gap sites project currently underway, in addition to the other known issues noted in this commentary. Further details are set out below.

Data Sources

The non-household figures have been sourced from settlement reports supplied by the CMA, consistent with the Annual Returns since 2009.

Since the retail market opened to competition in April 2008, the CMA has calculated all wholesale primary charges due to Scottish Water from Licensed Providers via a series of settlement runs in respect of each month. For each settlement run, the CMA provides an aggregated settlement report which is used by Scottish Water for billing purposes and a disaggregated settlement report to enable reconciliation of wholesale charges by market participants. These disaggregated settlement reports have been used to populate the Annual Return A Tables, consistent with previous years.

There are four reconciliation runs undertaken for each month, P1, R1, R2 and R3. The required frequency of runs is set out in the Market Code and supporting Code Subsidiary Documents. These are undertaken according to a timetable published by the CMA. The September 2013 2nd Reconciliation (R2), the latest available at the end of March 2014, was used to populate the A Tables.

The A Tables are then populated based on reports from Scottish Water's reconciliation datamart which contains the disaggregated settlement reports issued by the CMA.

The disaggregated settlement reports include all premises which are in settlement at the CMA. When new Supply Points are created, via either the New Connection or the Gap Site processes, under the market arrangements there are a number of steps to be followed, starting with the Supply Point being requested by Scottish Water and finishing with it being accepted into charge by the Licensed Provider. Between these two points, the Supply Point is created in the CMA's systems but is not included in settlement and therefore cannot generate wholesale charges. Such Supply Points are designated as being 'New' or 'Partial' in the CMA systems and, because they are not in settlement, they are not included in the Annual Return.

As of 1st April 2014 there were 1,056 water and 1,088 sewerage 'New' and 'Partial' Supply Points registered at the CMA. The current balance of 'New' and 'Partial' Supply Points consists of an ongoing run-rate of new connections and gap sites. These values include a group of 160 premises which were the result of historical systems processing issues. These systems issues have now been resolved and data corrections are being progressed to address these legacy cases. The current balance of "New and "Partial" Supply Points also includes 715 remaining from the Gap site Phase 2 Project which are waiting to be processed into settlement by the relevant Licensed Provider.

A further group of 2,952 Supply Points were previously rejected from the new connection or gap site processes by the Licensed Provider during the Gap Site Phase 2 Project and are neither in settlement nor in 'New' or 'Partial' Status. These rejections include cases where Scottish Water agrees that a Supply Point had been created in error as well as premises which are not currently registered at the CMA and which Scottish Water considers have been rejected erroneously. The latter group, which still require to be processed into settlement, will be reviewed by Scottish Water and resubmitted to Licensed Providers through the current Gap Site Project. The CMA has now made changes to the Central Systems which prevent Licensed Providers from rejecting by automated means Scottish Water-presented Gap Sites during the registration process, consistent with the Market Code. Where a Gap Site proposed by Scottish Water is thought to be invalid, a deregistration request must be submitted to Scottish Water, thus ensuring a clear audit trail and proper review of the case.

The 'New' and 'Partial' Supply Points are held in the Central Systems but are not in settlement and therefore not reflected in the A Tables.

In 2012 the Commission initiated a Data Improvement Project involving all market participants, in view of data issues arising at point of customer transfer and the importance of data quality in light of the potential development of an Anglo-Scottish market. Following initial assessment, a Data Alignment Project was initiated. The project aim was to ensure that asset data and customer data are properly aligned. There were three 'workstreams', a one-off data reconciliation to align customer billing data with CMA data; a review of meter asset data over the course of a meter reading cycle to identify and resolve any anomalies; and a review of a group of Supply Points which are candidates for deregistration from the market. The data of all Market Participants continues to be audited annually by the Market Auditor in the usual way.

The data changes made under the project fall into a number of categories. Firstly, under the one-off services alignment exercise, the Licensed Providers proposed changes to a number of data items that are Scottish Water-owned under the Market Code and also made a number of changes to Roads and Property Drainage data items, being at the time the data owner, and to Rateable Valuation. Other changes made were to physical and chargeable meter sizes; return to sewer allowance; meter location notes; XY coordinates; and the status of service elements. In terms of changes to the status of services during the course of the project, changes were made to the status of Roads and Property drainage at 5,013 premises; and to the status of service elements at 3,120 premises. The changes made could be either the removal or application of a service element.

Secondly, Scottish Water reviewed a group of Supply Points which were deregistration candidates. Additionally, deregistrations were identified as a consequence of analysis under other workstreams. A total of 10,750 candidates were reviewed and as at April 2014, 5,721 premises were deregistered from the market by the project. Not all of these had been processed by the time of the September 2013 R2 settlement run on which the Annual Return is based.

The third project work stream was a review of meters and associated data. The Licensed Provider's meter readers were asked to obtain information about the meters, to allow comparison with the information held at the CMA. In total, 103,043 meters were visited under this programme and information provided to Scottish Water to review. As relevant, data fields were subsequently amended at the CMA.

In addition to the activities being undertaken above, a further 'gap sites' project is underway. The CMA has been undertaking a comparison between premises listed in the records of the Scottish Assessors Association (SAA) and premises registered in the market. The intention of the exercise is to establish a cross-reference between the premises which are assessed and the premises registered in the market. Where no match can be obtained and the CMA consider the assessed property to be an eligible premises, it is considered to be a potential gap site for

review by Scottish Water and Licensed Providers. When the cross referencing is complete, the intention is to make that information available in the CMA's Central Systems in the interests of data quality.

The initial pilot phase of the exercise comprised a review of properties in Clackmannanshire and this is now being extended to all postcode areas in a phased approach. The CMA has provided Scottish Water with candidate gap sites in three post code areas, namely DD, ML and KA. The potential gap sites are being investigated and as appropriate processed into the market. From February 2014 the CMA has been publishing a list of potential gap sites for each postcode area to Licensed Providers and Scottish Water via a web-based portal known as the "Silver Tassie". Licensed Providers and Scottish Water are able to reserve the sites on the portal for a period, following which unclaimed sites will be reviewed and processed by Scottish Water. The Licensed Provider for such sites will be allocated by the CMA in accordance with the Market Code.

Processing work has commenced but the project is at a relatively early stage making it difficult to quantify, with any confidence, the outcome in terms of numbers of premises which will be registered in the market. The current forecast model, based on the three postcode areas reviewed by the CMA, estimates up to 50,000 potential candidate sites will be identified for investigation by Scottish Water. However, experience from previous gap site projects is that attrition rates are high so the number of sites created will be considerably less and a proportion of those registered will only be liable for Roads and Property Drainage. Findings to date of the initial group are that a proportion do not have services from Scottish Water and some are already registered in the market. The outcomes from this current Gap Site project will impact on the data reported in the A tables in future years.

Scottish Water has continued to survey the occupancy status of properties. In April 2012 the Commission introduced the Vacancy Charging Admin Scheme which enabled Scottish Water, following the process set out in the Market Code, to change the status of a Supply Point from vacant to occupied where it had evidence of occupancy. The registered Licensed Provider may challenge such changes and refer its own evidence to an Independent Expert for review where it disagrees with the proposed change. The other incentive scheme addressing the occupancy status of sites is the Commission's Vacant Site Incentive Scheme. This scheme enables Licensed Providers to claim incentive payments for identifying Supply Points registered to another LP which are wrongly flagged as vacant and having them corrected at the CMA, as well as for changes to sites for which they are the registered Licensed Provider, in accordance with the rules of the scheme.

The effect of these changes is to provide Scottish Water with a mechanism to correct erroneously recorded occupancy status and to incentivise other Licensed Providers to identify Supply Points wrongly flagged as vacant. These changes have resulted in a substantial increase in properties recorded as occupied. For the first Annual Return since market opening the net effect of changes to occupancy status in the last year is an overall movement from vacant to occupied, as shown in the table below.

As noted above, under the auspices of the Commission's Data Alignment Project, a group of 5,721 premises were deregistered from the market. The majority of these had been flagged as vacant at the time. The effect of their removal from the market will be to make it easier to monitor the remaining premises flagged as vacant.

As of March 2014, 13.8% of Supply Points were flagged as vacant, a considerable reduction from 20.4% two years ago.

Whilst the position has improved greatly, Scottish Water continues to have concerns about the proportion of Supply Points flagged as vacant but which are truly occupied as reported vacancy levels continue to be higher than expected in line with market conditions.

Occupancy status changes in 12 months prior to Annual Return data cut	Occupied to Vacant	Vacant to Occupied	Net change in occupied SPIDs
2009	12,586	3,984	-8,602
2010	14,032	12,741	-1,291
2011	19,029	14,974	-4,055
2012	33,191	25,158	-8,033
2013	23,848	31,890	8,042

Forecast data for 2014/15

The number of properties presented in the 2014-15 forecast is consistent with our SR15 Business Plan. The number of measured and unmeasured premises reflects the proportions reported for 2013-14.

Non-household connected properties

The number of connected non-household properties taking water services has decreased by 5,316 to 153,603. Non-household properties taking sewerage services have similarly decreased by 6,032 to 126,748.

Line ref.	Non-household connected properties	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.8	Unmeasured non-household connected properties – water	36,801	31,815	-4,986
A1.9	Measured non-household connected properties - water	122,118	121,788	-330
A1.8 + A1.9	**Total connected non-household connected properties - water**	**158,919**	**153,603**	**-5,316**
A1.19	Unmeasured non-household connected properties – sewerage	34,588	29,205	-5,383
A1.20	Measured non-household connected properties - sewerage	98,192	97,543	-649
A1.19 + A1.20	**Total connected non-household connected properties – sewerage services**	**132,780**	**126,748**	**-6,032**

These decreases are primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties); identified through either the data alignment project or in the operation of business-as-usual processes.

The largest decreases have been observed in unmeasured properties. This is due to properties moving from unmeasured to measured charges and also because deregistrations have tended to be skewed towards unmeasured properties. Properties changed to domestic are more likely to be unmeasured and duplicate Supply Points have been found to be more prevalent for unmeasured properties. These do not have details of a physical asset which can be readily validated and they are not regularly visited for meter reading purposes.

As part of the data alignment project a number of properties were identified which required the unmeasured sewerage service element to be removed at the CMA, this accounts for the larger drop in connected sewerage properties.

Other factors affecting the totals include new connections to the network, the addition of Gap Sites to the market, changes to services recorded at properties and temporary disconnections. Certain types of premises may change their status, namely from Council Tax to business rated and in the reverse direction, for example holiday chalets or houses for short term lettings, leading to some churn in this sector.

Changes to Unmeasured Connected Properties

Removed

	Dereg/ Pdisc	Unmeasured to Measured	Remove Unm Service Element	Other	Total
Water	5,533	1,246	31	2	6,812
Sewerage	4,046	1,185	1,772	4	7,007

Added

	Gap Site/ New Conn	Measured to Unmeasured	Unm Service Element Added	Other	Total
Water	698	454	671	3	1,826
Sewerage	680	376	566	2	1,624

Changes to Measured Connected Properties

Removed

	Dereg/ Pdisc	Measured to Unmeasured	Remove Metered Service Element	Other	Total
Water	1,804	454	139	10	2,407
Sewerage	1,522	376	697	7	2,602

Added

	Gaps & New Conn	Unmeasured to Measured	Metered Service Element Added	Other	Total
Water	620	1,246	203	8	2,077
Sewerage	514	1,185	246	8	1,953

Non-household void properties

The number of void non-household properties taking water services in the table below has been derived by subtracting the reported billed properties from the connected properties. The number of void properties taking water services has decreased by 8,803 in the report year.

As set out above, the 12 months prior to the September 2013 R2 settlement report used to populate this year's Annual Return saw a significant net movement in Supply Points from vacant to occupied. The decrease has been heavily weighted towards unmeasured properties and much of this change relates to the significant number of deregistrations processed over the last year. Deregistered premises included properties changed to domestic, duplicate Supply Points, demolished properties and properties not connected to Scottish Water's network. A high proportion of those properties deregistered under the Data Alignment Project were flagged as vacant at the CMA.

Changes in occupancy status at the CMA over the last year have also resulted in a substantial net movement from vacant to occupied. The main drivers have been the identification of a significant number of properties which were wrongly flagged as vacant through the two Incentive Schemes, along with the resulting improvements in the data maintenance processes of registered Licensed Providers.

There continues to be issues with properties which are flagged as vacant at the CMA by the registered Licensed Provider but which Scottish Water is unable to agree are unoccupied. However, the position is greatly improved compared with previous years.

There has been a corresponding decrease of 8,290 in the number of void properties having sewerage services over the period for the same reasons.

Void properties	2012/13 Annual Return	2013/14 Annual Return	Variance
Unmeasured void properties – water	16,071	9,502	-6,569
Measured void properties – water	13,805	11,571	-2,234
Total void properties – water	**29,876**	**21,073**	**-8,803**
Unmeasured void properties – sewerage	14,991	8,743	-6,248
Measured void properties - sewerage	12,157	10,115	-2,042
Total void properties - sewerage	**27,148**	**18,858**	**-8,290**

Non-Household billed properties and wholesale revenue

As shown in the table below, there has been a small increase in billed properties, since last year's Annual Return, namely 3,487 for water and 2,258 for sewerage. As set out above, this is the net effect of changes in occupancy status and Supply Points processed into settlement from 'New' and 'Partial', offset by de-registration of properties found to be incorrectly in the market (for example duplicates, domestic and demolished properties) and disconnection activity.

Line ref.	Water services – billed	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.3 + A1.4	**Total billed Non-household properties – water**	**129,043**	**132,530**	**3,487**
A1.14 + A1.15	**Total billed Non-household properties - sewerage**	**105,632**	**107,890**	**2,258**

Movement of Properties between Void and Billed

	Void to Billed	Billed to Void
Water	7,301	4,049
Sewerage	6,967	3,767

Household properties (connected and billed)

The data for these lines has been sourced directly from the WIC4 reports of September 2013 for report year. Report year +1 household growth is obtained directly from the final determination.

Outturn Growth

The growth in billed properties (including exempt) was 8,710. The growth in connected properties of 11,629 differs to the growth in billed properties due to an increase in the number of properties categorised as vacant and exempt from charge.

Line ref.		2012/13 Annual Return	2013/14 Annual Return	Variance
A1.1	Unmeasured household billed properties - potable water (including exempt)	2,394,277	2,402,987	8,710
	Number of void properties	47,693	50,612	2,919
A1.6	Unmeasured household connected properties	2,441,970	2,453,599	11,629

A1.1-5 Billed Properties – Water

A1.1 Unmeasured Household Billed Properties

The number of billed and exempt unmeasured household properties is sourced from the WIC4 and has increased by 8,710 as shown below:

Line ref.	Annual return (households)	Report Yr -1	Report Yr	Growth
	Total number of billed properties	2,329,680	2,334,233	4,553
	Number of exempt properties	64,597	68,754	4,157
A1.1	Total billed unmeasured households	2,394,277	2,402,987	8,710

From the above table, the total number of billed properties has increased by 8,710 which is slightly lower than forecasted in AR13. There has been an increase in the number of exempt properties by 4,157 and an increase in the number of void properties by 2,919 which partially accounts for this lower than expected increase in billed properties. The number of exempt properties is expected to remain the same going forward.

As this information is sourced directly from the WIC4 reports, it has a confidence grade of A2 which reflects the quality of this external data.

A1.2 Measured household billed properties

The number of measured households has decreased by 11 customers. This reduction is principally due to customers determining that Council Tax based charging is more economic. The confidence grade of A2 is consistent with previous year. The forecast for 2014-15 is based on the average movement over the last 2 years.

A1.3-4 Unmeasured and Measured non-household billed properties

The recorded number of billed non-household properties has increased by 3,487 to 132,530 compared with the 2012/13 Annual Return.

This movement was due to the combined effect of changes in occupancy status at Supply Points, gap sites and new connections processed into settlement, physical disconnections and de-registrations as set out above. An implication of the reduction in vacant properties is that the uplift in income from introducing charging for vacant properties in 2017 is likely to be lower than was assumed in the Business Plan.

Line ref.	Water services - (connected and billed)	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.3	Unmeasured non-household billed properties – potable water (including exempt)	20,730	22,313	1,583
A1.4	Measured non-household billed properties - potable water	108,313	110,217	1,904
	Total billed Non-household properties	**129,043**	**132,530**	**3,487**

A1.6-11 Connected Properties – Water

A1.6 Unmeasured Household Connected Properties

This figure is the cumulative total of billed properties, exempt properties and void properties which is sourced directly from the WIC4 reports and therefore given a confidence grade of A2. For the current report year, the void property total is 50,612.

A1.7 Measured household connected properties

The number of Measured household connected properties is described in the commentary to line A1.2.

A1.8-9 Unmeasured and Measured non-household connected properties

The recorded number of connected non-household properties receiving water services has decreased by 5,316 to 153,603 compared with the 2012/13 Annual Return. As set out earlier, this is primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties), identified through either the Data Alignment Project or in the operation of business-as-usual processes.

Line ref.	Connected Properties	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.8	Unmeasured non-household connected properties	36,801	31,815	-4,986
A1.9	Measured non-household connected properties	122,118	121,788	-330
	Total connected Non-household properties	**158,919**	**153,603**	**-5,316**

A1.11 Number of properties connected during the report year

The number of properties connected in the report year of 14,580, and is in line with the forecast figure. The number of properties connected in this report year shows a small reduction to the previous year of 243. The forecast for 2013/14 shows a slight reduction as we have seen the volume of connections tail off towards the end of this report year.

The confidence grade of A2 reflects the same systems and processes in place as the previous report year.

A1.12-16 Billed Properties – Foul Sewerage

A1.12 Unmeasured household billed properties

There has been growth of 7,731 unmeasured household billed properties for sewerage in the report year.

The confidence grade remains unchanged at A2.

A1.13 Measured household billed properties

A decrease of 2 measured household properties is directly linked to the reduction in Measured Household properties having a measured water service.

The confidence grade of A2 has not altered.

A1.14-15 Unmeasured and Measured non-household billed properties

The recorded number of billed non-household properties receiving sewerage services has increased by 2,258 to 107,890 compared with the 2012/13 Annual Return. This movement was due to the combined effect of changes in occupancy status at Supply Points, gap sites and new connections processed into settlement, physical disconnections and de-registrations as set out above.

Line ref.	Billed Properties	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.14	Unmeasured non-household billed properties – sewerage	19,597	20,462	865
A1.15	Measured non-household billed properties – sewerage	86,035	87,428	1,393
	Total billed Non-household properties	**105,632**	**107,890**	**2,258**

A1.17-22 Connected Properties – Foul Sewerage

A1.17 Unmeasured Household Connected Properties

Please refer to the commentary for line A1.6. For the current report year, the void property total is 48,817. The number of voids is calculated by subtracting A1.12 from line A1.17.

A1.18 Measured Household Connected Properties

Please refer to the commentary for line A1.13.

The confidence grade of A2 has not altered.

A1.19-20 Unmeasured and Measured Non-household connected properties

The recorded number of connected non-household properties taking sewerage services has decreased by 6,032 to 126,748 compared with the 2012/13 Annual Return. As set out earlier, this is primarily due to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties); identified through either the data alignment project or in the operation of business-as-usual processes, and the removal of the unmeasured sewerage service element from a group of Supply Points identified by the data alignment project.

Line ref.	Connected Properties	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.19	Unmeasured non-household connected properties	34,588	29,205	-5,383
A1.20	Measured non-household connected properties	98,192	97,543	-649
	Total connected Non-household properties	**132,780**	**126,748**	**-6,032**

A1.22 Number of properties connected during the report year

New properties connected have remained at a similar level at 13,614, a reduction of 172, a description is provided in the commentary to A1.11.

A1.23-29 Billed Properties – Surface Drainage

A1.23 Unmeasured Household Billed Properties (including exempts) not billed for Property Drainage

There are zero unmeasured billed properties not billed for property drainage.

A1.25-26 Measured and Unmeasured Billed Properties not billed for Property Drainage

There has been an increase in properties not billed for Property Drainage since 2012/13.

This is the result of the removal of Property Drainage charges at some properties, offset by changes to occupancy status and deregistrations. A substantial increase in requests to verify property drainage services has been observed in the last year and some of the movement shown below has arisen from such requests where a property is found not to drain to the public sewer. The data alignment project has also impacted this value; the Licensed Provider's customer billing data relating to Roads and Property Drainage services was used to update the values held in the Central Systems. At the time of the data changes, this was a Licensed Provider-owned data item.

Line ref.	Properties not billed for Property Drainage	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.25	Unmeasured non-household billed properties not billed for property drainage	701	1,252	551
A1.26	Measured non-household billed properties not billed for property drainage	1,318	1,758	440
	Total billed Non-household properties	**2,019**	**3,010**	**991**

A1.27 Household Billed Properties billed for Surface Drainage only

There are zero unmeasured billed properties not billed for surface drainage.

A1.28 Non-household properties billed for surface drainage only

The number of non-household properties billed for surface drainage only has increased by 1,452 to 12,389 since 2012/13. This movement is due to the net effect of changes in occupancy status at Supply Points, removal of the unmeasured sewerage service element from a group of Supply Points identified by the data alignment project and gap site and new connection Supply Points processed into settlement from a state of 'New' or 'Partial'.

A1.31 Measured Household connected Properties

This line shows a drop in billed customers from 429 to 426.

A1.32-33 Non-household Connected Properties – Surface Drainage

The recorded number of connected non-household properties connected for surface drainage has decreased by 3,113 to 141,730 compared with the 2012/13 Annual Return. As set out earlier, this is relates to the deregistration of properties found to be incorrectly in the market (generally duplicates, domestic and demolished properties); changes to Property Drainage data at the CMA due to the Data Alignment Project or following a request to verify the services; and gap site and new connection Supply Points processed into settlement.

Line ref.	Properties connected for Surface Drainage	2012/13 Annual Return	2013/14 Annual Return	Variance
A1.32	Unmeasured non-household connected properties	50,390	48,012	-2,378
A1.33	Measured non-household connected properties	94,453	93,718	-735
	Total connected Non-household properties	**144,843**	**141,730**	**-3,113**

A1.35 Number of properties connected during the report year

New properties connected have remained at a similar level at 13,614, a reduction of 172, a description is provided in the commentary to A1.11.

The confidence grade remains at A2.

A1.36-39 Trade Effluent

A1.36 Number of Billed Properties

The number of billed properties has reduced from 1,361 reported in AR13 to 1,348. The reduction in billed DPIDs is a combination of Scottish Water moving smaller discharges onto Letters of Authorisation and there being more closures than new premises opening in the reporting period.

The forecast number of billed properties is 1,322. This is the number of properties that existed at P06 that were also billed at P012.

The confidence grade for the report period and forecast is A2 and A3 respectively.

A1.37 Connected Properties

The number of billed and connected properties has increased from 2,835 to 2,924. Whilst this is at variance with the reduction in the number of billed properties, it reflects the fact that Scottish Water continues to issue an increasing proportion of "Letters of Authorisation" to small dischargers, rather than full consents.

The forecast number of billed and connected properties is 2,919.

Note, these figures are not affected by the inappropriate disconnection of SPIDs as the number is sourced from Scottish Water's trade effluent system ICMS, which holds up to date information on all discharge points, regardless of whether they are billable or not.

The confidence grade for the current and forecast years remains at A2 and A3 respectively.

A1.38 Trade Effluent load receiving secondary treatment

The total BOD load receiving secondary treatment reported has increased from 18,648 to 21,234T/yr.

The confidence grade remains at B2 and B4 for the current and forecast years, as calculation of volumes is now done by LPs and not SW.

A1.39 Trade Effluent load receiving secondary treatment

The reported total COD load receiving secondary treatment has increased from 39,457 to 44,025T/yr.

The confidence grade is B2 for the current and B4 for forecast year. This is primarily due to the change in volume calculation method and the need for the system to updated with meter readings by LPs in order for the volume calculations to be correct.

Table A2 Population, Volumes and Loads (Water)

A2.1 Population Water & Wastewater – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. There is an increase in winter population of 18,774 compared against the 2013 Annual Return reported position. Populations are derived from the published GROS 2008 based population projections.

A2.2 Population Water – Summer

To determine the increment of the summer population (above the winter population), a data set from Yell.com was used to identify properties which offer accommodation to visitors and to which was applied the average bed space supplied by Visit Scotland. In this way, a derived number for summer visitors of 143,297 was reached. The increase in visitors compared with Report Year -1 is a result of an increased number of properties identified in Yell.com offering accommodation to visitors.

No change in the confidence grade has occurred in the year.

A2.3 Population of unmeasured household properties

The population of unmeasured household properties connected to our networks has increased by 18,471 for water, reflecting an increase in the total population and a proportion of households with water.

The confidence grade remains the same at A2.

A2.4 Population of measured household properties

The population of measured household properties taking water services has decreased by 29, reflecting the decrease by 11 in the number of measured household properties reported in line A1.2.

The confidence grade remains the same at A2.

A2.6 - 7 Water treated at own works to own customers & Distribution input treated water

These are both reported identically because Scottish Water does not supply treated water to any party other than direct customers of Scottish Water through the water distribution networks.

Distribution Input (DI) has reduced from 1,840.0 Ml/d in AR13 to 1823.8 Ml/d in AR14, principally due to reduced total leakage and reduction in water delivered to non-household properties.

DI is being reported with a B2 confidence grade maintained from AR13.

A2.8 & A2.9 Bulk supply imports/exports

There are no bulk supply imports or bulk supply exports so these are again reported as 0 Ml/d with a confidence grade of N.

A2.10 Net Distribution input treated water (water put into supply)

The net DI is the same as the DI (line A2.7) as there are no bulk supply imports or exports.

A2.11 Unmeasured household volume of water delivered (including losses)

The unmeasured household volume of water delivered has increased from 810.2 Ml/d to 841.4 Ml/d. This has resulted from an increase in Per Capita Consumption (PCC) of *circa* 1.2 l/head/day (line A2.27), from an increase in the estimated rate of supply pipe losses per property. The confidence grade for this line remains at B2, reflecting the continued confidence associated with the SW unmeasured household volume calculated using data reported from Scottish Water's Continuous Area Per Household Consumption (PHC) Monitor.

A2.12 Measured household volume of water delivered (including losses)

The measured household volume of water delivered has increased by 0.04Ml/d compared to the previous year. The percentage of meter under-registration has remained at 4.1%, taken as a mean from the 2007/08, 2008/09 and 2009/10 supporting information documents for the OFWAT Service and Delivery report.

The confidence grade reported for this line remains at B2.

A2.13 & 14 Unmeasured & Measured non-household volume of water delivered (including Losses)

The calculation of non-household consumption follows the same method as used for the 2012/13 Annual Return. Consumption data calculated by the Central Market Agency (CMA) has been used to populate lines A2.13 and A2.14. This means that the same data mart has been used as the basis for both consumption and revenue calculations.

For each settlement run, the CMA provides an aggregated settlement report which is used by Scottish Water for billing purposes, and a disaggregated settlement report to enable reconciliation of wholesale charges by market participants. The data reported in lines A2.13 and A2.14 has been derived from these disaggregated settlement reports.

Table A2 has been populated using the latest available data at the time of reporting. For April to July 2013 inclusive, the R3 report has been used; for August 2013 to January 2014 the R2 report has been used; and for February and March 2014, the R1 report have been used.

A2.13 Unmeasured Non-Household Consumption

The reported unmeasured non-household volume of water delivered has decreased from 20.8 Ml/d to 20.1 Ml/d in the report year.

The consumption in line A2.13 relates to Supply Points which are unmetered and reflects assessed consumption derived from the Ratable Value.

Whilst the number of reported unmeasured properties in lines A1.3 and A1.8 which are used to populate the property counts below have decreased by 4986 properties compared with AR13, this decrease has mainly been due to vacant properties decreasing.

	AR10	AR11	AR12	AR13	AR14
Occupied and exempt properties	46,957	47,451	20,216	20,730	22,313
Consumption (Ml/d)	14.42	14.80	19.13	19.70	18.99
Underground supply pipe leakage l/prop/d	34.39	29.67	29.71	24.57	32.12
Underground supply pipe leakage (Ml/d)	1.61	1.41	0.60	0.51	0.72
Water delivered (Ml/d)	**16.03**	**16.21**	**19.73**	**20.2**	**19.7**
Void properties (vacant)	27,239	18,282	12,272	16,071	9,502
Internal plumbing losses (voids) l/prop/d	11.40	11.05	10.68	10.18	9.52
Underground supply pipe leakage (voids) l/prop/d	39.72	34.94	34.23	28.31	37.01
Internal plumbing losses (voids) (Ml/d)	0.31	0.20	0.13	0.16	0.09
Underground supply pipe leakage (voids) (Ml/d)	1.08	0.64	0.42	0.45	0.35
Water delivered to void (vacant) properties (Ml/d)	**1.39**	**0.84**	**0.55**	**0.62**	**0.44**
Total line A2.13 unmeasured non-household volume (Ml/d)	**17.42**	**17.05**	**20.28**	**20.83**	**20.15**

A2.14 Measured Non-Household Consumption

The consumption in line A2.14 reflects the actual consumption recorded at metered Supply Points plus an element for meter under registration (line A2.30). The metered volume has decreased from 380.82 Ml/d to 372.41 Ml/d in the current reporting year; the total water delivered for AR14 being 390.12 Ml/d compared with 398.94 Ml/d in AR13.

Derivation of Consumption from CMA Settlement Reports

Volumetric wholesale charges are applied at the CMA via the calculation of an Estimated Weighted Average (EWA) unit rate for each Supply Point at each settlement run. This is replaced with an Actual Weighted Average unit rate at Final Reconciliation.

In certain circumstances, generally as a result of issues with a meter reading or technical data, negative consumption can be calculated at meters. A related issue is the calculation of a EWA value of zero in certain circumstances relating to large negative historical consumption.

Consumption has been included in the A tables wherever it is a positive value at a Supply Point which is occupied. Where the calculated consumption is negative, this is substituted with an estimated consumption using the same methodology as is applied by the CMA in the absence of meter readings at a Supply Point. In the first instance, the Licensed Provider's Yearly Volume Estimate (YVE) is used if available. In the absence of an YVE value, the industry standard consumption for that meter size is used.

The A tables report consumption at occupied properties only, with the exception of the adjustment described below which is applied in relation to estimated consumption at properties wrongly flagged as vacant at the CMA.

Other Adjustments to Billed Consumption

A number of additional adjustments are also applied to convert billed consumption into delivered potable water.

There are a number of non-household customers receiving non-potable supplies. Consumption at these Supply Points is reported separately in line A2.26 and is therefore excluded from line A2.14.

The supply of shipping water at Queen's Dock in Aberdeen is not supplied via a Licensed Provider and not included in the CMA's settlement reports. The water supplied is potable and is therefore included in line A2.14.

Additional adjustments have been made at a small number of Supply Points where erroneous consumption has been identified, usually due to either a faulty meter or spurious meter readings. In both cases, the adjustment reflects the expected consumption following correction of the issue, which will include amendment of data at the CMA and - in some cases - repair or replacement of the meter. These adjustments are consistent with provisions and accruals made for revenue forecasting purposes.

A2.15 Water taken unbilled – legally

The volume reported as water taken legally unbilled (WTLU) has decreased from 54.4 Ml/d in 2012/13 to 48.4 Ml/d in this report year. The confidence grading remains at C4 due to the nature and estimation of the volume reported. The methodology has remained the same for the majority of components. The main reasons for the changes in volumes are as follows:

- Decrease in fire service use (from 9.9 Ml/d to 8.5 Ml/d); same methodology as AR13, the reduced volume this year is because of a reduction in the number of reported fires in Scotland.
- Decrease in licensed standpipe use (from 18.0 Ml/d to 12.80 Ml/d); there has been an decrease in the number of standpipe licences issued which has decreased the total volume associated with this component.
- Slight decrease in WWTW from 12.4 Ml/d to 12.2 Ml/d; there has been a minor change to the methodology used. On the back of discussions with WWTW operators it was agreed that treatment type does not affect the volume used and as such the method was simplified.
- No significant change in Scottish Water Offices and Depots use of 0.01 Ml/d; the same methodology has been used as last year.
- There has been a small increase in Scottish Water jetting volumes from 1.19 Ml/d to 1.24 Ml/d this is due to an increase in the number of events that required having chokes cleared by jetting.
- No movement in unbilled field trough usage, the same method has been used as last year
- No significant change in water used for temporary building connections; the same method has been used as last year.
- Unbilled water use by non-household users has increased from 0.04 Ml/d to 0.73 M/ld. This increase is a result of fire mains usage that has been found this year.

A2.16 Water taken unbilled – illegally

The volume of water reported as water taken illegally unbilled (WTIU) has increased slightly to 1.5 Ml/d compared with 1.4 Mld in AR13.

The confidence grade has remained at C4 due to the nature and estimation of the volume reported. The data sources and methodology used to calculate this component have remained the same.

- Void property use – the volume has increased slightly from 0.7 Mld to 0.8Ml/d
- Hydrant misuse - the volume has remained unchanged at 0.4Ml/d.
- Illegal standpipes - the volume has decreased from 0.2 Ml/d to 0.3 Ml/d due to an increase in the number of illegal standpipes reported.

A2.17 Water taken unbilled – Distribution System Operational Use (DSOU)

The volume of water reported as distribution system operational use (DSOU) has decreased from 5.4 Ml/d in 2012/13 to 4.0 Ml/d in this reporting year. The confidence grade remains at C3 due to the nature and estimation of the volume reported. The changes in volumes can be explained as follows:

- Service Reservoir Cleaning – the volume has decreased from 0.8 Ml/d to 0.7 Ml/d. The methodology used is the same as the previous year. The list of service reservoirs cleaned and the volume of water discharged continues to be provided by the regional Leakage Delivery teams.
- Mains Rehabilitation & New Mains - the volume used has remained at 0.1 Ml/d;
- Proactive Flushing & Swabbing - the volume of water has decreased from 3.6 Ml/d to 2.4 Ml/d in this reporting year; the methodology is the same as the previous year. .
- Burst Repairs / Other Network Interruptions – the methodology applied is the same as the previous year; the volume has remained steady at 0.4 Ml/d.

- Reactive Water Quality Incidents – the volume remained steady at 0.4 Ml/d. The methodology applied is the same as the previous year.
- Planned Water Quality Sampling – the volume reported remains constant at 0.1 Ml/d; there has been no change in methodology.

A2.18 Net Consumption (including supply pipe losses)

Net consumption has increased from 1,291.3 Ml/d to 1,305.7 Ml/d, and the confidence grade remains at B3. The increase in volume is mainly due to the increased volume of line A2.11 (water delivered to unmeasured households), although it is offset by decreases in lines A2.14 Measured non-household volume of water delivered (inc losses), A2.15 Water taken unbilled-legally and A2.17 (Distribution System Operational Use).

A2.19 Distribution losses (including trunk mains and reservoirs)

Distribution losses have reduced from 548.6 Ml/d in AR13 to 518.0 Ml/d in AR14 due to continuing leakage reduction activity.

The confidence grade for this line remains B3.

A2.20 Customer supply pipe losses

Customer supply pipe losses have increased in year from 68.5 Ml/d to 89.8 Ml/d in AR14. The methodology this year remains the same as in AR13 although an assumption change (using an AR14 Scottish Water specific Supply pipe flow rate) has contributed to the increased volume. A data improvement has also contributed to the increased reported volume.

A2.21 Overall water balance

The confidence grade for the overall water balance remains at B3 as there have been no significant changes in methodology compared to the previous year.

A2.22 Total Leakage (pre-MLE Adjustment)

The 'Total Leakage' by definition within the guidance documentation is considered by SW to include summing the DMA reported leakage, Service Reservoir leakage and Trunk Main leakage. The coverage of reportable DMAs has decreased from 90.5% of properties in AR13 to 89.8% in AR14. DMA leakage has reduced from 518.7 Ml/d in AR13 to 497.3 Ml/d in the current reporting year. Service Reservoir leakage has remained at 8.9 Ml/d. Trunk Main leakage has increased from 33.8 Ml/d to 46.6 Ml/d in AR14, this increase was due to a data improvement project undertaken during AR14 which identified additional trunk mains omitted from previous calculations. Overall there is a reduction in total leakage from 561.3 Ml/d in AR13 to 552.7 Mld in AR14. The confidence grade for this line remains at B3.

A2.23 Water Balance Closing Error

The Water Balance Closing Error is the difference between the top down and bottom up leakage figures expressed as a percentage of net DI. The closing error has remained constant at 3.0% for AR14.

A2.24 MLE Adjustment

The MLE adjustment for AR14 is 13.1 Ml/d. The overall AR14 MLE calculation is associated with the appropriate MLE confidence grades (mid point of WICS CGs), being assigned to water balance components in line with WICS own CGs.

The confidence grade for this line is B3.

A2.25 Total Leakage (post-MLE Adjustment)

Where the water balance reconciliation error between top down and bottom up leakage is less than 5% of DI, this is accepted as an indicator of a robust water balance. In such circumstances, a MLE statistical calculation is then undertaken to determine the leakage figure to be reported. If the reconciliation error is >5% of DI, then the top down leakage figure will be reported.

In recent years the trend in leakage reduction is:

Report Year	Top Down Leakage (Ml/d)	Bottom Up Leakage (Ml/d)	MLE Leakage (Ml/d)
AR06	1,104		
AR07	1,004		
AR08	924		
AR09	868	776	816
AR10	783	705	738
AR11	757	693	699
AR12	661	617	629
AR13	617	561	575
AR14	608	553	566

The AR14 Maximum Likelihood Estimation (MLE) leakage is 565.8 Ml/d and is reported with confidence grade B3. This is a reduction of 9.3 Ml/d from the AR13 MLE leakage figure of 575.2Ml/d.

A2.26 Volume of non-potable water delivered

Eleven non-household customers receive non-potable water supplies. In most cases there is also a separate potable supply to the premises. Several of these Supply Points are subject to Schedule 3 charging arrangements and all but one of the non-potable supplies is metered.

The volume reported in line A2.26 reflects the consumption calculated by the CMA for the metered non-potable supplies in addition to an estimated consumption for the one unmetered supply, Buckieburn Farm and Freshwater Research Unit. The estimated consumption for this supply of 5.55 ML/day is based on the volume measured by the customer at the outlet from the premises to a watercourse. Scottish Water is currently in the process of installing a meter on the raw water supply pipe to the premises which will provide a more accurate measurement of consumption.

A2.27 Per capita consumption (unmeasured h/hold – excl s/pipe leakage)

The PCC figure for AR14 is 150.0 l/head/day, compared with an AR13 reported figure of 148.8 l/head/day.

The confidence grade remains at B2.

A2.28 Per capita consumption (measured h/hold – excl s/pipe leakage)

The calculation remains unchanged from the previous reporting year. There is an increase in volume from 177.2 l/head/day in AR13 to 220.4 l/head/day in AR14.

The confidence grade remains at B3.

A2.29 Meter under-registration (measured households)(included in water delivered)

Scottish Water has derived meter under-registration from the mean value between 2007/08 and 2009/10 from the supporting information document for the OFWAT Service and Delivery Supporting Information Reports and remains at 4.1%. When applied to the domestic metered volume the total measured household meter under-registration is 0.009 Ml/d.

A2.30 Meter under-registration (measured non-households)(included in water delivered)

The 2007/8, 2008/09 and 2009/10 OFWAT 'Service and Delivery' supporting information documents have been used to derive a mean figure for non-household meter under-registration, which remains at 4.7%. The decrease in the meter under-registration volume from 17.8 Ml/d to 17.4 Mld is due to a decrease in the volume of water delivered to measured non-households.

Some meter accuracy tests are currently being undertaken on a sample of meters in order to inform targeting of meter capital replacement. This data will is also likely to improve understanding of meter under-registration figures.

Table A3 Population, Volumes and Loads (Waste water)

A3.1 Population Water & Waste – Winter

Population data is based on General Register Office for Scotland (GROS) population projections for this year. The winter population for waste water has increased by 16,854.

A3.2 Population Waste – Summer

To determine the increment of the summer population (above the winter population), a data set from Yell.com was used to identify properties which offer accommodation to visitors and to which was applied the average bed space supplied by Visit Scotland. A total of 89,708 of the 143,297 water population also appeared in the sewer area. The increase in visitors compared with Report Year -1 is a result of an increased number of properties identified in Yell.com offering accommodation to visitors, being offset by a reduction in the number caravan/campsites with wastewater (caravan/campsite sites have more bed spaces compared to other tourist property types).

The confidence grade remains the same at B2.

A3.3 Household Population connected to the wastewater service

The population of unmeasured household properties connected to our networks has increased by 16,591 for waste water.

A3.5 Unmeasured household volume (including exempt)

The unmeasured household volume has increased from 679.26 Ml/d to 686.96 Ml/d. The increase in the waste volume is a result of both the increase population and the increase in pcc reported in the year.

The confidence grade has remained at B3.

A3.6 Measured household volume

The measured household volume has reduced to 0.024 Ml/d in the report year. The number of households with a sewage service has remained stable compared with last year which means that these households have simply reduced their volumes.

The confidence grade remains at A2.

A3.7 Unmeasured non-household foul volume (including exempt)

There is a marked decrease in unmeasured non-household foul volume (21.4 Ml/d to 17.8 Ml/d) as a result of a number of properties de-registered from the market as part of a data project. There is a corresponding decrease in connected properties shown in A1.19 however billed properties have increased. The increase in billed properties is expected to be the result of properties being reported mid-year and de-registrations of billed properties happening later in the year.

The confidence grade remains at B3 as volumes are based on an estimate derived from the use of actual data from the installed FBM meters.

A3.8 Measured non-household foul volume

The total volume of foul waste from measured non-households has also decreased following a similar pattern to A3.7. The decrease is from 139.7 Ml/d to 136.9 Ml/d.

The confidence grade remains at B3.

A3.9 Trade Effluent Volume

The volume of trade effluent discharged has decreased from 85.909Ml/d to 80.596Ml/d. This figure is the volume associated with the DPIDs billed at P06. Scottish Water is no longer in control of the calculation of volumes as this is now done by CMA from April 2013. . Volumes reported this year are taken from the latest available reconciliation run from the CMA for the reporting period. For DPIDs which haven't been billed by the CMA we have used in order of preference, volumes submitted by the LP for the DPID for the reporting period (the CMA system accepts these volumes even though the DPID doesn't appear on reconciliation runs), or the process for calculating the Annual volume estimate sent to the CMA when the DPID is initially set up, which is 200 times the Consented daily volume.

The forecast is for this to fall to 80.466Ml/d. This is attributable to closures and pro-rating of the current year's volume.

The confidence grade remains at B2 and B4 for the forecast year, as calculation of volumes has just started to be done by CMA.

A3.10 Total Volume

The confidence grade remains at B3.

A3.11 Volume septic tank waste

The volume of septic tank waste is consistent with previous years, with a slight decrease from 31.094Ml to 29.930Ml over the reporting period.

As there has been no change to the methodology used the A3 confidence grade is unchanged from last year.

A3.12-A3.26 Sewage Load (BOD/yr)

The household load reported is based on household occupancy multiplied by 60g per head per day in line with E table guidance.

The slight increase in unmeasured household load is a result of an increase in household population.

The measured household load has remained stable in line with the number of measured households reported in table A1.

There has been no change in methodology therefore the confidence grade remains the same.

A3.14-A3.15 Unmeasured and measured non-household load

The non-household load is derived as 300g/m^3 applied to the volumes of sewage reported in lines A3.7 and A3.8.

There has been no change in methodology therefore the confidence grade remains the same

A3.16 Trade effluent load

The total BOD load discharged to the network has increased from 20,449t to 22,581t.

The forecast figure is 22,542.

The confidence grade remains at B2 and B4 for the forecast year, as calculation of volumes has just started to be done by CMA.

A3.18-A3.21 Septic tank loads

An increase from 108.228t to 117.888t is reported in line A3.18. This illustrates a slight increase in the number of private tanks being emptied. These tanks were larger thus reflecting the increased volume compared to 2012/13. (224 more private septic tanks representing 1.47% increase over the previous reporting period)

The reported septic tank loads (lines A3.18 and A3.19) are derived by applying an assumed load of 6,543g/m^3 to the volumes removed from private and public septic tanks respectively.

In addition there has been an increase in A3.20 other tanker load reporting line. This is due to growth in the waste management 3rd party business by Scottish Water`s commercial arm generating business for disposal of liquids, effluents and organic wastes which are discharged into Scottish Water`s waste treatment facilities. By far the most significant make up of these disposals is landfill leachate, effluent treatment plant wastes and commercial septic tanks. The facilities at Shieldhall, Perth, Kinneil Kerse and Lerwick (Shetland) receive the majority of these disposals.

No significant change in the process has occurred and the confidence grades remain the same as the prior year.

A3.22 Average COD concentration

The average settled COD concentration used to calculate Trade Effluent charges continues to be 350mg/l.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.23 Average suspended solids concentration

The average suspended solids concentration used to calculate Trade Effluent charges continues to be 250mg/l.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.24 Equivalent population served (resident)

The figure in A3.24 is the total load divided by 60g, which equates to the equivalent population and has not significantly changed from the prior year.

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.25 Equivalent population served (resident) (numerical consents)

The figure in A3.25 is the total load divided by 60g which equates to the equivalent population (representing works that have a numerical consent).

No significant change has occurred and the confidence grade remains the same as the prior year.

A3.26 Total load receiving treatment through PPP treatment works

In the report year a reduction from 66,241t to 65,291t was observed which is the result of reduced population equivalents for non-domestic and trade effluent sites receiving treatment through PPP treatment works**.**

There has been no change in methodology therefore the confidence grade remains the same.

A3.27-A3.29 Sewage Sludge Treatment and Disposal

The reported mass of waste water treatment sludge recycled was 125.147ttds, of which the majority came from the PPP/PFI works 105.287ttds. As with AR10 all the SW figures reported were taken direct from the Gemini system. As in previous years we have retained the existing confidence grade.

For the SW sludge an overall decrease in the volume of enhanced treated sludge was noted 2.34ttds. This was mainly due slight decreases at Perth, Dunfermline and Kinneil Kerse during the reporting period.

Conventional sludge production showed a very small increase by 1.035 ttds from the previous year. This is mainly attributable to both Galashiels and Hawick being fully operational following capital enhancement at both these assets.

E Tables – Operating Costs and Efficiency

General Comments

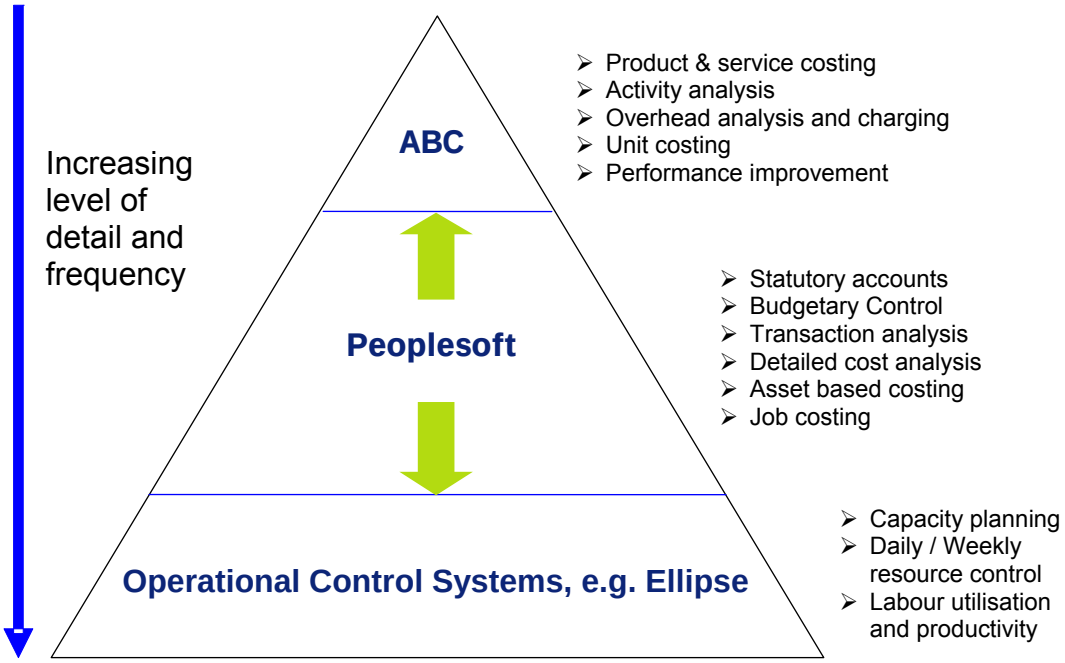
Methodology & Cost Allocation

Cost analysis in E Tables (E4, 6-10) was prepared using reports from Scottish Water's Activity Based Management (ABM) systems.

ABM provides analysis of the costs of key activities and processes, and links these to the factors that cause or drive our level of cost. This allows us to develop an understanding of the full cost of providing services.

Scottish Water has built an ABM toolkit founded upon consistent principles which apply across some key core systems and processes.

Activity Based Management data (financial and non financial) is captured in various corporate systems. The key systems which provide ABM analysis for E Tables are:

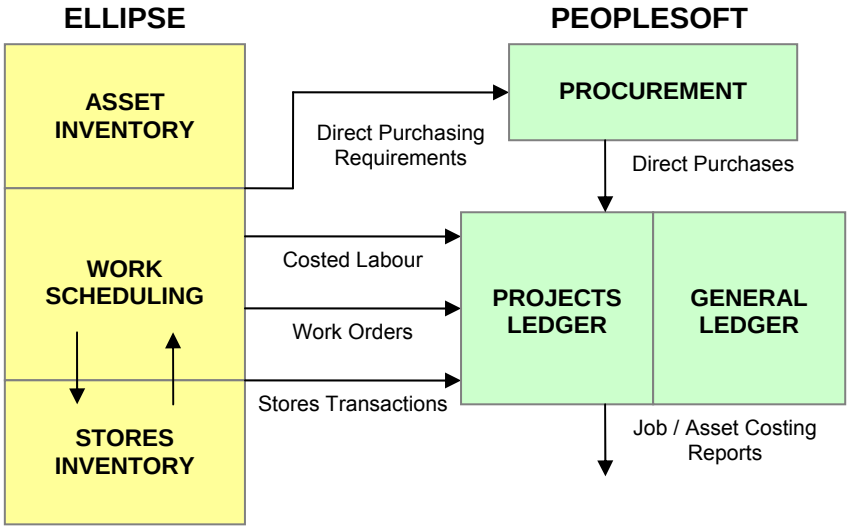


System	ABM Process Overview
Ellipse Works & Asset Management System	Ellipse is used to hold Scottish Water's Asset Inventory and to manage operational activity by individual job (work order), activity and asset. Time spent working on work orders is captured in Ellipse via timesheets, integrated mobile devices or laptops. Material issued to jobs from Stock is also captured by work order. Time and materials are then costed and interfaced to the Peoplesoft Financial System on a daily basis. See Overview diagram below.

Peoplesoft Financial & Procurement System	Peoplesoft is Scottish Water's primary financial and procurement system. The key modules utilised by Scottish Water are Procurement, Accounts payable, Projects, Timesheets, Billing, Accounts Receivable, General Ledger & Fixed Assets. Accounting separation within the Scottish Water group of companies has been enabled within Peoplesoft. Business Units are the highest level entity in Peoplesoft and are used to securely separate data and access to data and processes. Separate Business Units have been used to separate Scottish Water Horizons from Scottish Water, and in turn from Scottish Water Solutions. Cross-business unit transactions can only be made via inter-company invoicing. Within Scottish Water capture of activity based information within Peoplesoft has been maximised through the set up of our coding structure, systems and processes. Cost codes have been set up within Peoplesoft to capture and sub-analyse costs by: o Individual work order; o Individual asset; o Each capital or non regulated project; o Each support department; and o Expense subjective (account). All costs are held in Peoplesoft, and costed either directly through Peoplesoft Procurement or operational costing through the Ellipse-Peoplesoft interface. Peoplesoft, therefore, provides comprehensive costing analysis, on a monthly basis, of the costs directly attributable (including some key support activity recharges) to each team, asset, zone, project, service and job.
Hyperion Activity Based Costing (ABC) System	Hyperion Profitability and Cost Management (HPCM) is an ABC system structured around Scottish Water's key (c.250) activities. ABC is run periodically (typically annually) to cover all profit and loss expenditure. Peoplesoft feeds total expenditure directly into Hyperion. Where activity splits have already been captured, e.g. Ellipse effort by activity / asset, these are also fed directly into Hyperion. Costs are analysed by activity and for each activity a non financial driver is captured. The non financial driver is the measurable factor which drives activity cost, or the level of resource consumption. In Hyperion these drivers are used to allocate costs to services.

	Output from Hyperion provides analysis of the full cost of services. These services have been structured to match E & M Table activity classifications, and therefore Hyperion output directly feeds these tables. Non financial driver data is collected from a variety of corporate systems and input to Hyperion.
Driver Data Systems	Examples of systems and drivers are: o LIMS – Lab tests processed and samples taken; o Oracle CRM – Customer calls and written contacts; o Gemini – Waste movements; o Ellipse – Number of jobs, man hours, stores issues, etc; and o Peoplesoft – Number of invoices, purchase orders, customer bills, man hours.

Ellipse / Peoplesoft Integration



Cost Allocation

Consistent with prior years, costs are captured, or allocated, in line with Regulatory Accounting Rules including modifications, agreed with the Commission, to reflect the Scottish retail market. Going forward it may be appropriate to update the Regulatory Accounting Rules to reflect these agreements.

Transfers between Separate Entity Associates

Transfers between our separate legal entities are invoiced in accordance with specified Service Agreement prices or Contracts. The prices in these agreements are in accordance with Regulatory Accounting Rules on Transfer Pricing, and prices reflect the full cost of providing the service to the entity. Activity Based Management output has been used extensively in determining the costs which should be included in transfer prices.

Transfers to Non Regulated Activities

Scottish Water Horizons Limited (SWH) along with Scottish Water International (SWI) are responsible for the majority of the Scottish Water Group's Non Regulated activities. Transfers to Non Regulated activities are undertaken as described in the section above "Transfers between Separate Entity Associates".

A residual number of Non Regulated activities remain within Scottish Water. These are activities which are incidental or integral to the regulated business activities. For example, rechargeable works on core assets, and use of laboratory services for third party sampling and analysis.

Within Scottish Water, Non Regulated activity is separately reported in a Non Regulated ledger tree within Peoplesoft. Non regulated costs are either directly captured and reported in the Non Regulated ledger tree, or are charged to Non Regulated through cost recharges.

Operational Staff working on Non Regulated activities, e.g. rechargeable works, charge costs to Non Regulated through Ellipse work orders as described in the methodology section.

Support cost recharges for Fleet, IT and Property are transferred on a regular basis, to reflect actual consumption of support costs. A further cost recharge is made on top of this, to cover areas, which are not regularly recharged. These recharges are made on the basis of ABC analysis.

Capitalisation Policy

Scottish Water has applied a consistent policy to capitalisation and ensures compliance with UK Generally Accepted Accounting Practices (UKGAAP). The main points of the policy are:

Fixed assets are tangible items for the delivery of services and the provision of support activities. Assets are utilised by Scottish Water for a number of years and are not for resale.

Tangible fixed assets have physical substance and are held for use in the production or supply of goods and services. Capital assets are expected to generate future revenue for the company or are used in the business and are not for resale.

Tangible fixed assets, whether purchased or constructed, are recorded at cost. Cost comprises all directly attributable costs, including internal costs, such as the cost of time spent on the construction of the asset by project engineers/ planners, which are incremental to the delivery of the Scottish Water capital expenditure programme.
Costs associated with a start-up or commissioning period are capitalised but *only* where the asset is available for use but *incapable* of operating at normal levels without such a period of commissioning. Costs associated with operating assets which are running at below normal operating levels after start-up/ commissioning are not capitalised.

The capitalisation policy provides guidance notes and examples on distinguishing between operational and capital expenditure.

Reactive Capital Expenditure

In general terms, infrastructure reactive activities can be capitalised where there is replacement of discrete lengths of mains or sewers, usually no less than 3 metres. The work must represent a permanent solution to a fault or deficiency in the network. Costs associated with clearing blockages or the use of a collar on a burst main are not capitalised but are charged to opex.

Reactive non infrastructure capital expenditure includes the replacement of an asset at the end of its useful life such as pumps, filters, screen. In addition, costs associated with a complete asset overhaul, the results of which extend the asset life for a number of years, can be capitalised under either reactive or planned capital expenditure. Expenditure relating to the repair or replacement of a component of an asset, e.g. the replacement of a bearing, are not capitalised but charged to opex.

Expenditure on Leakage

Expenditure on leakage is predominantly allocated to operational expenditure since much of the activity relates to either operational intervention or investigative work. However, the replacement of discrete lengths of mains, usually no less than 3 metres, installation of valves and meters are capitalised.

Wholesale Cost Allocation by WICS Activity

Scottish Water's coding structure follows Regulatory Activity classifications, i.e. Water Treatment, Water Distribution, etc. by individual asset.

The majority of operational costs are directly captured against the individual assets, either by direct charging, e.g. Power, Chemicals, or through Ellipse work orders as described in the Methodology section, e.g. labour costs. In 2013/14 83% of costs, directly attributable to wholesale assets, were charged to assets. The shortfall against 100% was due to some gaps in labour costing. These gaps are addressed, for the purposes of regulatory reporting, via activity analysis undertaken with team leaders.

Fleet inventory costs are recharged to teams on a regular basis, and ABC then calculates the fully allocated costs of wholesale activities, including all support activity costs based on actual activity costs and driver volumes.

Trading Results & Reconciliation

Scottish Water Business Stream Limited (Business Stream) is a fully owned subsidiary of Scottish Water Horizons Holdings. Scottish Water produces consolidated accounts incorporating the results of Business Stream. However E & M18 table financials are produced for Scottish Water Regulated and Non Regulated activity, excluding Business Stream.

To aid comparison, the table below summarises Scottish Water consolidated results, Scottish Water company, Scottish Water Horizons and Scottish Water International results.

SW Group Statutory Accounts

		£m	£m
Cost of Sales		742.6	
Admin Expenses		145.4	
SW Group Expenditure			**888.0**
Less	Business Stream		(43.7)
Add	IFRS adjustments		9.5
Total Expenditure (excluding Business Stream and IFRS)			**853.8**
Represented by			
SW Regulated			836.3
SW Non Regulated			2.4
Horizons			13.8
International			1.4

E Tables include the costs of Scottish Water (Regulated) activities only. Tables E1 and E2 have been removed from the Annual Return. However, reconciliation and commentary include reference to equivalent E1 & E2 table results for ease of understanding.

To aid year-on-year comparison M18 W & M18 WW tables include the costs of Scottish Water (Regulated & Non Regulated), Scottish Water Horizons and Scottish Water International activities.

Scottish Water company, Scottish Water Horizons and Scottish Water International combined results are summarised and reconciled below, to E tables and the regulatory account tables M18 (W & WW).

(£m)	SW SWH & SWI*	Diff Board - M18	M18W/WW Tables Total	Diff M18 - E1/2/3a	E Tables Total	Water E1	Waste E2	PPP E3a
Employment	**154.4**							
Other	**227.8**		**378.7**		**362.4**	215.5	146.9	0.0
Opex	**382.2**	**3.5**	**378.7**	**16.3**	**362.4**	**215.5**	**146.9**	**0.0**
PFI	**150.3**	**(3.8)**	**154.1**	**0.0**	**154.1**	0.0	0.0	154.1
IMC	**110.0**	**0.2**	**109.8**	**0.1**	**109.7**	75.8	33.9	0.0
Depreciation	**220.2**		**212.5**		**211.2**	109.3	101.9	0.0
Grant Amortisation	**(1.0)**	**(0.2)**	**(1.0)**	**1.3**	**(0.9)**	(0.7)	(0.2)	0.0
Amort PFI	**2.5**		**0.0**		**0.0**			
Gain on assets	**(10.4)**		**0.0**		**0.0**			
Expenditure	**853.8**	**(0.3)**	**854.1**	**17.6**	**836.5**	**399.9**	**282.5**	**154.1**
Explained by					**Table Ref:**	**[E1.31]**	**[E2.30]**	**[E3a.24 +E3a.26]**
Charges to SWBS for support		0.3						

***** Excludes Business Stream, IFRS & IAS19

The line differences are table presentation differences explained as follows:

- £3.8m difference between our Board report and M18 Tables re PFI costs, is due to transfer of costs from Customer Operations for Intersite Sludge Tankering from Scottish Water wastewater treatment works to PFI works (£2.3m), terminal pumping station costs pumping to PFI works and inlet headworks (£1.0m) and support costs for the PFI team (£0.5m).
- £0.3m of Scottish Water expenditure has been charged to Business Stream under Service Agreements. This cost has been netted off Scottish Water's expenditure in line with group inter-company transaction reporting. However, for the purposes of regulatory reporting this expenditure has been added back to report the full costs of providing these third party services.
- £17.6m Non Regulated expenditure is included in M18 Tables but is excluded from E Tables.

Operating and PFI costs, overall, were in line with expectations. Within this operating costs out-turned £6m higher than in our Business Plan as a result of new costs associated with landfill tax while PFI costs out-turned £5m lower primarily as a result of low flows due to the dry weather.

Where appropriate previous E1 & E2 table line numbers have been included for reference.

Total Operating Costs

Total operating costs (E1.20+E2.19-E1.17-E2.16), increased by £15.9m to £362.4m (as detailed below).

	2013/14	**2012/13**	**Variance**
	£m	£m	£m
Total operating costs – Water	215.485	203.240	(12.245)
Total operating costs – Waste	146.940	143.309	(3.631)
Exceptional costs – Water	0.000	0.000	+0.000
Exceptional costs – Waste	0.000	0.000	+0.000
	362.425	**346.549**	**(15.876)**

Scottish Water's reported regulated operating costs of £365.0m reconcile to the E Table total operating costs of £362.4m as detailed below:

Operating Expenditure		**362.4**
Add	SW Opex allocated to PFI (Table E3a)	3.8
Less	SWBS Support charges	(0.3)
Less	Depreciation in Service Charges to Horizons	(0.9)
Regulated SW Operating Expenditure		**365.0**

Reconciling items (SWBS support costs and Horizons depreciation included in service charges) have increased by £0.2m.

The remaining £15.7m increase in operating costs includes the absorption of the following increases:

- £7.8m impact of inflation (based on average RPI of 2.9%);
- £2.7m new operating costs resulting from capital investment;
- £5.5m resulting from changes to landfill tax;
- £4.6m energy prices; and
- £2.5m costs associated with exceptionally dry weather.

These increases were offset by the following reductions:

- £2.9m restructure costs;
- £0.3m SEPA and WIC costs; and
- £0.7m local authority rates changes.

Underlying, controllable costs have therefore reduced in real terms by £3.5m (1.3%) reflecting improved leakage reduction, more efficient operations, and improved contractor management.

Functional Expenditure

Total functional expenditure (lines E1.10 & E2.09) increased by £12.0m (5.7%) from 2012/13 (as detailed below).

Analysis of functional expenditure –

	2013/14	**2012/13**	**Variance**
	£m	£m	£m
Total functional costs – Water	122.055	113.134	(8.921)
Total functional costs – Waste	101.409	98.348	(3.061)
	223.464	**211.482**	**(11.982)**

Direct employment costs (E1.1 & E2.1) decreased by £0.2m (0.4%) to £61.0m. The main reasons for the decrease was the reclassification of customer contact costs to customer services of £1.9m; partly offset by pay progression increases of £1.1m.

Direct power costs (E1.2 & E2.2) increased by £4.7m (12.0%) to £43.7m. The main reasons for the increase were: increased average unit power prices costing £3.9m; and increased consumption from 446 GWh to 450 GWh (1.1%), costing £0.5m; additional costs resulting from capital investment of £0.5m; reduction in renewable energy credits of £0.3m; and an increase in carbon tax of £0.3m; partly offset by prior year credits of £0.9m.

Hired and contracted costs (E1.3 & E2.3) increased by £7.5m (29.3%) to £33.0m. The main reasons for the increase were: additional charges resulting from water landfill tax changes of £5.5m; costs for repairs to redundant assets of £1.2m; costs of water tankering in support of capital investment of £0.8m; and additional costs resulting from capital investment of £0.4m.

Materials and consumables expenditure (E1.4 & E2.4) increased by £1.2m (8.0%) to £16.4m. The mains reasons for the increase were: increased E&M planned maintenance of £0.4m; costs associated with improving water quality OPA of £0.2m; and additional costs resulting from capital investment of £0.4m.

SEPA costs (E1.5 & E2.5) remained unchanged at £11.4m, with an inflationary increase of 2.0% offset by individual consent changes.

Other direct costs (E1.7 & E2.6) increased by £0.3m (4.0%) to £8.5m, mainly due to tanker hires for dry weather supply issues of £0.5m; partly offset by decrease in insurance claim costs of £0.4m.

General and Support costs (E1.9 & E2.8) decreased by £1.5m (3.0%) to £49.6m. The main decreases were: the reclassification of customer contact support costs to customer services of £1.3m; lower VR and restructuring costs of £2.7m; partly offset by additional IT costs of £2.5m, of which £1.5m resulted from new IT capital investment; and pay progression increases of £0.4m.

Business activities

Total business activities expenditure (E1.14 & E2.13) increased by £7.2m to £46.9m (18.1%) from 2012/13 (as detailed below).

	2013/14	**2012/13**	**Variance**
	£m	£m	£m
Customer services	27.709	20.241	(7.468)
Scientific services	11.582	12.332	+0.750
Other business activities	7.575	7.103	(0.472)
	46.866	**39.676**	**(7.190)**

Customer services costs have increased by £7.5m (36.9%) to £27.7m. The main reasons for the increase were; the reclassification of customer contact costs from functional expenditure of £5.2m; increased customer marketing including major television and radio campaigns of £1.5m; and increases in technology and property business support costs.

Scientific services regulated operating expenditure decreased by £0.8m (6.1%) to £11.6m, mainly due to operational efficiencies.

Other Business Activities costs increased by £0.5m (6.6%) to £7.6m, due mainly to increased risk management costs of £0.5m; partly offset by a decrease in CMA costs of £0.2m; and a decrease in other payments to WICS of £0.1m.

Rates

Local authority rates (E1.15 & E2.14) decreased by £0.6m (1.0%) to £60.2m, due mainly to receipt of prior year rates credits of £2.8m; partly offset by an increase in uniform business rate of 2.8% costing £1.9m.

Doubtful debts

Total regulated doubtful debt costs have decreased by £1.9m (6.9%), as detailed below. Although cash collection levels held up well in 2013/14, we continue to be concerned about the sustainability of this performance on future collection rates, primarily due to the impact of Welfare Reform. The reduction in doubtful debt charge reflects the 2013/14 performance and the level of provision required for doubtful debts going forward.

Third party costs

Third party costs (E1.19 & E2.18) have been allocated between core and non core in accordance with Regulatory Accounting definitions. Core third party services costs decreased by £0.8m (11.5%) as detailed below, mainly due to reduced bad debt costs of £1.0m.

	2013/14	2012/13	Variance
	£m	£m	£m
Core third party services	5.885	6.646	+0.761
	5.885	**6.646**	**+0.761**

Capital maintenance

Capital maintenance costs (E1.30 & E2.29) decreased by £10.8m (3.3%) to £320.0m; mainly due to an increased gain on sale from asset disposal of £8.3m; and a decrease in non-infrastructure depreciation of £2.4m.

Water/Wastewater Split of Costs

The proportion of functional expenditure to water activities has increased to 55% in 2013/14 from 54% in 2012/13, as detailed in the table below.

	2013/14	2013/14	2012/13	2012/13
	£m	%	£m	%
Water	122.055	54.6%	113.134	53.5%
Wastewater	101.409	45.4%	98.348	46.5%
	223.464	100.0%	**211.482**	100.0%

Water functional expenditure increased by £8.9m (7.9%) from 2012/13 to £122.1m. These increases occurred as detailed below:

- £0.4m (1.0%) decrease in employment costs from 2012/13 reflecting the reclassification of customer contact costs as customer services of £1.0m; partly offset by pay progression increase of £0.6m;
- £2.6m (15.2%) increase in power costs is primarily due to increased consumption (3.0%); and higher prices of £2.3m; additional costs resulting from capital investment of £0.1m; reduction in renewable energy credits of £0.3m; and increase in carbon tax of £0.2m; partly offset by prior year credits of £0.4m;
- £7.1m (55.6%) increase in hired and contracted costs is mainly due additional charges resulting from water landfill tax changes of £5.5m; costs for repairs to redundant assets of £0.5m; costs of water tankering in support of capital investment of £0.8m; provision for network intervention activity as a result of contractual arrangements of £0.7m; and additional costs resulting from capital investment of £0.1m;
- £0.7m (6.1%) increase in materials and consumables is due to increased E&M planned maintenance of £0.2m; costs associated with improving water quality OPA of £0.2m; and additional costs resulting from capital investment of £0.3m;
- £0.1m (1.2%) increase in SEPA costs mainly due to inflationary increase of 2.0%;
- £0.4m (7.3%) increase in other direct costs mainly due to tanker hires for dry weather supply issues of £0.5m; partly offset by decrease in insurance claim costs of £0.1m; and
- £1.6m (5.6%) decrease in general and support costs was due to the reclassification of customer contact support costs as customer services of £0.7m; lower VR and restructuring costs of £1.7m; partly offset by an increase in support costs of £0.5m, mainly IT support and statutory property repairs; and pay progression increases of £0.2m.

Wastewater functional expenditure increased by £3.1m (3.1%) from 2012/13 to £101.4m. These increases occurred as detailed below:

- £0.2m (0.5%) increase in employment costs from 2012/13 reflecting the pay progression increase of £0.5m; and more in house choke clearance of £0.5m; partly offset by the reclassification of customer contact costs as customer services of £0.9m;
- £2.1m (9.6%) increase in power costs is primarily due to increased consumption (0.1%) and higher prices of £2.1m; additional costs resulting from capital investment of £0.5m; and increase in carbon tax of £0.1m; partly offset by prior year credits of £0.5m;
- £0.3m (2.7%) increase in hired and contracted costs, due to costs for repairs to redundant assets of £0.7m; additional operating costs as a result of capital investment of £0.4m; changes to sludge disposal routes £0.3m; partly offset by reduction in provision for network intervention activity as a result of contractual arrangements of £1.2m;
- £0.5m (15.4%) increase in materials and consumables is due to increased E&M planned maintenance of £0.3m; and additional costs resulting from capital investment of £0.2m;
- SEPA costs remained stable at £8.6m with the inflationary increase of 2.0% offset by individual consent changes;
- £0.1m (2.9%) decrease in other direct costs due to a decrease in insurance claim costs of £0.3m; and
- General and support costs remained stable at £22.8m with the reclassification of customer contact support costs as customer services of £0.6m; lower VR and restructuring costs of £1.0m; offset by an increase in support costs of £1.8m, mainly IT support and statutory property repairs; and pay progression increases of £0.2m.

Confidence grades on the tables remain consistent with 2012/13.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade.

In order to achieve A1 accuracy, Scottish Water will need to increase the level of direct cost capture further and build in more accurate and tested allocations of cost where direct cost capture does not provide splits by regulatory classification, e.g. single power meter at a dual function asset.

General & Support costs and Operating expenditure are generally allocated to regulatory activities on the basis of underlying activity and cost driver analysis. Accuracy depends primarily on the quality of cost driver data. Most key drivers are of good quality from reliable system sources and therefore A2 confidence grade is appropriate.

The Reactive and Planned Maintenance analysis remains at A3 reflecting the use of ABM, fed directly from Works Management analysis, for this activity analysis.

Capital Maintenance costs are generated directly from the Fixed Asset Register. Confidence grades remain at A2 reflecting the significant proportion of depreciation captured directly by asset. The only element of capital maintenance which requires significant cost allocation is support asset depreciation, e.g. IT, Fleet, Property. Support asset depreciation is allocated to regulatory activities on the basis of underlying activities and cost driver data. IT depreciation forms the majority of support asset depreciation.

Table E3 and E3a PPP project analysis

Table Overview

Table E3 provides details of the 21 PPP wastewater treatment works that are managed under 9 separate PPP Concession agreements.

The following works form part of each scheme:

PPP Scheme	Wastewater Treatment Works *
Highland	Fort William, Inverness
Tay	Hatton
Aberdeen	Fraserburgh, Peterhead, Nigg, Persley
Moray Coast	Lossiemouth, Buckie, Banff/Macduff
AVSE	Seafield, Newbridge, East Calder, Blackburn, Whitburn
Levenmouth	Levenmouth
Dalmuir	Dalmuir
Daldowie	Daldowie sludge treatment centre
MSI	Meadowhead, Stevenston, Inverclyde

* Daldowie is a sludge treatment centre only.

TABLE E3

E3.0-3 Project data
E3.1 Annual average resident connected population

The annual average resident connected population increased by 5,956 to 2,132,477.
This reflects the increase in the general population reported in Table E7.1. The confidence grade remains at B3.

E3.2 Annual average non-resident connected population

The annual average non-resident connected population decreased by 1,949 to 23,348.

The confidence grade remains at B3 which is unchanged from the Annual Return last year.

E3.3 Population equivalent of total load received

The population equivalent of total load received decreased by 35,125 to 2,981,329.
This drop is due to a reduction in the trade effluent load and non-domestic load reported as being received at these WWTW.

The population equivalent of total load received consists of the following constituents:

- Population
- Tourist
- Non-domestic load
- Trade effluent
- Imported private septic tanks
- Imported public septic tanks
- Imported other loads
- Imported WWTW sludge
- Imported WTW sludge
- Sludge return liquors

Population (71.53% of total load)
The population load increased by 5,956 p.e.

Tourist (0.78% of total load)
The tourist load decreased by 1,949 p.e.

Non-domestic load (13.31% of total load)
The non-domestic load decreased by 16,840 p.e.

Trade effluent (13.95% of total load)
The trade effluent load decreased by 25,335 p.e. Due to the opening of the retail market to competition in April 2008, the source of this data is now the Central Marketing Agency.

Imported private septic tanks (0.03% of total load)
The imported private septic tanks load increased by 275 p.e.

Imported public septic tanks (<0.01% of total load)
The imported public septic tanks load decreased by 47 p.e.

Imported other (<0.01% of total load)
Imported other loads decreased by 32 p.e.

Imported WWTW sludge (0.33% of total load)
The imported WWTW sludge load increased by 2,404 p.e.

Imported WTW sludge
No imported WTW sludge was treated at PPP treatment works.

Sludge return liquors (0.06% of total load)
The sludge return liquor load increased by 443 p.e. The confidence grade remains at B3 which is unchanged from last year.

E3.4-8 Scope of works
E3.4 Sewerage

Fort William	includes incoming sewer and four pumping stations.
Inverness	includes a major pumping station and associated pumping mains/gravity sewer.
Hatton	includes extensive pumping mains and pumping stations.
Nigg	includes incoming sewer and 14 pumping stations.
Persley	includes short section of incoming sewer
Peterhead	includes short section of incoming sewer
Fraserburgh	includes short section of incoming sewer and one terminal pumping station.
Moray Coast	includes extensive pumping mains and pumping stations.
Seafield	includes the Esk valley trunk sewerage network, a number of storm water works with overflow and seven sewage pumping stations.
Newbridge	includes short section of incoming sewer, a storm water works with overflow and two pumping stations.
Whitburn	includes one terminal pumping station
Levenmouth	includes eight pumping stations and associated rising mains and sewers.
Daldowie	Includes one pumping station and pumping main
Inverclyde	Includes one outfall

E3.5 Sewage Treatment - Only Daldowie does not include sewage treatment – it is exclusively a sludge treatment centre.

E3.6 Sludge Treatment

Permanent sludge treatment facilities

Inverness	Indigenous sludge, imports from Fort William, plus Scottish Water imports
Hatton	Indigenous sludge plus Scottish Water imports
Nigg	Indigenous sludge, imports from Persley, Peterhead, Fraserburgh, plus Scottish Water imports
Lossiemouth	Indigenous sludge, imports from Buckie, Banff MacDuff, plus Scottish Water imports
Seafield	Indigenous sludge, occasional imports from Newbridge, East Calder, Blackburn, Whitburn, plus Scottish Water imports
Newbridge	Indigenous sludge, imports from East Calder, Blackburn, Whitburn, plus Scottish Water imports
Daldowie	receives sludge from Dalmuir and Scottish Water wastewater treatment works (Daldowie, Shieldhall, Paisley, Dalmarnock and Erskine) by sludge pipeline, and from SW tankered imports
Meadowhead	Indigenous sludge, plus imports from Stevenston and Inverclyde
Levenmouth	Indigenous sludge, plus Scottish Water imports

Temporary sludge treatment facilities

The following sites do not have a permanent sludge treatment centre but temporary sludge treatment facilities were deployed on site.

Dalmuir	Temporary centrifuging deployed to limit the pass forward sludge to Daldowie STC to a maximum ferric content of 2 tonne/day
Daldowie (Shieldhall)	Temporary centrifuging deployed to alleviate storage constraints at Daldowie STC

E3.7 Terminal Pumping Station - means a pumping station that is the final point on the forward flow path from a sewerage network into a wastewater treatment works and may include both pumping of all/partial 'FFT' flows or stormwater flows to storm tanks and/or storm outfalls. The Terminal Pumping Station may form part of the sewerage network (i.e. be remote from the WTP) or may be associated with a wastewater treatment works depending on actual location and power supply source. It is not a Combined Pumping Station or a Stormwater Pumping Station.

The following works include incoming terminal pumping stations as part of the PPP scheme. Maximum capacity (l/s) of terminal pumping station, excluding standby capacity, is given in brackets:

Fort William	Caol Transfer (118 l/s), Fort William WwTW(590 l/s).
Inverness	Allanfearn WwTW(50 l/s).
Hatton	South Balmossie (1,406 l/s), West Haven (110 l/s), Inchcape Park(241 l/s).
Fraserburgh	Fraserburgh Inlet (195 l/s).
Lossiemouth	Duffus Junction (33 l/s), Moycroft (300 l/s).
Buckie	Nook (84 l/s), Shipyard (70l/s), Buckie WwTW (13 l/s).
Banff MacDuff	Craigfauld (552l/s), Banff MacDuff WwTW (222 l/s).
Seafield	A proportion of total flow is delivered via Marine Esplanade Terminal PS (1420 l/s).

Newbridge	A proportion of total flow is delivered via the Ratho Sewer Terminal PS (196 l/s).
Whitburn	A proportion of total flow is delivered via the Harrison Sewer Terminal PS (45 l/s).
Levenmouth	All flow delivered via terminal pumping stations; Methil M2 (125 l/s), Leven (212 l/s), Buckhaven (133 l/s), Levenmouth WwTW inlet FFT flows (1,650 l/s), Levenmouth WwTW inlet storm flows (2,347 l/s).

E3.8 Other - No plants in this category.

E3.9-14 Sewage treatment - effluent consent standard

E3.9-13 Effluent consent standards - Data obtained from the current SEPA consents.

Where effluent consent standard includes both CAR and UWWTD elements the tighter standard is given in the return.

At Meadowhead the CAR license has still not been issued. License is based on COPA consent. Issuing of the new CAR Licence for Meadowhead is due shortly. We have seen and commented on the Draft consent, and are just now waiting for SEPA to issue the new consent.

E3.9 Suspended solids consent – all CAR**.**

E3.10 BOD consent – all UWWTD except Newbridge, East Calder, Blackburn and Whitburn

E3.11 COD consent – all UWWTD

E3.12 Ammonia consent – all CAR

At Dalmuir there is an Improvement Plan and Variation Notice in place from May 2012. This enables SEPA to give dispensation for ammonia compliance under CAS 4.3. Sampling has been suspended.

E3.13 Phosphate consent – all CAR,

At Newbridge, East Calder, Blackburn and Whitburn consent is expressed as; 'Mean concentration of total phosphorous of any series of composite samples taken at regular but randomised intervals in any period of 12 months.

E3.14 Compliance with effluent consent standards – Compliance for BOD, COD, SS, Ammonia, and Phosphate is reported for each works, based on the total number of sample results and exceedances (upper and lower tier) for sanitary determinands (to the exclusion of other parameters that may be included in the SEPA consent). Where effluent consent standard includes both CAR and UWWTD standards both sets of samples are used for the calculation of compliance.

Percentage compliance is calculated as:

(1-(total number of failures/total number of samples)) x 100

The SEPA Annual Compliance Report for period ending 31 December 2013 has been taken as the definitive data source, provided by our Regulator, and as such a Confidence Grade of A1 has been assigned.

Compliance calculated under this methodology may cause conflicts with Table C4 (C4.19) “Number of discharges confirmed as failing”, which considers all SEPA consent parameters.

Failures

Site		Parameter	Date of Failure	Comment
Meadowhead	UWWTD	BOD	23/01/13 E	Although SEPA have this recorded as a failure, this is in fact not a failure. This sample exceeded the numerical standard (i.e. 25 mg/l), but passed on percentage reduction. Therefore, it is actually a pass.
Persley	CAR	BOD, SS	10/01/13 F	Root cause investigated and confirmed as being associated with inability to remove sufficient stocks of Mixed Liquor Suspended Solids. Problem with sludge thickener and pump transfer to Northern District Sewer. Operator did not escalate matters to instigate contingency (tankering of liquid sludge).
		Ammonia	29/08/13 E	Exceptionally low flow during summer of 2013 resulted in high inlet concentrations of ammonia. Persley not designed to nitrify so very limited ammonia treatment feasible. EPI raised in mid June 2013 due to recognised risk of non compliance with SEPA consent.
Blackburn	CAR	Ammonia	12/03/13 E	Inhibition of nitrification process resulted in a 2.4mg/l ammonia exceedance (compared to 2mg/l limit). Root cause investigated and associated with high dose rate of aluminium (used to remove phosphorous) which, in turn, affected ammonia reducing bacteria.

E3.15-21 Treatment works category
Information contained in these lines is extracted from the project agreements and is given a confidence grade of A1.

E3.15 Primary

E3.16 Secondary activated sludge - Includes all plants except Blackburn.

E3.17 Secondary biological - Blackburn**.**

E3.18 Tertiary A1

East Calder	Nitrifying filters.
Whitburn	Nitrifying filters.

E3.19 Tertiary A2

Inverness	UV disinfection.
Persley	UV disinfection.
Faserburgh	UV disinfection.
Banff MacDuff	UV disinfection.
Seafield	UV disinfection, plus chemical (peracetic acid) contact tank used on an intermittent basis depending on flow.
Levenmouth	Chemically enhanced settlement process plus UV disinfection.
Newbridge	Low head loss sand filters
East Calder	Low head loss sand filters
Whitburn	Low head loss sand filters
Meadowhead	Biofors tertiary filter

E3.20 Tertiary B1 - No plants in this category.

E3.21 Tertiary B2

Blackburn	Low head loss sand filters

E3.22-32 Sewerage Data
Includes all sewerage (sewers, pumping stations, rising mans, outfalls and long sea outfalls)

Data sources: Concessions Agreements, Operators O&M manuals, Operators asset inventories, SW GIS system, as built drawings, SEPA consents.

Pump capacity (kW) obtained from motor drive rating, not the pump duty point.

SW GIS will be updated to include as built records of new sewer constructed by PFI Co.

E3.22 Total length of sewer – Length of outfalls included in data unless noted otherwise in commentary. Where terminal pumping stations are located remote from a wastewater treatment works, the length of rising main connecting the terminal pumping station and wastewater treatment works is included.

E3.23 Total length of critical sewer – Unless stated otherwise, all PPP sewers (including relief sewers, rising mains and CSO outfalls) are deemed to be critical.

Leven PS rising main to storm tank and return drain not deemed to be a 'critical sewer'.

E3.24 Number of pumping stations – includes stormwater, combined and terminal pumping stations. Interstage and final effluent pumping stations forming part of a wastewater treatment plant are not included.

E3.25 Capacity of pumping stations (m3/d) - includes stormwater, combined and terminal pumping stations. Maximum flow pumped forward per day. This excludes capacity of standby pumps.

At Hatton there was an upgrade in 13/14 to the duty pump at South Balmossie from 703 l/s to 860 l/s. The original pump was stripped out in May 2013 and replaced by two pumps in tandem (still classed as 1 pump). This will enable a more efficient pass forward flow.

E3.26 Capacity of pumping stations (kw) - includes stormwater and combined pumping stations, but not terminal pumping stations. Includes capacity of standby pumps.

E3.27 Number of combined pumping stations - Combined pumping station means a network wastewater pumping station containing a pump or pumps transferring wastewater forward within the downstream sewerage network. The transferred wastewater flow rate from the combined pumping station is the "FFT" rate, the generally accepted term used in design and SEPA consents. For the sake of clarity, where stormwater storage tank returns are pumped back into the sewerage system for onward flow, this shall be classed as a combined pumping station (as such flows become part of 'FFT'). Terminal pumping stations are not included.

The following combined pumping stations are included:

Fort William	Blar Mhor, Caol No1
Inverness	Longman
Hatton	Riverside, KGV, Stannergate, West Ferry, Broughty Castle, Fort Street, Gray Street
Nigg	Downies, Portlethen Village, Newtonhill Clifftop, Portlethen South, Backies, Cowie (3), Slughead, Bridge of Muchalls, Cammachmore, Portlethen North
Lossiemouth	Burghead, Cummingston, Hopeman, Moycroft
Buckie	Portgordon West, Portgordon East, Seatown, Cluny, Cullen East, Portknockie, Findochty, Portessie
Banff/MacDuff	Whitehills, Whitehills Harbour, Inverboyndie, Scotstown, Castlehill Park, Union Road, Bankhead
Seafield	Wallyford Transfer, Wallyford SWW, Portobello SWW, Harelaw SWW, Dalkeith SWW, Mayshade SWW,
Newbridge	Broxburn SWW.
Levenmouth	Methil M1.

Mayshade: pumping station comprises a separate duty/standby pump set in two separate storm tanks. As only one duty pump operates at any one time (i.e. storm tank 1 emptied before commencing emptying of storm tank 2) these four pumps have been entered as a single combined pumping station on a 1 duty/3 standby basis.

E3.28 Capacity of combined pumping stations (m3/d) - Maximum flow pumped forward per day. This excludes capacity of standby pumps.

E3.29 Number of stormwater pumping stations - stormwater pumping station means a network wastewater pumping station containing a pump or pumps transferring wastewater, containing stormwater, to a stormwater storage tank or storm overflow. The stormwater pumping station transfers wastewater in excess of "FFT", the generally accepted term used in design and SEPA consents. For the sake of clarity, the function of the stormwater pumping station is to prevent and/or limit surcharging of the upstream sewerage system.

The following stormwater pumping stations are included:

Inverness	Longman (2)
Hatton	Riverside, KGV, Stannergate, Westhaven, Broughty Castle, Inchcape Park
Nigg	Backies (2)
Lossiemouth	Moycroft
Buckie	Portessie
Banff MacDuff	Bankhead
Levenmouth	Leven, Roundall

E3.30 Capacity of stormwater pumping stations (m3/d) – Maximum flow pumped forward per day. This excludes capacity of standby pumps.

E3.31-32 Number of combined sewer overflows & Number of combined sewer overflows (screened) - CSOs that overflow within the sewerage system rather than to an outfall discharging direct to the environment are not included.

The following CSOs are included:

Fort William	Caol No1, Caol Transfer
Inverness	Longman
Hatton	Riverside, KGV, Stannergate, South Balmossie, Westhaven, Broughty Castle, Inchcape Park, Panmurefield/Balmossie Mill (2)
Nigg	Downies, Portlethen Village, Newtonhill Clifftop, Backies (2), Cowie, Portlethen North, Nigg
Fraserburgh	Fraserburgh Inlet (Watermill)
Lossiemouth	Burghead, Cummingston, Hopeman, Moycroft
Buckie	Portgordon West, Portgordon East, Seatown, Cluny, Nook, Cullen East, Portknockie, Findochty, Portessie, Shipyard
Banff MacDuff	Whitehills, Whitehills Harbour, Inverboyndie, Scotstown, Castlehill Park, Union Road, Bankhead, Craigfauld
Seafield	Wallyford, Dalkeith, Hardengreen, Harelaw, Haveral Wood, Middlemills, Newbattle, Newtongrange, Suttieslea
Newbridge	Broxburn
Levenmouth	Buckhaven, Methil M2 CSO2, Methil CSO1, Leven, Roundall

Seafield - Dalkeith SWW consists of two separate screen overflows on two separate legs of the sewer which combine at the SWW. As each screened overflow is located on the same site and feeds one common storm water tank and outfall, this overflow has been recorded as a single CSO. Suttieslea: 'Copa Sac' (equivalent to 6mm screen), is provided on outfall from storm tank.

Levenmouth - Methil CSO1 and Methil M2 CSO2 discharge into a common outfall.

E3.33-40 Sludge Treatment and Disposal Data - The quantities reported are the total sludge treated at the sludge treatment facilities (both from permanent and temporary) including the sludge destroyed through the treatment process. This is in accordance with the methodology used in England & Wales.

The information is based on PPP Company records of sludge disposed to the appropriate route.

Allanfearn sludge quantities disposed and the corresponding costs are included in Table E3 (costs in E3a) to be consistent with the rest of the PPP works.

TABLE E3a PPP Cost Analysis

This table provides operating costs for each scheme. As actual data is not available, all costs have been extracted from the financial model. Where the financial model does not split costs the following has been assumed:

- Works with a Sludge Centre: 72 % Treatment Costs, 28% Sludge Costs
- All other works: 80% Treatment, 20% Sludge Costs. These sludge costs have been taken forward to the appropriate sludge centre, e.g. Fort William sludge costs appear against Inverness sludge centre.

E3a.1, 8, 16 Estimated Direct Operating Cost

Estimated annual direct operating costs are based on the Concessionaire's financial model adjusted for actual inflation.

Where the model identified Rates and SEPA charges these have been deducted otherwise actual charges were deducted.

No adjustments were made at AVSE (for Rates), Daldowie (for Rates), and MSI (SEPA and Rates) as charges are paid by Scottish Water and are not included in the financial model. At Dalmuir Scottish Water pays the charges but amounts are also included in the model, therefore an adjustment to the model costs was made (Rates and SEPA charges included in the model are refunded to Scottish Water).

Actual costs are not known and could vary considerably from the financial model. A confidence grade of D6 has therefore been used. A confidence grade of A3 was allocated to the Dalmuir sludge treatment costs as these costs are available.

E3a.2, 9, 17 Rates paid by the PPP Contractor

These are based on the rateable value and poundage published on the government website (www.saa.gov.uk). Rates paid by Scottish Water are also included and are based on actual charges for the year (Dalmuir, Daldowie, MSI, AVSE).

Confidence grade for total rates paid for each site is A2, but because rates have to be split to take account of the sewerage, treatment and sludge elements a lower confidence grade has been applied.

	E3a.2	E3a.9	E3a.17	
Site	**N**	**T**	**S**	**Comment**
Fort William	N	B3	N	No sludge centre at works, sludge cost moved to Inverness
Inverness	N	B3	B3	Cost distribution is estimated
Hatton	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Nigg	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Persley	N	B3	N	No sludge centre at works, sludge cost moved to Nigg
Peterhead	N	B3	N	No sludge centre at works, sludge cost moved to Nigg
Fraserburgh	N	B3	N	No sludge centre at works, sludge cost moved to Nigg

Lossiemouth	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Buckie	N	B3	N	No sludge centre at works, sludge cost moved to Lossiemouth
Banff MacDuff	N	B3	N	No sludge centre at works, sludge cost moved to Lossiemouth
Seafield	N	B3	B3	Cost distribution is estimated, based on the Financial Model
Newbridge	N	B3	B3	Cost distribution is estimated, based on the Financial Model
East Calder	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Newbridge
Blackburn	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Newbridge
Whitburn	N	B3	N	No sludge centre at works, sludge cost moved to Newbridge
Levenmouth	N	B3	B3	Cost distribution is estimated,
Dalmuir	N	B3	N	No sewerage and no permanent sludge centre at works
Daldowie	N	N	A2	No sewage treatment at works
Meadowhead	N	B3	B3	Cost distribution is estimated
Stevenston	N	B3	N	No sewerage and no sludge centre at works, sludge cost moved to Meadowhead
Inverclyde	N	B3	N	No sludge centre at works, sludge cost moved to Meadowhead

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E3a.3, 10, 18 SEPA charges paid by the PPP Contractor

Cost allocation is as per the SEPA invoices for 13/14.

The following confidence grades have been assigned:

	E3a.3	E3a.10	E3a.18	
Site	**N**	**T**	**S**	**Comment**
Fort William	A2	A2	N	no sludge centre at works
Inverness	N	A2	A2	no separate cost for sewerage, no sludge centre at works
Hatton	A2	A2	A2	
Nigg	A2	A2	A2	
Persley	N	A2	N	no separate cost for sewerage, no sludge centre at works
Peterhead	N	A2	N	Split provided by PFI Co, no sludge centre at works
Fraserburgh	N	A2	N	no separate cost for sewerage, no sludge centre at works
Lossiemouth	A2	A2	N	no subsistence charge included in invoices
Buckie	A2	A2	N	no sludge centre at works
Banff MacDuff	A2	A2	N	no sludge centre at works
Seafield	A2	A2	A2	
Newbridge	A2	A2	N	No WML charge included in invoice
East Calder	N	A2	N	No sewerage and no sludge centre at works
Blackburn	N	A2	N	No sewerage and no sludge centre at works
Whitburn	N	A2	N	No sewerage and no sludge centre at works
Levenmouth	A2	A2	A2	

Dalmuir	N	N	N	SEPA fees paid by SW
Daldowie	N	N	A2	Sludge treatment only
Meadowhead	N	N	A2	Only PPC fees paid by the PFI Co
Stevenston	N	N	N	SEPA fees paid by SW
Inverclyde	N	N	N	SEPA fees paid by SW

E3a.4, 11, 19, 23 Total Direct Cost

Total of E3a.1-3, 8-11 and 16-18. Confidence grade for Total direct cost is D6 as per E3a.1, 8 and 16 (Estimated direct operating cost) as this is the most significant element of Total direct cost. A confidence grade of A3 was allocated to the Dalmuir sludge treatment costs as these costs are available.

E3a.5, 12, 20 Scottish Water General and Support Expenditure

This includes advisors and legal costs, power, rent and insurance etc. and the cost of the Scottish Water PPP department that administers the PPP projects which have been allocated to projects based on Opex. Costs are as per the P&L. In addition, Scottish Water costs of inter-site tankering and terminal pumping costs have been included where tankering or pumping has taken place between a Scottish Water works and a PFI site.

Confidence grade for total charges is A1, but because Scottish Water PPP department costs have to be split across all sites and all charges have to be split to take account of the sewerage, treatment and sludge elements the following confidence grades have been assigned:

A confidence grade of A3 was allocated to the Dalmuir sludge treatment costs as these costs are available.

	E3a.5	E3a.12	E3a.20	Comment
Site	**N**	**T**	**S**	
Fort William	CX	C4	N	Network cost very small, no sludge centre at works
Inverness	C4	C4	C4	
Hatton	C4	C4	C4	
Nigg	C4	C4	C4	
Persley	CX	C4	N	Network cost very small, no sludge centre at works
Peterhead	CX	C4	N	Network cost very small, no sludge centre at works
Fraserburgh	CX	C4	N	Network cost very small, no sludge centre at works
Lossiemouth	C4	C4	C4	
Buckie	C4	C4	N	No sludge centre at works
Banff MacDuff	C4	C4	N	No sludge centre at works
Seafield	C4	C4	C4	
Newbridge	CX	C4	C4	Network cost very small
East Calder	N	C4	N	No sewerage and no sludge centre at works
Blackburn	N	C4	N	No sewerage and no sludge centre at works
Whitburn	CX	C4	N	Network cost very small, no sludge centre at works
Levenmouth	C4	C4	C4	
Dalmuir	N	C4	A3	No sewerage
Daldowie	C4	N	C4	No sewage treatment at works
Meadowhead	N	C4	C4	No sewerage

	E3a.5	E3a.12	E3a.20	Comment
Stevenston	N	C4	N	No sewerage and no sludge centre at works
Inverclyde	CX	C4	N	Network cost very small, no sludge centre at works

E3a.6, 13, 21 Scottish Water SEPA Charges

With the exception of Dalmuir and MSI, all standard SEPA charges are met by the Concessionaire and are included in the tariff rates. At Nigg Scottish Water meet the additional SEPA charges associated with 2 parameters as detailed in the contract. Costs are as per the P&L and reflect charges as invoiced by SEPA.

	E3a.6	E3a.13	E3a.21	
Site	**N**	**T**	**S**	**Comment**
Fort William	N	N	N	SEPA charges paid by PFI Co
Inverness	N	N	N	SEPA charges paid by PFI Co
Hatton	N	N	N	SEPA charges paid by PFI Co
Nigg	N	A2	N	Treatment cost only (exotics)
Persley	N	N	N	SEPA charges paid by PFI Co
Peterhead	N	N	N	SEPA charges paid by PFI Co
Fraserburgh	N	N	N	SEPA charges paid by PFI Co
Lossiemouth	N	N	N	SEPA charges paid by PFI Co
Buckie	N	N	N	SEPA charges paid by PFI Co
Banff MacDuff	N	N	N	SEPA charges paid by PFI Co
Seafield	N	N	N	SEPA charges paid by PFI Co
Newbridge	N	N	N	SEPA charges paid by PFI Co
East Calder	N	N	N	SEPA charges paid by PFI Co
Blackburn	N	N	N	SEPA charges paid by PFI Co
Whitburn	N	N	N	SEPA charges paid by PFI Co
Levenmouth	N	N	N	SEPA charges paid by PFI Co
Dalmuir	N	A2	N	No sewerage, no charge for temporary sludge centre at works
Daldowie	N	N	N	SEPA charges paid by PFI Co
Meadowhead	N	A2	N	Treatment cost only, sludge costs are paid by the PFI Co
Stevenston	N	A2	N	No sewerage and no sludge centre at works
Inverclyde	BX	A2	N	No sludge centre at works

E3a.7, 14,22 Total sewerage cost, total sewage treatment cost, total sludge treatment costs and disposal cost - Confidence grade is D6 as per E3a.1, 8 and 16 (estimated direct operating Cost) as this is the most significant element of the cost.

A confidence grade of A3 was allocated to the Dalmuir sludge treatment and disposal costs as these costs are available.

E3a.15 Estimated terminal pumping cost – Reported costs are as per the costs incurred for the SW operated terminal pumping stations.

Where the terminal pumping station is part of the PPP scheme the costs are met by the Concessionaire and are included in the tariff rates and not reported as part of E3a.15..

E3a.24 Total Scottish Water cost - Total of Scottish Water General and Support Expenditure, and Scottish Water SEPA Charges (E3a.5-6, 12-13 and 20-21).

Confidence grade for total charges is A1, but because Scottish Water PPP department costs and internal recharges have to be split across all sites a confidence grade of C4 has been allocated.

Site	13/14 £m	12/13 £m	Variance £m	Comment
Ft William	-0.017	0.009	-0.026	13/14 includes release of accrual of legal/consultants costs -£0.020m, lower ABM support costs -£0.006m
Inverness	0.445	0.513	-0.068	13/14 includes lower legal/consultants costs -£0.019m, lower sludge tankering and disposal costs -£0.045m, lower terminal pumping costs -£0.002m, and lower ABM support costs -£0.002m
Hatton	0.231	0.286	-0.055	13/14 includes lower legal/consultants costs -£0.026m, and lower other Scottish Water operating costs -£0.001m, lower sludge tankering costs -£0.038m, higher terminal pumping costs +£0.010m
Nigg	1.362	1.154	0.208	13/14 includes higher legal/consultants fees +£0.011m, and higher other Scottish Water operating costs +£0.088m, higher sludge tankering costs +£0.83m, and higher ABM support costs +£0.026m
Persley	0.012	0.018	-0.006	13/14 includes lower consultants costs -£0.005m and lower ABM support costs -£0.001m
Peterhead	0.009	0.009	0.000	13/14 higher terminal pumping costs +£0.001m
Fraserburgh	0.008	0.008	0.000	
Lossiemouth	0.137	0.243	-0.106	13/14 includes lower other Scottish Water operating costs -£0.032m, lower sludge tankering costs -£0.070m, and lower ABM support costs -£0.004m
Buckie	-0.007	0.008	-0.015	13/14 includes release of accrual of legal and consultants costs -£0.013m, lower ABM support costs -£0.002m
Banff/Macduff	-0.001	0.015	-0.016	13/14 includes release of accrual of legal and consultants costs -£0.013m, lower ABM support costs -£0.003m
Seafield	0.015	0.121	-0.106	13/14 includes lower consultants costs -£0.105m, and higher other Scottish Water operating costs +£0.016m, lower ABM support costs -£0.018m
Newbridge	0.028	0.023	0.005	
East Calder	0.011	0.009	0.002	
Blackburn	0.005	0.005	0.000	
Whitburn	0.007	0.005	0.002	
Levenmouth	0.383	0.255	0.128	13/14 includes higher legal/consultants costs +£0.013m, higher Scottish Water operating costs +£0.085m, lower sludge tankering costs -£0.003m, and higher ABM support costs +£0.033m

Site	13/14 £m	12/13 £m	Variance £m	Comment
Dalmuir	0.990	1.590	-0.600	13/14 includes lower legal/consultants costs -£0.012m, lower Scottish Water sludge disposal costs -£0.545m, higher other Scottish Water operating costs +£0.004m, and lower ABM support costs -£0.045m
Daldowie	2.147	2.806	-0.659	13/14 includes higher legal/consultants costs +£0.007m, lower Shieldhall centrifuging costs -£0.479m, lower other Scottish Water operating costs -£0.002, lower sludge tankering costs -£0.151m, and lower ABM support costs -£0.034m
Meadowhead	0.986	0.833	0.153	13/14 includes higher legal/consultants costs +£0.008m, and higher other Scottish Water operating costs +£0.060m, higher terminal pumping costs +£0.083m, and higher ABM costs +£0.002m
Stevenston	0.408	0.335	0.073	13/14 includes higher other Scottish Water operating costs +£0.004m, and higher terminal pumping costs +£0.068m, and higher ABM costs +£0.001m
Inverclyde	0.389	0.101	0.288	13/14 includes higher terminal pumping costs +£0.287m, and higher ABM costs +£0.001m
TOTAL	**7.548**	**8.346**	**-0.798**	

E3a.25 Total operating cost - Confidence grade for Total operating cost is D6 as per E3a.23 Total direct cost, as this is the most significant element of Total operating cost.

E3a.26 Annual charge - The Annual charge is based on the service fees for the year, provisions and business rates (including rebates). Expenditure is taken from the P&L.

Confidence grades for each of the AVSE schemes is B3 as the charges are based on the total AVSE flows as there is no separate tariff for each scheme.

Site	13/14 £m	12/13 £m	Variance £m	Comment
Ft William	4.035	3.311	0.724	13/14 higher flows/loads plus inflation +£0.724m
Inverness	6.361	5.611	0.750	13/14 penalties -£0.484m, lower flows/loads plus inflation +£0.131m, Carbon Reduction Commitment -£0.005m, release of accruals -£0.038m 12/13 included penalties -£1.11m, release of accruals -£0.036m,
Hatton	21.210	21.435	-0.225	13/14 lower flows/loads plus inflation +£0.041m, Carbon Reduction Commitment -£0.029m, and release of accrual -£0.271 12/13 included under accruals -£0.034m
Nigg	14.053	14.966	-0.913	13/14 penalties -£0.103m, lower flows/ loads, plus inflation -£0.835m, Carbon Reduction Commitment -£0.006m, release of accruals of -£0.105m. 12/13 included penalties -£0.098m, release of accruals -£0.038m.

Site	13/14 £m	12/13 £m	Variance £m	Comment
Persley	2.384	2.489	-0.105	13/14 penalties -£0.009m, lower flows/loads, plus inflation -£0.090m, Carbon Reduction Commitment +£0.003m, and release of accruals of -£0.005m 12/13 included penalties -£0.010m, sampling +£0.008m, under accruals of +£0.006m
Peterhead	1.681	1.763	-0.082	13/14 lower flows/loads, plus inflation -£0.033m, Carbon Reduction Commitment +£0.002m, and release of accruals of -£0.051m
Fraserburgh	1.841	1.992	-0.151	13/14 penalties -£0.009m, lower flows/loads, plus inflation -£0.056m, Carbon Reduction Commitment +£0.001m, and release of accruals of -£0.090m 12/13 included release of accruals -£0.003m.
Lossiemouth	4.167	4.480	-0.313	13/14 lower flows plus inflation -£0.295m, Carbon Reduction Commitment -£0.008m, and release of accruals of -£0.018m 12/13 included penalties -£0.014m, under accruals of +£0.006m
Buckie	2.507	2.854	-0.347	13/14 lower flows plus inflation -£0.234m, Carbon Reduction Commitment -£0.003m, and release of accruals of -£0.009m 12/13 included under accruals of +£0.101m
Banff/Macduff	2.688	3.111	-0.423	13/14 lower flows plus inflation -£0.423m
Seafield	19.814	19.181	0.633	13/14 based on 100% compliance with the contract plus inflation +£0.390m, Prestonpans imports +£0.200m, Carbon Reduction Commitment -£0.027m, Seafield Odour Improvement project +£0.037m, higher business rates +£0.048m, and release of accruals -£0.465m 12/13 included odour emissions inventory and modelling +£0.1m, and release of accruals -£0.751m
Newbridge	2.868	2.776	0.092	
East Calder	1.564	1.514	0.050	
Blackburn	0.782	0.757	0.025	
Whitburn	1.043	1.009	0.034	
Levenmouth	15.531	13.280	2.251	13/14 lower flows -£1.065m, plus inflation +£0.350m, Opex claim compensation -£0.064m, Odour Action Plan -£0.075m, Odour Project +£3.350m, Carbon Reduction Commitment -£0.037m, Leven PS fence +£0.030m, Methil PS land purchase +£0.040m,and release of accruals -£0.558m 12/13 included release of accruals -£0.280m.
Dalmuir	8.253	10.822	-2.569	13/14 lower flows, plus inflation +£0.054m, Annual operations compensation payment +£0.119m, New Investments Opex +£0.011m, centrifuge project -£0.359m, additional works +£0.105m, business rates -£0.060, Carbon Reduction Commitment -

Site	13/14 £m	12/13 £m	Variance £m	Comment
				£0.021m, accrual reversals -£2.750m 12/13 included Dalmuir swap extension -£0.111m, release of accruals -£0.221m.
Daldowie	19.590	19.193	0.397	13/14 higher sludge volumes plus inflation +£0.832m, necessary change costs +£0.012m, Screening improvements at Daldowie +£1.500m, lower business rates -£0.048m, claim excess ragging -£0.200m, Carbon Reduction Commitment -£0.087m, release of accrual -£1.761m 12/13 included release of accruals -£0.149m
Meadowhead	9.715	7.797	1.918	13/14 service fee inflation +£0.130m, Landfill Tax & Gas cost +£0.025m, lower business rates -£0.034m, trader necessary change -£0.043m, Project Variation re UPM/PADR 2 +£2.400m, additional works -£0.063m, Carbon Reduction Commitment -£0.024m, release of accruals -£0.425m 12/13 included under accruals +£0.048m.
Stevenston	2.856	3.430	-0.574	13/14 lower flows, plus inflation +£0.077m, trader necessary change -£0.038m, lower business rates -£0.014m, Carbon Reduction Commitment -£0.004m, release of accruals -£0.696m 12/13 included release of accruals -£0.101m
Inverclyde	3.587	3.544	0.043	13/14 service fee inflation +£0.065m, additional works +£0.006m, higher business rates +£0.003m, Carbon Reduction Commitment -£0.004m, and release of accruals -£0.027m
TOTAL	**146.530**	**145.315**	**1.215**	

E3a.27 Public sector capital equivalent values – values were derived from the base model incorporated in a report to the Transport and Environment Committee on 21 June 2001 adjusted for inflation. At Daldowie the PPP cost was used in the absence of a PSCE value, similarly for Levenmouth and AVSE the values have been taken from the 01/02 WIC return.

E3a.28 Contract period - The period quoted is the Contract Period as defined in the Contract.

E3a.29 Contract end date - Contract end date is as defined in the Contract.

Table E4 Water Explanatory Factors - Resources and Treatment

E4.1-5 Source Types

The number of sources has decreased by 17 to 284. This reduction is due to a number of previously reported sources supplying water treatment works (WTW) which were closed during 2013/14 (21 sources). However, there were also 4 new sources added. Details are provided in the table below:

	2012/13 No. of sources	*301*
Reductions	Source or WTW closures	21
Additions	New sources	4
	2013/14 No. of sources	**284**

Distribution input (DI) reduced by 16.218 Ml/d to 1823.756 Ml/d.

Changes to DI this year are detailed in the table below:

Source Type	**2012/13**	**2013/14**	**Net Change**
	Ml/d		
Impounding reservoirs	1,370.705	1346.429	-24.276
Lochs	26.586	19.428	-7.158
River and burn abstractions	372.432	381.173	+8.741
Boreholes	70.250	76.727	+6.477
Total	**1,839.974**	**1823.756**	**-16.218**

As in previous years, we have completed columns 110–140 by assuming that, where multiple sources feed a WTW, the total average daily output comes only from the primary source. The primary source is therefore allocated 100% of the DI and all other sources are allocated 0%.

The confidence grade for the number of sources is B2. The overall reliability band remains as B. Although the asset information now held in Ellipse is sufficient to enable the number of sources to be reliably determined, it is recognised that there is still work to be done in establishing a robust process for this data being maintained as business as usual. Currently it is reliant on annual checks and bulk updates. However, in recognition of the improvements made, the accuracy range has been increased from 3 to 2 in relation to the number of sources. The confidence grade for columns 110-140 (the average daily output of these sources) remains at B2 (in line with reported confidence for table A2).

E4.6-7 Bulk water exports and imports

We do not have any raw water exports or imports. Accordingly, a confidence grade of A1 has been entered for these lines.

E4.8-12 Proportion of own source output

There were only minor changes to the source type proportions of total distribution input (DI) this year.

E4.13 Peak demand - peak to average ratio

This line reports the ratio A: B where –

A = the average daily volume into supply in the peak seven day period in the peak year of the preceding five years

B = the average daily volume into supply in the peak year of the preceding five years

The peak year of the last five years was 2009/2010. In that year, A was 2,044.672 Ml/d and B was 2,360.167 Ml/d. The peak to average ratio is therefore 1.154.

No changes were made to the process or methodology used to report this line. As the figure is based on weekly reported distribution input (DI), the confidence grade assigned to it is based on the confidence grade of the DI in the peak year. The confidence grade is therefore C3, the same as that for the DI data in AR08.

E4.14 Average pumping head – resources and treatment

The reported Average Pumping head this year is 27.6m, an increase of 1.0m from the previous year.

As limited flow and pressure data is available, the methodology used was to update last year's figures by calculating the change to the "Work Done" (m^4) at regional level based on the proportional (regional) change to DI. This figure was then divided by the Regional DI to obtain the Regional Pumping Head, which was then aggregated.

Although the definitions include a requirement to report on interstage pumping for this line, we have again not included any such information due to insufficient data in this area.

Pumping head data

We note that due to data limitations our confidence grade has remained at C4. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

E4.20-26 Water Treatment Works by Process Type

The number of water treatment works (WTW) decreased by 14 to 256; the total distribution input (DI) reduced by 16.2 Ml/d to 1,823.8 Ml/d.

The process for completing Table E is the same as for previous years. Changes to the numbers of WTW by process type have arisen as a result of operational changes this year.

Note: Table E reports all WTW that provided water into supply at any time during the year.

The confidence grade for the number of WTW remains at B2. The confidence grade for total DI remains at B3

E4.28-39 Water Treatment Works by Size Band

Changes to the number of water treatment works (WTW) in use and proportions (%) of total distribution input (DI) this year are broken down by WTW size band in the table below:

Size Band	2012/13		2013/14		Net Change	
	No.	*% (1)*	*No.*	*%*	*No.*	*%*
<= 1 Ml/d	154	1.2	142	1.1	-12	0
>1, <= 2.5 Ml/d	25	1.3	25	1.3	0	0
>2.5, <= 5 Ml/d	28	3.3	26	3.5	-2	+0.2
>5, <= 10 Ml/d	16	4.5	16	4.5	0	0
>10, <= 25 Ml/d	20	11	20	10.8	0	-0.2
>25, <= 50 Ml/d	12	15.4	12	15.2	0	-0.2
>50, <= 100 Ml/d	9	22.7	9	22.8	0	+0.1
>100, <= 175 Ml/d	4	20.3	4	20.1	0	-0.2
>175 Ml/d	2	20.3	2	20.7	0	+0.4
Total	**270**		**256**		**-14**	

The confidence grade for proportion of total DI remains at C3.

E4.15-39 Functional costs by operational area, process and size band

Water Resources & Treatment E4.19

	Total
Functional expenditure:	£m
2013/14	61.151
2012/13	52.849
Variance	**(8.302)**

Water resources and treatment costs increased by £8.3m (15.7%) from 2012/13. This is analysed as follows:

- £0.6m (4.8%) increase in employment costs is mainly due to pay progression increase of £0.2m; and increased focus on water quality OPA improvements of £0.4m;
- £1.5m (15.9%) increase in power costs is mainly due to increase in consumption and price of £1.2m; reduction in energy generation credits of £0.3m; carbon tax increase 0.1m; and additional costs resulting from capital investment of £0.1m;
- £5.8m (206.0%) increase in hired and contracted is mainly due to additional charges resulting from water landfill tax changes of £5.5m; costs for repairs to redundant assets of £0.5m; costs of water tankering in support of capital investment of £0.8m; and additional costs resulting from capital investment of £0.1m;
- £0.6m (5.7%) increase in materials and consumables due to increased E&M planned maintenance of £0.1m; costs associated with improving water quality OPA of £0.2m; and additional costs resulting from capital investment of £0.3m;
- £0.1m (1.2%) increase in SEPA costs mainly due to inflationary increase of 2.0%;
- £0.1m (7.6%) increase in other direct costs; and
- £0.4m (3.0%) decrease in general and support costs.

Water resources and treatment costs analysed by region:

Functional expenditure:	North £m	East £m	South £m	West £m	Direct £m	General and Support £m	Total £m
2013/14	12.082	12.803	9.214	14.670	**48.769**	12.382	**61.151**
2012/13	9.043	10.519	8.055	12.464	**40.081**	12.768	**52.849**
Variance	**(3.039)**	**(2.284)**	**(1.159)**	**(2.206)**	**(8.688)**	**+0.386**	**(8.302)**

Changes to the numbers of WTW by process type have arisen as a result of operational changes and process re-classifications in WTW during 2013/14. Re-stating 2012/13 figures on like-for-like basis shows the following variations:

Analysis of water resources and treatment costs by process type:

Process Type	2013/14 £m	2012/13 £m	Variance £m
SD : Simple Disinfection	1.804	1.528	(0.276)
W1 : SD plus simple physical or chemical treatment	0.156	0.127	(0.029)
W2 : Single stage complex physical or chemical treatment	10.502	8.840	(1.662)
W3 : Multiple stage complex treatment, excluding W4	32.261	26.240	(6.021)
W4 : Very high cost treatment Process	4.046	3.346	(0.700)
Direct	**48.769**	**40.081**	**(8.688)**
General and Support	12.382	12.768	+0.386
Total	**61.151**	**52.849**	**(8.302)**

Analysis of water resources and treatment costs by size band:

Size band	2013/14 £m	2012/13 £m	Variance £m
<=1 Ml/d	6.762	5.369	(1.393)
>1 to <=2.5 Ml/d	3.285	2.653	(0.632)
>2.5 to <=5 Ml/d	4.448	3.623	(0.825)
>5 to <=10 Ml/d	5.089	3.914	(1.175)
>10 to <=25 Ml/d	8.126	6.713	(1.413)
>25 to <=50 Ml/d	7.149	6.276	(0.873)
>50 to <=100 Ml/d	6.103	4.413	(1.690)
>100 to <=175 Ml/d	4.263	3.845	(0.418)
>175 Ml/d	3.544	3.275	(0.269)
Direct	**48.769**	**40.081**	**(8.688)**
General and Support	12.382	12.768	+0.386
Total	**61.151**	**52.849**	**(8.302)**

Movements in individual works explain the increases and decreases by region, category and size band. Some of the larger movements, which do not follow the profile of overall movements, are explained as follows:

- Aviemore WTW [North, 5-10 Ml/d, W3] increased £0.1m, mainly due to tanker hires required to maintain supplies in dry weather;
- Balmore WTW [West, 175+ Ml/d, W2] decreased by £0.1m, due to capital works at Loch Lomond source;

- Glenfarg WTW [East, 50-100 Ml/d, W4] increased £0.2m, due to additional pumping from source required because of dry weather;
- Mannofield WTW [East, 50-100 Ml/d, W3] increased £0.1m, due to increased demand from new housing, and £0.1m due to water quality issues;
- Milngavie WTW [West, 175+ Ml/d, W2] increased £0.2m, due to prior year energy generation credits received in 2012/13;
- Tarbert (Argyll) WTW [North, 1-2.5 Ml/d, W3] decreased £0.1m, due to operational issues in prior year;
- Turret WTW [West, 50-100 Ml/d, W3] increased £0.5m, due to reduction in energy generation because of low flows and issues with turbines.

Costs which are directly attributable to abstraction and treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, Ellipse timesheets or work orders. Of the £48.8m (E1.8) total direct resource and treatment costs, £42.8m of costs or 87.8% (£46.9m less £4.1m distribution costs) have been directly charged to assets in our corporate costing system.

Other costs have been allocated to Water Resources and Treatment through ABM support activity allocation, e.g. stores based on number of issues, IT applications based on number of users, etc. Therefore, support costs are allocated on a resource consumed basis. However, many of these costs are not specific to an asset; they are generally attributable to an employee. It follows that the majority of these support costs should be allocated to the activities the employees have been completing.

Confidence grades on Table E4 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remains to be allocated to works by means other than direct capture.

Table E6 Water Distribution

E6.1 Annual average resident connected population

The annual average resident connected population increased by 18,774 to 5,116,705. This figure is consistent with the figure reported in A2.1.

The methodology used to allocate population to 4 operational regions remains unchanged from the method used last year.

The confidence grade remains at A2.

E6.2 Total connected properties

The total number of connected properties has increased by 6,302 to 2,607,679. This figure is consistent with the figure reported in A1.10.

The methodology used to allocate properties to 4 operational regions remains unchanged from the method used last year. The confidence grade remains at B4.

E6.3 Volume of water delivered to households

The volume of water delivered to households decreased by 31.2 Ml/d to 841.6 Ml/d. This figure is consistent with the sum of the figures reported in A2.11 and A2.12.

The volume was calculated by operational region using the property figures calculated for line E6.2, multiplied by the regional specific Per Household Consumption figure.

The confidence grade remains at B2.

E6.4 Volume of water delivered to non-households

The volume of water reported as delivered to non-households decreased by 9.5 Ml/d to 410.3 Ml/d. This figure is consistent with the sum of the figures reported in A2.13 and A2.14.

Measured and unmeasured non-household volumes are allocated to water operational areas and summed to regional level; the method remains unchanged from last year.

The confidence grade remains unchanged at B4.

E6.5 Area

There has been no change to the operational regions in the last year and the area has remained the same at 79,796km^2.

The confidence grade remains at A1, reflecting the fact that the operational region boundaries are taken directly from the corporate GIS.

E6.6 Number of supply zones

The number of supply zones decreased by 8 to 290.

This was calculated using the same methodology as last year and matches the number reported to the Drinking Water Quality Regulator.

Changes in zones topology are tracked and recorded by the Water Quality Regulation Zone procedure and have a full audit trail.

The confidence grade remains at A1.

E6.7-11 Functional Cost

E6.7-11 Functional Cost

Water Distribution E6.11

	Total
Functional expenditure:	£m
2013/14	60.904
2012/13	60.285
Variance	**(0.619)**

Water distribution costs increased by £0.6m (1.0%), from 2012/13. This is analysed as follows:

- £1.0m (4.3%) decrease in employment costs mainly due to the reclassification of customer contact costs as customer services of £1.0m; and reduction in leakage related mains repairs of £0.6m; partly offset by pay progression increase of £0.4m;
- £1.0m (14.3%) increase in power costs mainly due to increase in consumption and price of £1.1m; and carbon tax increase 0.1m;
- £1.3m (13.4%) increase in hired and contracted services mainly due to provision for network intervention activity as a result of contractual arrangements of £0.7m; increase in mains repairs of £0.6m; and costs for repairs to redundant assets of £0.1m;
- £0.1m (9.1%) increase in materials and consumables;
- £0.3m (7.1%) increase in other direct costs; and
- £1.2m (7.6%) decrease in general and support costs.

Water distribution costs are analysed by region:

	North	East	South	West	Total	General and Support	Total
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2013/14	5.643	12.231	11.691	16.980	**46.545**	14.359	**60.904**
2012/13	5.518	11.447	12.499	15.275	**44.739**	15.546	**60.285**
Variance	**(0.125)**	**(0.784)**	**+0.808**	**(1.705)**	**(1.806)**	**+1.187**	**(0.619)**

Confidence grades on Table E6 are consistent with grades in then general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset or zone, hence the A2 confidence grade.

Scottish Water has slightly lower confidence levels on Network cost analysis than treatment cost analysis. This is due to lower levels of direct labour capture on Networks.

E6.12-16 Potable mains

There were no significant changes in the figures of Bands 1-4 or total length of mains, with a total increase in length of 238 km (0.3%).

The inventory is reported from our corporate GIS, where the diameter field is populated to 99.3% leaving 328km (0.7%) of mains not populated with a valid diameter. The default value used to infill is DN150, falling into Band 1, which is the smallest band.

The confidence grades remain at B2.

E6.17 Total length of unlined iron mains

The total length of unlined iron mains decreased by 237.03 km (1.8%) to 12,633.97km.
This was due to mains being renewed, relined or abandoned.

The report relies on population of the material and lining attributes in the inventory. 152.45km of GIS potable main was populated by the Infill material model and is defaulted to unlined spun iron, constituting 0.3% of reported value.

The information available for pipe lining is not fully complete, with 38.75% of ferrous inventory having null or unknown as the lining attribute. If the GIS lining attribute is held as bitumen or unknown for grey, cast and spun iron, it is included as unlined iron main. Ductile iron is assumed to be cement lined where the lining material is unknown and totals 2,051.85km.

E6.18 Total length of mains >320mm diameter

The total length of mains greater than 300mm diameter increased by 8.85km to 3918.25km.

The inventory is reported from our corporate GIS. The diameter field is populated for effectively all these mains, with less than 0.04% not populated with a diameter. The confidence grade remains at B2.

E6.19 Water mains bursts

The number of water mains bursts has decreased by 342 to 7,856 over the report year representing a 4.2% reduction on last year.

Generally over the first six months there was an increase in the number of bursts compared to last year by around 9.5%. However an overall declining trend in the number of bursts was evident throughout the second half of the report year of around 16%.

The trend over the last four years has generally been of a decrease in the number of customer reported bursts, with a 23.6% decrease overall. This includes a 4.2% decrease in the report year. In 2012/13 there was a 3.5% decrease in the number of non-customer-reported bursts and a further 5.7% decrease in the report year.

The annual number of non-customer-reported bursts for the reporting year is 18% of the total number of bursts, leaving 82% being customer reported bursts. This split is comparable to last few years.

The confidence grade remains at B3.

E6.20 Leakage level

We also report leakage in terms of Maximum Likelihood Estimation (MLE) leakage in A2 and G3 tables. Our MLE reported leakage for 2013/14 is 565.8 Ml/d which is a 9.3 Ml/d reduction on our reported MLE leakage of 575.2 Ml/d for 2012/13.

For E 6.20, the top-down leakage level used in the MLE assessment has decreased by 9.4 Ml/d from 617.2 Ml/d in 2012/13 to 607.8 Ml/d in 2013/14.

The confidence grade remains at B3.

E6.21 Properties reported for low pressure

The overall number of low pressure properties has reduced from 604 to 429. Targeted investment and operational changes have improved pressure to 175 properties during 2013-14. 38 properties have been recorded as being added to the register due to investigation work, through customer complaints, or due to better information. Further investigation work has also resulted in 68 properties being removed through better information. 9 properties were added as a result of asset deterioration and 3 properties have been added due to operational changes.

The confidence grade remains at B2.

20012/13 Properties reported for low pressure	*604*
Removed due to operational improvements	-84
Removed due to asset improvements	-73
Removed due to better information	-68
Added due to asset deterioration	+9
Added due to better information	+38
Added due to operational changes	+3
2013/14 Properties reported for low pressure	**429**

E6.22-25 Pumping Stations

E6.22 Total number of pumping stations

The total number of pumping stations increased by 9 to 599. The table below shows the change in the number of stations recorded in the corporate asset inventory as being operational during this year:

2011/12 No. of pumping stations	*590*
Stations removed	-7
Stations added	16
2012/13 No. of pumping stations	**599**

The confidence grade remains at B2.

E6.23 Total capacity of pumping stations

The total capacity of pumping stations is 2,417,467 m3/d.

The change recorded this year is attributed to the increase in asset numbers and improved data quality. The increase in data available has resulted in an increase in the capacity reported.
The confidence grade has remained at C4, reflecting the level of extrapolation used to derive the reported figures.

E6.24 Total capacity of booster pumping stations

The total capacity of booster pumping stations increased by 101.1 kW to 42,634.5 kW.

Our methodology for determining the design capacity (in kW) of stations remains unchanged.

The confidence grade remains at C3.

E6.25 Average pumping head

Average pumping head is reported as 31.73m this year. This reflects an increase of 0.75m on the previous year.

As limited new flow and pressure data is available, the methodology used was to update last year's figures by calculating the change to the "Work Done" (m^4) at regional level based on the proportional change to DI. This figure was then divided by the Regional DI to obtain the Regional Pumping Head, which was then aggregated.

Pumping head data

We note that due to data limitations our confidence grade has remained at C4. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

E6.26-27 Service Reservoirs

The total number of service reservoirs decreased by 13 to 1,363. During the year 10 new service reservoirs were commissioned. The changes are generally the result of operational revisions across the network.

The total capacity of service reservoirs decreased by 152.16 Ml to 3,967.8 Ml. This is mainly due to improvement in data quality and the result of operational revisions across the network.

The confidence grades remain at B2.

E6.28-29 Water Towers

The total number of water towers remains unchanged at 19

The total capacity of water towers remains unchanged at 29.7 Ml

The confidence grades remain at B2.

Table E7 Wastewater Explanatory Factors - Sewerage & Sewage treatment

E7.1 Annual average resident connected population

The annual average resident connected population increased by 16,591 to 4,821,315.

The confidence grade remains at B2.

E7.2 Annual average non-resident connected population

The annual average non-resident connected population increased by 883 to 69,852.

As with previous years, tourist population has been determined on the basis of average bed spaces multiplied by an average occupancy factor. Average occupancy rates are taken from VisitScotland's latest available Tourism in Scotland report.

The confidence grade remains at C4.

E7.3 Volume of sewage collected (daily average)

The daily average volume of sewage collected decreased by 117.2 Ml/d to 2,978.1 Ml/d. This increase was as the result of less rainfall during the reporting year and an update of the Dry Weather Flow factor giving a slightly reduced value.

The average daily volume collected has been calculated as the flow which arrives in a public sewer (of any type) from any source e.g. rainfall, infiltration, domestic use, industrial use, tidal flows and connected watercourses. The approach used is the same as that in previous years and has been applied consistently across the country. It uses data sets for rainfall, connected properties and sewered areas consistent with the wastewater element of the Annual Return.

The flow has been calculated in two parts; the dry weather flow and the storm flow.

Dry Weather Flow: A factor has been established that relates the number of connected properties to the amount of sewer flow in periods without rainfall. To establish this figure a number of recordings of flows with a known connected population were analysed to establish a range of flow per connected population. These factors were averaged and applied to all sewered areas to establish a total dry weather flow contribution per sewered area.

Storm Flow: The storm flow element was calculated by using existing sewer models to establish a relationship between rainfall depth, area of the sewered area and the amount of run-off generated. A selection of models was used and an average value of run-off per millimetre rainfall per hectare of sewered area was established. This was then applied to each sewered area to establish a total storm flow contribution per sewered area.

The total sewage collected was calculated (dry weather plus storm flows) for each sewered area and a total for each operational region calculated.

This figure includes all flows that are collected by the wastewater network but does not necessarily relate to the flows that arrive at treatment sites as a proportion of flows will be discharged via overflows and other flows collected by storm sewers will be discharged without treatment.

The confidence grade remains at C4.

E7.4 Total connected properties

The total number of connected properties figure increased by 4,503 to 2,483,063.

This rise reflects the increase in properties connected to the wastewater network as reported in A1.21.

E7.5 Area of sewerage district

The area of sewerage district has remained at 79,796km^2, the same as last year.

E7.6 Drained area

The drained area has increased slightly by 10 km^2 to 1,908 km^2. This rise is as a result of both the addition of new development and ongoing verification of the sewered areas in our corporate GIS.
The confidence grade remains at A2 as the data comes directly from our corporate GIS.

E7.7 Annual precipitation

During the year annual precipitation was 1,113 mm, which is 117 mm lower than last year.

We have again used radar rainfall data from the Met Office as the source data for this line. This gives rainfall intensities at five minute intervals using 1km grid spacing.

E7.8 Total length of sewer

In 2013-14 the length of sewers (excluding laterals) increased by 162km. This is split 58km of combined sewer, 47km of storm sewer 30.2km of rising mains and 26.8km of other sewer. The length of sewer laterals reduced by 88km

As a result the total length of sewers increased by a net 74km.

The information comprises our GIS inventory (33,634km) and a statistical calculation of lateral sewer length from unit length connections by dwelling (16,432km).

The confidence grade remains at C4.

E7.9 Total length of lateral sewer

The total length of lateral sewer has decreased by 88km to 16,432km. The calculation used is based on the number of properties connected to the wastewater network (connected properties).

These are supported by a proximity calculation which allocates the Ordnance Survey Address Point References (OSAPRs) located within 70m of the wastewater network. This is the same methodology as used in previous returns. CACI house type proportions in each operational region are also used as part of this calculation.

New data from our corporate GIS, on properties having sewers within 3 metres, has refined the lateral sewer calculation, increasing the rise in inventory due to the refinement of the number of properties connected to the wastewater network.

Unit lengths of lateral sewer are derived from a 2004 survey and checked for validity in 2014 by a GIS desktop study. The figures use dwellings/premises numbers rather than Ordnance Survey property seed points. The statistical sample size is not, however, large enough for the allocation of a high confidence grade.

E7.10 Length of combined sewer

The length of combined sewer has increased by 58km to 17,420km.

As modern sewerage systems are constructed with separate foul and storm sewers for new builds, any rise in length of combined sewer results from legacy record data being added to the corporate system and any outfall pipe construction.

The figure is derived from a record inventory with known gaps in asset stock; however sewer usage is populated to high levels. No off-inventory allowance is made for combined sewers.

The confidence grade remains at B2.

E7.11 Length of separate stormwater sewer

The length of separate storm sewer has increased by 47km to 7994km. This increase is due to the construction of separate foul and storm sewers for new builds.

E7.12 Length of sewer >1,000mm diameter

The length of sewer greater than 1000mm diameter increased by 31km to 776km. The continuous asset recording from our capital investment programme is resulting in a consistent rise in this figure.

The confidence grade remains at B2.

E7.13 Length of critical sewer

The length of critical sewer has decreased by 12km to 10,877km.

The figure is derived from analysis of a record inventory with known gaps in asset stock.

The classification of critical sewers uses the WRc methodology for asset size, material, depth and proximity to particular features.

The confidence grade remains at B3.

E7.14 Sewer Collapses

Concerns were expressed during last year's audit on the reporting of collapses. It was the auditor's opinion that the methodology used may have resulted in non-collapses being recorded as a collapse. The methodology used looked at incidents in Promise where a Choke Form had been completed, with the reason shown as "collapse", with a work order raised against it.
This year's methodology now looks at incidents in Promise where a Choke Form has been completed with "collapse" as the reason and a work order was raised for a standard job consistent with a sewer collapse. This has reduced the number to 124 from the 305 reported last year. Of the work orders raised none were against a sewer pumping station so zero has been returned for number of rising main failures.

E7.15-19 Sewerage Costs

Sewerage E7.19

	Total
Functional expenditure:	£m
2013/14	41.626
2012/13	42.337
Variance	**+0.711**

Sewerage costs decreased by £0.7m (1.7%) from 2012/13. This is analysed as follows:

- Employment costs remained stable at £13.7m with the reclassification of customer contact costs as customer services of £0.9m; offset by more in house choke clearance of £0.5m; and pay progression increase of £0.3m;
- £0.4m (5.5%) increase in power costs due mainly to increase in consumption and price of £0.4m; and additional costs resulting from capital investment of £0.2m;
- £1.0m (14.6%) decrease in hired and contracted costs mainly due to reduction in provision for network intervention activity as a result of contractual arrangements of £1.2m; and reduction in sewer repairs of £0.2m; partly offset by additional costs resulting from capital investment of £0.2m;
- Materials and consumables remained stable at £0.7m;

- £0.1m (7.4%) decrease in SEPA charges with the inflationary increase of 2.0% offset by individual consent changes;
- £0.1m (8.7%) decrease in other direct costs due to a decrease in insurance claim costs of £0.2m; and
- £0.2m (1.4%) increase in general and support costs.

Sewerage costs are analysed by region:

	North	East	South	West	Direct	General and Support	Total
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2013/14	3.963	8.295	8.233	10.147	**30.638**	10.988	**41.626**
2012/13	4.096	8.536	8.181	10.687	**31.500**	10.837	**42.337**
Variance	**+0.133**	**+0.241**	**(0.052)**	**+0.540**	**+0.862**	**(0.151)**	**+0.711**

E7.20-29 Pumping Stations

E7.20 Total number of pumping stations

The total number of pumping stations has increased by 44 to 2,156.

A pumping station is defined as an individual site (i.e. not an individual pump). It includes foul, combined and stormwater pumping stations situated at treatment works but excludes inter-stage pumping.

The confidence grade remains at B3.

E7.21 Total capacity of pumping stations (m^3/d)

The total capacity of pumping stations increased by 133,562 m^3/d to 12,636,951 m^3/d.

This figure is based on extrapolated corporate data as not all stations have a design capacity in m^3/d recorded in the corporate asset inventory.

The confidence grade remains at C4, reflecting the level of extrapolation used to derive the figure.

E7.22 Total capacity of pumping stations (kW)

The total capacity of pumping stations increased by 1,139 kW to 77,807 kW.

Our methodology for determining the design capacity (in kW) of stations is the same as last year, therefore the increase is due to revisions to the assets.

The confidence grade remains at C4.

E7.23 Average pumping head

The average pumping head is reported at 30.9m this year representing an increase of 0.8m compared with the previous year. This figure has been calculated by additions, deletions and corrections to the pumping data contained in the historic AR09 spreadsheet.

We note that due to data limitations our confidence grade has remained at C5. We currently have a limited dataset from which we extrapolate an overall pumping head value across the whole of Scottish Water. We acknowledge that further work is required to improve the quality of this data.

E7.24 Total number of combined pumping stations

The total number of combined pumping stations has increased by 14 to 1,348.

The confidence grade remains at B3.

E7.25 Total capacity of combined pumping stations

The total capacity of combined pumping stations increased by 106,275 m^3/d to 10,296,568 m^3/d.

The change recorded this year is mainly attributed to the inclusion of new sites containing large pumps.

The confidence grade has remained at C4, reflecting the level of extrapolation used to derive the reported figures.

E7.26 Total number of stormwater pumping stations

The total number of stormwater pumping stations remains unchanged at 36.

The confidence grade remains at B3.

E7.27 Total capacity of stormwater pumping stations

The total capacity of stormwater pumping stations decreased by 3,607 m^3/d to 267,111 m^3/d.

The change recorded this year is attributed to a net decrease of capacity across the regions.

The confidence grade remains at C4.

E7.28 Number of combined sewer overflows

The number of combined sewer overflows (CSOs) decreased by 4 to 3,149. The unsatisfactory intermittent discharge initiatives discovered of previously unrecorded CSOs discovered, but this was offset by abandonments and errors in the source data found during studies. The confidence grade remains at A3.

E7.29 Number of combined sewer overflows (screened)

The reported number of combined sewer overflows (CSOs) with screening in place increased by 33 to 988. Screened CSOs constitute 31.4% of the total number of CSOs reported in E7.28. The increase is primarily due to capital investment in new CSOs and screens from the UID programme. The confidence grade remains at A3.

E7.30 Number of sewage treatment works

The number of reported sewage treatment works (WWTW) decreased by 45 to 1,868.
21 WWTW were removed because a new network has been installed at Dunoon replacing a number of Septic Tanks and Unscreened Sewer Outfalls in the area. The remainder of the changes are due to data cleansing as part of an exercise to move from Sewer Catchment Areas to Drainage Operational Areas, and other natural changes during the year.

The confidence grade remains at A3.

E7.31 Total load

The total load increased by 6,361 kg BOD/day to 229,105 kg BOD/day. This reduction reflects the net change in the constituent components of the works loads. Due to rounding the individual differences may not add up to the total difference.

The load consists of the following constituents:

- Population
- Tourist
- Non-domestic load
- Trade effluent
- Imported private septic tanks
- Imported public septic tanks
- Imported other loads
- Imported WWTW sludge
- Imported WTW sludge
- Sludge return liquors

Population (70.42% of total load)
The population load increased by 638 kg BOD/day. The increase in population load is a reflection of the increase in population reported in line E7.1.

Tourist (1.23% of total load)
The tourist load increased by 170 kg BOD/day. This increase is connected to the change in the source data as described in the commentary for line E7.2.

Non-domestic load (9.87% of total load)
The non-domestic load decreased by 925 kg BOD/day. Due to the opening of the water industry retail market to competition in April 2008, the source of this data is now the Central Market Agency.

Trade effluent (14.82% of total load)
The trade effluent load increased by 4,315 kg BOD/day. Due to the opening of the water industry retail market to competition in April 2008, the source of this data is now the Central Market Agency.

Imported private septic tanks (0.11% of total load)
The imported private septic tanks load increased by 10 kg BOD/day.

Imported public septic tanks (0.09% of total load)
The imported public septic tanks load decreased by 44 kg BOD/day.

Imported other loads (0.85% of total load)

The imported other load increased by 160 kg BOD/day.

Imported WWTW sludge (2.22% of total load)
The imported WWTW sludge load increased by 2,446kg BOD/day.

Imported WTW sludge (0.26% of total load)
The imported WTW sludge load decreased by 383 kg BOD/day.

Sludge return liquors (0.13% of total load)
The sludge return liquor load decreased by 24 kg BOD/day.

The confidence grade remains at B3.

E7.32-36 Sewage Treatment Costs

Sewage Treatment E7.36

	Total
Functional expenditure:	£m
2013/14	46.627
2012/13	43.730
Variance	**(2.897)**

Sewage treatment costs increased by £2.9m (6.6%) from 2012/13. This is analysed as follows:

- Employment costs remained stable at £10.4m including pay progression increase of £0.2m;
- £1.7m (12.7%) increase in power costs mainly due to increase in consumption and price of £1.6m; carbon tax increase of £0.1m; and additional costs resulting from capital investment of £0.3m;
- £0.5m (28.0%) increase in hired and contracted costs mainly due to costs for repairs to redundant assets of £0.3m; and additional operating costs as a result of capital investment of £0.2m;
- £0.6m (45.2%) increase in materials and consumables mainly due to increased E&M planned maintenance of £0.3m; and additional operating costs as a result of capital investment of £0.2m;
- £0.1m (2.2%) increase in SEPA costs due to inflationary increase of 2.0%;
- £0.1m (5.1%) increase in other direct costs; and
- £0.1m (1.3%) decrease in general and support costs.

Sewage treatment costs are analysed by region:

	North	**East**	**South**	**West**	**Direct**	General and Support	**Total**
Functional expenditure:	£m	£m	£m	£m	£m	£m	£m
2013/14	5.767	8.851	12.213	10.674	**37.505**	9.122	**46.627**
2012/13	5.723	8.371	10.811	9.585	**34.490**	9.240	**43.730**
Variance	**(0.044)**	**(0.480)**	**(1.402)**	**(1.089)**	**(3.015)**	**+0.118**	**(2.897)**

Confidence grades on Table E7 are consistent with grades in then general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset or zone, hence the A2 confidence grade.
Scottish Water has slightly lower confidence levels on Network cost analysis than treatment cost analysis. This is due to lower levels of direct labour capture on Networks.

Table E8 Wastewater Explanatory Factors - Sewage Treatment Works

E8.1-8 Sewage treatment works size bands

The total number of sewage treatment works (WWTW) decreased by 45 to 1,868. Changes to the number of WWTW this year are broken down by size band and treatment category in the tables below:

Size Band	2012/13	2013/14	Net Change
0	1,184	1,141	-43
1	226	223	-3
2	139	136	-3
3	181	186	5
4	123	123	0
5	38	36	-2
6	22	23	1
Total	1,913	1,868	-45

Treatment Category	2012/13	2013/14	Net Change
Septic Tanks	1,206	1,182	-24
Primary	44	43	-1
Sec Activated Sludge	180	180	0
Sec Biological	292	293	1
Tertiary A1	33	33	0
Tertiary A2	19	19	0
Tertiary B1	62	61	-1
Tertiary B2	15	15	0
Sea Preliminary	10	10	0
Sea Screened	4	5	1
Sea Unscreened	48	27	-21
Total	1,913	1,868	-45

The confidence grade remains at B3.

E8.9 Small sewage treatment works with ammonia consent 5-10 mg/l

The number of small sewage treatment works with ammonia consent 5-10 mg/l has increased by 2 to 52. The confidence grade remains at A1.

E8.10 Small sewage treatment works with ammonia consent <= 5 mg/l

The number of small sewage treatment works with ammonia consent <= 5 mg/l has decreased by 1 to 54. The confidence grade remains at A1.

E8.11-18 Average Daily Loads

The total average daily load, excluding septic tanks, increased by 7,082 kg BOD/day to 223,368 kg BOD/day.

Changes to the total average daily load received this year are broken down by size band and treatment category in the below tables:

Size Band	2012/13	2013/14	Net Change
	Excluding septic tanks		
0	396	439	42
1	1,085	1,122	37
2	1,884	1,821	-63
3	10,219	10,420	201
4	36,055	36,202	147
5	33,533	31,310	-2,223
6	133,115	142,055	8,940
Total	**216,286**	**223,368**	**7,082**

Treatment Category	2012/13	2013/14	Net Change
Septic Tanks	6,458	5,738	-720
Primary	4,165	3,892	-272
Sec Activated Sludge	145,466	153,787	8,321
Sec Biological	22,172	22,343	171
Tertiary A1	23,817	23,538	-279
Tertiary A2	4,433	4,508	75
Tertiary B1	8,134	10,839	2,705
Tertiary B2	1,528	1,546	18
Sea Preliminary	1,882	1,915	33
Sea Screened	515	605	89
Sea Unscreened	4,173	396	-3,777
Total	222,744	229,105	6,361

The confidence grade remains at B3.

E8.19 Small sewage treatment works with ammonia consent 5-10 mg/l

The total average daily load at small sewage treatment works with ammonia consent 5-10 mg/l increased by 1,237 kg BOD/day to 8,702 kg BOD/day.

The confidence grade remains at B3.

E8.20 Small sewage treatment works with ammonia consent <= 5 mg/l

The total average daily load at small sewage treatment works with ammonia consent <= 5 mg/l increased by 1,396 kg BOD/day to 13,779 kg BOD/day.

The confidence grade remains at B3.

E8.21-30 Compliance

The percentage compliance has been calculated on the basis of SEPA results. Our methodology for calculating compliance is the same as last year and, in the case of two-tier consents, all failures have been counted, not just upper-tier failures. WWTW that are not sampled are not included in the averaging process for individual treatment categories and size bands. The sampling period is the financial year 2013/14.

The number of failing wastewater treatment works is being reported as 1 for 2013/14.

Where the cells in this section are listed as 0 and AX confidence grade, this means that there was no WWTW in that treatment category and size band thus there has been no sampling.

The average compliance has been maintained or improved at all WWTW treatment categories with the exception of Secondary Biological.

The confidence grade remains at B2.

E8.29 Small sewage treatment works with ammonia consent 5-10 mg/l

The compliance at small sewage treatment works with ammonia consent 5-10 mg/l has been maintained or improved at all treatment categories.

E8.30 Small sewage treatment works with ammonia consent <= 5 mg/l

The compliance at small sewage treatment works with ammonia consent <= 5 mg/l has been maintained or improved at all treatment categories.

E8.31-42 Costs

Overall movements are explained in table Sewage Treatment E7.36 earlier in this commentary. The costs of treating and disposing of sludge are contained within Table E10 Sludge Treatment and Disposal.

Analysis of sewage treatment costs by size band:

Changes to the numbers of STW by process type have arisen as a result of operational changes and process re-classifications in STW during 2013/14. Re-stating 2012/13 figures on like-for-like basis shows the following variations:

	Septic tanks	**Primary**	Secondary	**Tertiary**	**Sea Outfalls**	**Direct**	General and Support	**Total**
Total treatment works	£m	£m	£m	£m	£m	£m	£m	£m
2013/14	2.933	1.131	25.982	7.135	0.324	**37.505**	9.122	**46.627**
2012/13	2.897	1.060	23.553	6.633	0.347	**34.490**	9.240	**43.730**
Variance	**(0.036)**	**(0.071)**	**(2.429)**	**(0.502)**	**+0.023**	**(3.015)**	**+0.118**	**(2.897)**

Movements in individual works explain the increases and decreases by category. Some of the larger movements, which do not follow the profile of overall movements, are explained as follows:

- Cowie STW [West, Secondary Activated Sludge, Band 4] increased £0.1m, due to plant hire for operational issues;
- Keith STW [East, Secondary Activated Sludge, Band 4] decreased £0.1m, due to high estimated energy bills in prior year;
- Kirkconnel STW [South, Secondary Biological, Band 4] increased £0.1m, due to additional chemical spend for ongoing operational issues;
- Oban STW [North, Secondary Activated Sludge, Band 5] increased £0.1m following upgrades in prior year;

Costs which are directly attributable to treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, Ellipse timesheets or work orders. Of the £37.5m (E2.7) total direct wastewater treatment costs, £36.4m of costs or 97.2% (£43.2m less £8.2m sludge costs plus £1.4m terminal pumping) have been directly charged to assets in our corporate costing system.

Other costs have been allocated to Wastewater Treatment through ABM support activity allocation, e.g. stores based on number of issues, IT applications based on number of users, etc. Therefore, support costs are allocated on a resource consumed basis. However, many of these costs are not specific to an asset; they are generally attributable to an employee. It follows that the majority of these support costs should be allocated to the activities the employees have been doing.

Confidence grades on Table E8 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remains to be allocated to works by means other than direct capture.

Table E9 Large Sewage Treatment Works Information Database

E9.0a Name of operational area

The number of large non-PPP WWTW has increased by 2 to 23, this is because:

- an increase in both household and trade effluent has led to Bothwellbank being classified as a large works;
- an increase in trade effluent has led to Dunbar and Livingston being classified as large works. For Livingston the increase in trade effluent is significant. The primary cause is the use of a very high daily volume for all reconciliation runs done by CMA for P08-P12, which wasn't amended by the submission of further meter reads until April (outside the Annual Return report period). Using April's read the corrected load is 215T tBOD which is still a significant increase over last years 44T, however not enough to classify Livingston a Band 6 large sewage treatment works.
- an increase in Imported WWTW sludge has led to Galashiels being classified as a large works;
- a decrease in non-domestic means Bathgate is no longer classified as a large works; and
- corrections to its geographical boundary means Iron Mill Bay is no longer classified as a large works.

Large WWTW are defined as those that receive an average loading in excess of 1,500 kg BOD/day and is approximately equivalent to a population of 25,000.

E9.1 Population equivalent of total load received

The overall population equivalent of the total load received increased by 209,688 to 2,367,575.

Changes to the population equivalent of each large WWTW are detailed in the below table (due to rounding the total may not equal the sum of the individual values):

WWTW	2012/13	2013/14	Net Change	% Change	Classification change 2012/13
Allers	41,378	42,247	869	2.10%	
Alloa	45,597	49,442	3,845	8.43%	
Ardoch	60,802	59,818	-984	-1.62%	
Bathgate	25,869	24,681	-1,187	-4.59%	Not a large works
Bothwellbank	24,675	25,055	380	1.54%	New in 2013/14
Carbarns	47,786	46,611	-1,175	-2.46%	
Dalderse	88,873	94,435	5,562	6.26%	
Daldowie	270,337	270,439	102	0.04%	
Dalmarnock	262,696	397,600	134,904	51.35%	
Dunbar	23,571	25,499	1,928	8.18%	New in 2013/14
Dunfermline	33,598	78,009	44,411	132.18%	
Dunnswood	31,253	31,070	-182	-0.58%	
Erskine	77,017	75,970	-1,046	-1.36%	
Galashiels	22,937	33,085	10,148	44.24%	New in 2013/14
Hamilton	57,114	63,174	6,060	10.61%	
Iron Mill Bay	60,685	19,385	-41,300	-68.06%	Not a large works
Kinneil Kerse	50,136	61,358	11,222	22.38%	
Kirkcaldy	64,132	62,642	-1,491	-2.32%	
Laighpark (Paisley)	144,289	111,344	-32,945	-22.83%	
Livingston	4,593	39,507	34,914	760.21%	New in 2013/14
Perth	97,342	103,248	5,906	6.07%	
Philipshill	57,822	60,085	2,263	3.91%	
Shieldhall	536,798	519,054	-17,745	-3.31%	
Stirling	72,484	71,285	-1,199	-1.65%	
Troqueer	31,879	46,597	14,718	46.17%	
	2,233,663	2,411,641	177,978		

E9.2-7 Compliance

Consent data was taken from our corporate consents database. The most onerous of CAR or UWWT parameter was reported.

Confidence grades remain at A1, reflecting the fact that the data is obtained directly from our corporate consents database.

E9.2 Suspended solids content

All consent standards remained the same.

E9.3 BOD consent

There have been no changes to the BOD consent standards.

E9.4 COD consent

There have been no changes to the COD consent standards.

E9.5 Ammonia consent

Alloa: consent increased from 0mg/l to 30mg/l previously misreported.
Carbarns: consent decreased from 10mg/l to 2mg/l due to tightened SR10 licence for Q&S.

E9.6 Phosphate consent

No phosphate consent standards have been set for any of the WWTWs.

E9.7 Compliance with effluent consent standard

We have used SEPA data from January 2013 to December 2013 for this line. For WWTW with two tier consents we have taken exceeding the lower tier as being a non-compliant sample.

Allers, Alloa, Carbarns, Daldowie, Dalmarnock, Dunnswood, Hamilton, Kinneil Kerse, Philipshill, Shieldhall and Stirling WWTWs marginally increased their compliance

Compliance at Ardoch, Dunfermline, Erskine and Laighpark (Paisley) WWTWs show a marginal decrease.

E9.8-14 Treatment Works Category

This information is held in the corporate asset inventory. We are reporting 23 large WWTWs in Table E9, this is in line with E8.7.

E9.15-21 Works cost

Analysis of functional costs for large sewage treatment works:

	2013/14	2012/13	Variance
	£m	£m	£m
Bathgate	n/a	0.160	+0.160
Daldowie	0.841	0.832	(0.009)
Dunbar	0.308	n/a	(0.308)
Galashiels	0.071	n/a	(0.071)
Livingston	0.156	n/a	(0.156)
Tertiary treatment	**1.376**	**0.992**	**(0.384)**
Allers	0.288	0.205	(0.083)
Alloa	0.421	0.307	(0.114)
Ardoch	0.524	0.349	(0.175)
Bothwellbank	0.186	n/a	(0.186)
Carbarns	0.259	0.219	(0.040)
Dalderse	0.399	0.314	(0.085)
Dalmarnock	0.959	0.941	(0.018)
Dunfermline	0.173	0.139	(0.034)
Dunnswood	0.225	0.245	+0.020
Erskine	0.483	0.372	(0.111)
Hamilton	0.445	0.386	(0.059)
Iron Mill Bay	n/a	0.165	+0.165
Kinneil Kerse	0.419	0.360	(0.059)
Kirkcaldy	0.525	0.485	(0.040)
Laighpark (Paisley)	1.034	0.891	(0.143)
Perth	0.422	0.284	(0.138)
Philipshill	0.678	0.533	(0.145)
Shieldhall	2.024	1.977	(0.047)
Stirling	0.421	0.232	(0.189)
Troqueer	0.283	0.165	(0.118)
Secondary treatment	**10.167**	**8.569**	**(1.598)**
Direct large treatment works	**11.543**	**9.561**	**(1.982)**
General and Support	1.474	1.384	(0.090)
Total large treatment works	**13.017**	**10.945**	**(2.072)**

The number of treatment plants classified as large works has increased by 2 from 2012/13, with Bothwellbank, Dunbar, Galashiels and Livingston being classified from small to large, and Bathgate and Iron Mill Bay being removed from the large works list.

- Ardoch STW [South, Secondary Activated Sludge, Band 6] has increased £0.2m, due to ongoing operational issues;
- Bathgate STW [South, Tertiary B1, Band 5] has moved from large tertiary to small tertiary £0.2m;
- Bothwellbank STW [South, Secondary Activated Sludge, Band 6] has moved from small secondary to large secondary £0.2m;
- Dunbar STW [South, Tertiary A2, Band 6] has moved from small tertiary to large tertiary £0.3m;

- Dunnswood STW [South, Secondary Activated Sludge, Band 6] remained unchanged with inflationary increases offset by reductions following operational issues in prior year;
- Galashiels STW [South, Tertiary B1, Band 6] has moved from small tertiary to large tertiary £0.1m;
- Iron Mill Bay STW [East, Secondary Activated Sludge, Band 5] has moved from large secondary to small secondary £0.2m;
- Livingston STW [South, Tertiary B1, Band 6] has moved from small tertiary to large tertiary £0.2m;
- Stirling STW [West, Secondary Activated Sludge, Band 6] has increased by £0.2m, due to additional costs to keep works compliant during dry weather;
- Troqueer STW [South, Secondary Activated Sludge, Band 6] has increased by £0.1m, due to ongoing operational issues.

Confidence grades on Table E9 are consistent with grades in the general E table commentary.

Direct costs are predominantly captured in the core corporate financial system, with labour costing feeds from the core corporate works management system. A high proportion of direct costs are captured by asset, hence the A2 confidence grade. A smaller proportion of costs – mainly general and support costs – remain to be allocated to works by means other than direct capture. Following analysis of these residual general and support costs, Scottish Water feels that it now has a more appropriate allocation basis to asset.

Estimated terminal pumping station costs are graded slightly lower in confidence than treatment costs, as terminal pumps (as defined) sit in networks or are costed as part of the treatment works.

Table E10 Wastewater Explanatory Factors - Sludge Treatment and Disposal

E10.1 Resident population served

The total resident population served increased by 10,213 to 2,658,850. This change is consistent with the rise in population reported elsewhere in this submission.

We again report the population treated at Scottish Water operated WWTW that have their sludge treated at PPP sludge treatment centres. This accounts for the anomaly in reporting a population reported against the ‘incineration’ and ‘other’ routes but no Scottish Water sludge volumes being recycled through these routes. Some of this was used to carry out trials of recycling of hydrolysed sludge in England and the rest was used for industrial crop.

The confidence grade remains at C3.

E10.2 Amount of sewage sludge

The reported mass of sewage sludge has increased slightly to 19.859 ttds. As with AR13 all the SW figures reported were taken direct from the Gemini system.

A decrease has been noted in the volume of enhanced sludge down 3.371 ttds. The largest decrease was at Galashiels where the majority of cake produced went from enhanced to conventional. This is because the digester came back on-line at Galashiels allowing conventional re-cycling.

There was an increase in conventional sludge up 1.429 ttds. Again the largest increase was from Galashiels where the digester came back on-line.

There was an increase in land reclamation sludge up 1.819 ttds. The largest increase was from Stirling which had increased digester performance.

A slight increase of 0.052 ttds was recorded in sludge taken to landfill in 2013/14. Only Lerwick (Shetland) uses this re-cycling route and the slight increase was due to previous year increased tanker imports.

No significant change has occurred and the confidence grade remains the same as the prior year.

E10.3-9 Sludge Treatment and Disposal Costs

Sludge Treatment E10.9

	Total
Functional expenditure:	£m
2013/14	13.156
2012/13	12.281
Variance	**(0.875)**

Sludge treatment costs have increased by £0.9m (7.1%) from 2012/13. This is analysed as follows:

- £0.1m (4.7%) increase in employment costs mainly due to pay progression increase of £0.1m;
- £0.1m (2.7%) increase in power costs mainly due to increase in consumption and price of £0.1m;
- £0.8m (19.1%) increase in hired and contracted costs mainly due to changes in sludge disposal routes £0.3m; and repairs to Glasgow sludge pipeline £0.4m; and
- £0.1m (8.3%) decrease in materials and consumables due to reduction is sludge treatment chemical costs due to reduced volumes.

Scottish Water incurs costs associated with the transportation of sludge from its own sewage treatment works to PPP sludge treatment centres (£2.3m). These costs have been reported within E3a.20 with the corresponding sludge loads in reported in E3.

The allocation of sludge treatment and disposal costs by disposal route relies on robust sludge movement data linked to financial data. Scottish Water links sludge movement data from the Gemini waste management system to ABM costs to produce E10 cost analysis.

Analysis of sludge treatment costs by disposal route:

	2013/14 £m	**2012/13** £m	Variance £m
Farmland:			
Untreated	0.000	0.000	+0.000
Conventional	2.403	2.280	(0.123)
Advanced	7.555	8.257	+0.702
Incineration	0.000	0.000	+0.000
Landfill	0.868	0.714	(0.154)
Composted	0.000	0.000	+0.000
Land reclamation	2.330	1.030	(1.300)
Other	0.000	0.000	+0.000
Total	**13.156**	**12.281**	**(0.875)**

The change in costs by disposal route has been affected by the following main factors:

- Galashiels process reverted following temporary change in 2012/13 (temporary use of lime while digester was refurbished) changing disposal route back to Farmland Conventional (£0.6m) from Farmland Advanced (£0.4m) and Land Reclamation (£0.1m);
- Landfill increased at Rovahead (£0.1m) due to increased sludge imports;
- Increased volume was available for Land Reclamation in 2013/14 at a number of sites, mainly Cupar £0.2m (was Farmland Advanced), Dalderse £0.3m (was Farmland Conventional), Kirkcaldy £0.3m (was Farmland Advanced), St Andrews £0.2m (was Farmland Advanced), and Stirling £0.7m (was Farmland Conventional), although less was available at Dunfermline £0.2m (now Farmland Advanced);

Confidence Grades – Sludge cost analysis by ultimate disposal route requires analysis of all sludge treatment, tankering and disposal costs by works, linked to intermediate works (where applicable) and ultimate disposal route. Certain costs are clearly captured by works with identified disposal route. However, certain costs are not fully captured directly against sludge. The main areas of difficulty are inter-site sludge tankering and sludge treatment / conditioning at dual function works (sludge / wastewater treatment). Table E10 is completed on the basis of a combination of: ABM analysis, direct cost capture by asset, and Scottish Water sludge model analysis. Confidence grades on Table E10 are lower (B2) than other E Table cost analysis due to these reasons.

G Tables – Investment Monitoring

Tables G1 – 2: General Comments

Tables G1 – G2 present a summary of Scottish Water's investment programmes for Q&SIIIb, Q&SII & 3a (completion programme) and Q&S IV early start. The investment costs and outputs reported in these tables reflect the position as reported in the Q4 2013/14 Capital Investment Return (CIR).

Elements reported include the pre 2010 expenditure, the actual expenditures in 2010-14 and forecasts to Post March 2015. Scottish Water delivered £475.2 million of investment in 2013/14. This comprised £9.2m of investment in the completion programme, and £466.0m in the Q&SIIIb programme. Table G1 reports the total investment in the year.

Total forecast investment to March 2015 is £2,398.0m comprising £195.4m for completion programme (Q&SII & Q&SIIIa), £2,162.9m for Q&SIIIb and £39.7m for Q&SIV early start. Net capital investment to March 2015, excluding grants and contributions, is £2,359.5m. Unpromoted capital maintenance has been proportioned across lines G1.1 to G1.5. Programme risk, rebates, contingencies and SWS1/SWS2 contractual payments/recoveries have been allocated to line G1.16. The £88.1m 3b plus programme has also been allocated to G1.16.

The Q&S2 Completion Programme was completed in 2013/14 and 1 project remains in the Q&S3a Completion Programme. Scottish Water has delivered 312 projects out of the 313 projects. The last project at Killylour will be completed in 2014/15.

Capital maintenance investment accounts for 60% of the investment in 2013/14.

The table below reflects the inflation assumptions used within the CIR. Inflation assumptions have been updated to reflect the 2013-14 Delivery Plan.

Inflation Assumptions

	2007 /08	2008 /09	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15
Overall COPI Assumption	0.0%	2.4%	-3.1%	-2.8%	2.4%	3.1%	2.7%	2.7%
COPI Deflation Risk Assumption	0.0%	2.4%	-3.1%	-2.8%	2.4%	3.1%	2.7%	2.7%

Table G1 Summary - Investment

The total gross capital investment shown on table G1 is £2,686.0m. This includes pre 2010 investment and all forecast investment after March 2015, which will complete the SR10 programme. Maintenance and strategic growth forecast after March 2015 has been excluded from G1 and is assumed to form part of the SR15 programme. Q&SIV Start Early expenditure after March 15 is not shown in table G1 as this will also form part of the SR15 programme.

Table G1 includes risk provision of £19.5m for completion of the programme, approximately 2.5% of the remaining investment.

There is an adjustment for OMG180 of -£31.4m. The OMG180 provision has been oversubscribed, and OMG has agreed it must outturn within the financing (£233m) that is available. OMG180 funded programmes and projects, total £264.4m and the adjustment brings the programme to £233.0m, pending identification of the projects to be deferred.

Table G1 excludes investment for the two PFI projects: Dalmuir and Seafield. The expected cost of PFI is £36.4m. Combining PFI with the forecast cost of the programme in G1 gives a forecast total investment of £2,722.4m.

Programme Financing

The SR10 Programme is forecast to be delivered for the available financing, £2,722.4m. The components of the programme financing are shown in the table below:

Programme Funding (£m)	
Funding For Capital Programme	2,669.0
Receipts	24.9
Total Regulatory	**2,693.9**
3rd Party Contributions	28.5
Total Regulatory Funding and 3rd Party	**2,722.4**

G1.1-1.6 Q&SIIIb Capital Maintenance

Projects containing Capital Maintenance drivers are captured in these lines. In 2013/14 expenditure of £285.0m was made against Q&SIIIb Capital Maintenance; the total forecast to complete the programme is currently predicted to be £1,244.6m.

In line with our SR15 Business Plan, we are endeavouring to manage the capital programme within £2,722m and, as part of that, capital maintenance within £1,244m. The tables submitted reflect these overall totals. However an element of capital maintenance is response driven and hence the outturn may be higher than the forecast for 2014/15.

G1.7–1.11 Q&SIIIb Growth Investment

Projects containing Growth drivers are captured in these lines. In 2013/14 expenditure of £40.6m was made against Q&SIIIb Growth; the total forecast to complete the growth element of the programme is currently predicted to be £185.7m. £1.7m is forecast in the tables post March 2015.

G1.12-1.17 Q&SIIIb Enhancement Expenditure

Projects containing enhancement drivers are captured in these lines. In 2013/14 expenditure of £134.2m was made against Q&SIIIb enhancements; the total forecast to complete the enhancements is currently predicted to be £1,050.8m including post March 2015 investment and risks.

G1.18: Q&SIIIb Enhancements – OMG Unallocated Enhancement Expenditure

There is an adjustment for OMG180 of -£31.4m. The OMG180 provision has been oversubscribed, and OMG has agreed it must outturn within the financing (£233m) that is available. OMG180 funded programmes and projects, total £264.4m and the adjustment brings the programme to £233.0m, pending identification of the projects to be deferred.

G1.19 – G1.21 Q&SII & IIIa Completion Expenditure

Projects from the completion programme are captured in these lines. In 2013/14 a total expenditure of £9.2m was made against this programme with the majority of spend being on the Q&SIIIa programme and £16k on the Q&S2 programme. The Completion programme is predicted to outturn at £196.5m with a forecast of £47.2m on Q&SII and £149.3m on Q&SIIIa.

G1.22: Q&SIV Early Start.

Projects containing Q&SIV Early start drivers are captured in these lines. In 2013/14 expenditure of £6.3m was made against Q&SIV early start, with a total forecast spend of £39.7m within the SR10 period. The future costs are assumed to be financed from the Q&SIV programme.

G1.23 – G1.32: Total Additional Operating Expenditure

Additional operating expenditure is calculated through the analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth for future years. The value in the report year is based on the actual opex released as a consequence of the capital programme.

G1.33 – G1.38: Grants and Capital Contributions

The infrastructure charge income is reported as contribution against the Q&SIIIb programme. No future grants or contributions are reported as these are not confirmed.

G1.39 – G1.47: Expenditure Totals

These lines sum the figures provided in G1.1 to G1.38 and are automatically populated.

Table G2 Summary – Outputs

We have only commented where we have delivered outputs to March 2014 or if a programme is behind Delivery Plan.

G2.1- G2.4 Growth
We note that growth is driven by both quality projects and demand from developers. We note that we are starting to see a pickup in construction activity again.

G2.1 Strategic Capacity - Water Treatment

In 2013-14 no additional capacity was added. In total 30,165 p.e additional strategic capacity has been delivered.

G2.2 Strategic Capacity – Wastewater Treatment

In 2013-14 4,720 p.e additional capacity was added. In total 28,642 p.e additional strategic capacity has been delivered.

G2.3 Strategic Water Network Capacity

In 2013-14 no additional capacity was added in this report year associated with the income received from infrastructure charges. In total 22,045 p.e additional strategic capacity has been delivered, which is more than our Delivery Plan target. No additional capacity is forecast in either 2014/15 or beyond.

G2.5 – G2.21 Q&SIIIb Enhancements – Drinking Water Quality

G2.5 Number of Zones with reduced lead levels to meet the standard

In 2013-14 12 outputs were delivered. In total 61 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 3 outputs.

G2.6 Number of treatment works improved to meet drinking water quality standards

In 2013-14 1 output was delivered. In total 3 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to deliver 2 outputs during 2014/15, with 3 outputs remaining to be delivered beyond March 2015. The delivery of one of these outputs has been extended beyond March 2015 through agreed Technical Expression changes.

G2.7 Length of mains rehabilitated to improve drinking water quality

In 2013-14 667km of additional mains have been rehabilitated and passed the post installation testing requirements. In total 2,606 km of mains have been rehabilitated. We are aware of an emerging issue regarding the long term reliability of materials that have been used in 115km of this programme in Ayrshire. Until we are satisfied that we have a robust and enduring solution we are keeping under review the outputs claimed. We will not be claiming the associated OMD points (0.5 points) for the affected zones. We forecast to deliver 461km of additional mains during 2014/15, with 1,024km further after March 2015.

G2.10 Number of sites with increased physical security

In 2013-14 230 outputs were delivered. In total 606 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to deliver 136 outputs during 2014/15, with 25 outputs remaining to be delivered beyond March 2015.

G2.12 Number of WwTW with Backflow prevention devices installed.

In 2013-14 18 outputs were delivered. In total 267 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining output.

G2.13 Number of WTW receiving improved disinfection control

In 2013-14 4 outputs were delivered. In total 24 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to deliver 5 outputs during 2014/15, with 2 outputs remaining to be delivered beyond March 2015. The delivery of both of these outputs has been extended beyond March 2015 through agreed Technical Expression changes.

G2.15 Number of WTW with reduced cryptosporidium risk

In 2013-14 10 outputs were delivered. In total 22 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to deliver 16 outputs during 2014/15, with 8 outputs remaining to be delivered beyond March 2015. The delivery of 3 of these outputs has been extended beyond March 2015 through agreed Technical Expression changes.

G2.16 Number of raw water sampling points to comply with WFD

In 2013-14 130 outputs were delivered. In total 216 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 14 outputs.

G2.19 Number of opportunistic lead pipe replacements undertaken

In total 6 outputs have been delivered by March 2014.

G2.20 Number of customer requested lead pipe replacements undertaken

In total 612 outputs have been delivered by March 2014.

G2.21 Type B (customer requested) Raw Water Supplies provided with treatment

In 2013-14 20 outputs were delivered. In total 20 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 39 outputs.

G2.22 – G2.35 Q&SIIIb Enhancements – Environment

G2.22 Number of UIDs improved to meet new standard (exclude 7 stage)

In 2013-14 9 outputs were delivered. In total 22 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 2 outputs.

G2.23 Number of UIDs improved to meet new standard (under 7 stage)

In 2013-14 27 outputs were delivered. In total 71 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to deliver 66 outputs during 2014/15, with 76 outputs remaining to be delivered beyond March 2015. The 76 outputs delivering beyond March 2015 are part of the 7 stage process.

G2.24 Number of legislative requirements met through improved WwTW discharges

In 2013-14 9 outputs were delivered. In total 45 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to deliver 15 outputs during 2014/15, with 14 outputs remaining to be delivered beyond March 2015.

G2.26 Number of WwTW discharges improved to meet existing licence requirements

In 2013-14 3 outputs were delivered. In total 22 outputs have been delivered by March 2014, in line with our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 2 outputs.

G2.27 Number of WwPS improved to meet existing licence conditions

In 2013-14 3 outputs were delivered. In total 19 outputs have been delivered by March 2014, in line with our Delivery Plan target. 2 outputs (Gregory Place and Hillfoots) have since been removed from the Technical Expression and we forecast to deliver the final output of this programme in 2015

G2.28 Number of surface water systems upgraded

In 2013-14 3 outputs were delivered. In total 3 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 3 outputs.

G2.29 Number of dual manhole systems improved

In 2013-14 9 outputs were delivered. This programme is now complete. In total 11 outputs have been delivered by March 2014.

G2.30 Number of sludge treatment facilities improved to comply with safe sludge matrix

In 2013-14 1 output were delivered. This programme is now complete. In total 2 outputs have been delivered by March 2014.

G2.31 Number of WwTW brought into compliance with non-sanitary requirements

In 2013-14 36 outputs were delivered. In total 60 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 23 outputs.

G2.32 Number of wastewater network assets brought into compliance with non-sanitary requirements

In 2013-14 111 outputs were delivered. In total 189 outputs have been delivered by March 2014, more than our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 41 outputs.

G2.33 Number of environmental studies undertaken

In 2013-14 20 outputs were delivered. In total 112 outputs have been delivered by March 2014, in line with our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 2 outputs.

G2.35 Number of water resource zones with company level of service restored (7 stage)

In 2013-14 5 outputs were delivered. In total 9 outputs have been delivered by March 2014, less than our Delivery Plan target. We forecast to deliver 3 outputs during 2014/15, with 2 outputs remaining to be delivered beyond March 2015. The 2 outputs delivering beyond March 2015 are part of the 7 stage process.

G2.36 – G2.43 Q&SIIIb Enhancements – Customer Service

G2.36 number of WwTW where malodour is reduced

In 2013-14 1 output was delivered. This programme is now complete. In total 4 outputs have been delivered by March 2014.

G2.38 Number of properties removed from low pressure register

In 2013-14 190 properties were removed from the low pressure register. In total 2,533 properties have been removed by March 2014, more than our Delivery Plan target. The programme has now delivered the planned target however it is still on going to achieve additional customer benefits. We forecast to remove 8 properties during 2014/15, with 35 properties to be delivered beyond March 2015.

G2.39 Number of properties removed from the low pressure register (Exclusions)

In 2013-14 72 properties were removed from the low pressure register. In total 585 properties have been removed by March 2014, more than our Delivery Plan target. The programme has now delivered the planned target however it is still on going to achieve additional customer benefits. We forecast to remove 20 additional properties during 2015/16.

G2.40 Works associated with the Commonwealth Games

In 2013-14 36 outputs were delivered. This programme is now complete. In total 68 outputs have been delivered by March 2014, in line with our Delivery Plan target.

G2.41 Number of assets protected from flood risk

In 2013-14 8 outputs were delivered. In total 25 outputs have been delivered by March 2014, in line with our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining output.

G2.42 Number of models to support the flooding bill

In 2013-14 67 outputs were delivered. In total 67 outputs have been delivered by March 2014, in line with our Delivery Plan target. We forecast to complete this programme in 2014/15 with the delivery of the remaining 5 outputs.

G2.45 Renewable Power Generation Capacity Provided.

In 2013-14 an additional 1.5 GWh was delivered. In total 3.9 GWh have been delivered by March 2014, more than our Delivery Plan target. We remain on track to deliver 25GWh by March 2015 through a diverse portfolio of renewables.

G2.54 – G2.55 Q&SIIIa & Q&SII Delivery Projects

Over the year, we have progressed 1 Q&SII project and 7 Q&SIIIa projects to regulatory signoff. We have 1 project remaining; Killylour WTW, which is forecast to be delivered in 2014/15.

Table G3 Monitoring Serviceability

G3.1 – 3.4 Drinking Water Quality Indicators (Annual Measure)

G3.1 – 3.2 % of compliant zones for Iron & Manganese

The exclusion of iron from drinking water increased by 0.29% from 91.32% in 2012 to 91.61% compliance of water supply zones in this reporting year.

The exclusion of manganese from drinking water has reduced by 0.3% from 93.25% in 2012 to 92.95% compliance of water supply zones in 2013.

G3.3 Number of microbiological failures at water treatment works

The number of microbiological failures at water treatment works has reduced by 16 from 33 in 2012 to 17 in 2013.

G3.4 Lead communication pipe survey

There is no specific serviceability objective for "Lead communication pipe survey" within our Delivery Plan (Table 3.1, page 8). This output is reported in line G2.17.

G3.5 – 3.15 Environment Serviceability Indicators

G3.5 Number of Failing Wastewater treatment works

The number of Failing Wastewater treatment works is 1 for 2013/14.

G3.6 Number of sludge treatment facilities improved to comply with safe sludge matrix

This output is reported in line G2.30. There was 1 further sludge treatment facility improved to comply with safe sludge matrix in 2013/14. This programme is now complete.

G3.7 The maximum number of UID's

During the report year we have continued to complete the delivery of both the Q&SII uCSO completion outputs and the Q&SIII UID outputs.

This indicator is dependent on the outcome of the seven-stage process and studies which may reduce or increase the number of outputs to be delivered and the number of known unsatisfactory discharges.

At March 2014 there were 857 UIDs. Studies continue to be undertaken during the 2014/15 period.

G3.8 Number of Pollution Incidents

Environmental Pollution Incidents occur where there is a failure at a water or wastewater asset that impacts on the environment, as agreed with SEPA. These are classified by SEPA as water or wastewater category 1, 2 or 3 incidents. We recorded total of 265 incidents in 2013/14. The number of agreed Cat 1, 2 & 3 incidents are listed below:

Water Cat 1&2	1 incident agreed
Sewerage Cat 1&2	5 incidents agreed
Sewerage Cat 3	259 incidents agreed

G3.9 Pollution incidents (sewerage) per 1,000 km

There were 5.29 pollution incidents (sewerage) per 1,000 km during 2013/14.

G3.10 Serious pollution incidents (sewerage) per 10,000 km

There was 1 serious pollution incident (sewerage) per 10,000 km during 2013/14.

G3.11 Serious pollution incidents (water) per 10,000 km

There were 0.20 serious pollution incidents (water) per 10,000 km during 2013/14.

G3.12 Discharge permit compliance

Discharge permit compliance was 99.83% during 2013/14.

G3.13 Satisfactory sludge disposal

Satisfactory sludge disposal was 100% during 2013/14.

G3.14 Water Efficiency Plan

There is no target set out in the Delivery Plan 2010-15 therefore we have not reported any figures.

The Water Efficiency Plan (WEP) was approved by Ministers in October 2011. Our approach to water efficiency is framed around three key areas: Engaging with our customers, improving our assets, working with our stakeholders and policy makers. Work on the work streams continued while we awaited approval for the plan and good progress is being made.

The internal water efficiency steering group continues to meet on a monthly basis to maintain a focus on water efficiency and ensure a joined up approach. Within the WEP Scottish Water has laid out a number of key activities and expected outcomes, the steering group use these as the focus of its activity.

G3.15 Greenhouse Gas (GHG) Emissions (ktCO2e).

As previously discussed, we are unable to meet the AR14 timetable for the production of this new line. The timetable for the production of our 2013-14 Carbon Footprint is dependent on when the necessary data is available and then having the assessment independently verified using the BSEN ISO 14064-3:2012 standard, a key element of our Carbon Footprint work.

In light of these considerations we will, as agreed, report the **2012-13** position in this submission and will provide the **2013-14** position in September 2014, subsequently utilising that figure in our AR15 submission.

The figure will be contained within our 2013-14 Carbon Footprint report as our ‘water industry comparable’ figure. This figure is calculated using Defra methodology and takes into account the Ofwat boundary for the regulated business. It excludes waste to landfill and chemicals and therefore differs from the headline carbon footprint figure published in our 2012-13 Carbon Footprint report.

G3.16 – 31 Customer Service Serviceability Indicators

G3.16 Properties on the Low Pressure Register

The number of properties on the Low Pressure Register is reported as 56 excluding exclusions.

G3.17 Properties with Unplanned Interruptions to supply > 12 hours

The overall figure for 2013/14 for properties affected for more than 12 hours was 840 properties, a reduction of 673 properties from 2012/2013. In this reporting year only 1 incident affected more than 100 properties for greater than 12 hours and 3 incidents affected over 50 properties. The combined impact of these events affected 310 properties for greater than twelve hours.

In April 2013, 90 properties were affected by an overrun of planned capital works in Greenock. Supply was restored to 65 of these properties in 12¼ hours and the remaining 25 properties were affected for 14 hours.

In October 2013, 55 properties were affected by a burst in Birkenshaw Street Glasgow, with supply restored in 15½ hours. Removal of parked cars at the burst location contributed to the delay in restoring the supply.

In January 2014, 111 properties were affected by a burst in Bilsland Drive, Glasgow. This was one of 13 bursts that occurred on this evening due to an operational event. Supply was restored in just over 13hours. The other 12 bursts were repaired and supply restored in under 6hrs.

In February 2014, 54 properties were affected by an overrun of planned capital works in South Queensferry with supply being restored in 17 hours.

G3.18 Number of hours lost due to water supply interruptions for three hours or longer

There were 0.53 hours per property lost due to water supply interruptions for three hours or longer.

G3.19 Number of Bursts per 1,000km of mains

There were 163 mains bursts per 1,000km during 2013/14. This was a decrease of 8 from 2012/13.

G3.20 – G3.22 Customer Service Serviceability Indicators - Sewer Flooding

G3.20 Properties at Risk of Internal Flooding

The number of properties at risk of internal flooding at March 2014 was 392. This was a reduction of 3 properties compared to 2013/14 outturn of 395.

G3.21 Properties internally flooded due to other causes

The figures reported here relate to flooding caused by blockages or failure of main and lateral sewers. The number of properties internally flooded in 2013/14 was 432, a decrease of 213 on the previous year.

G.22 Incidents of internal sewer flooding for properties that have flooded within the last ten years

There were 162 incidents of internal sewer flooding during 2013/14 at properties that have flooded within the last ten years.

G3.23 The Overall Satisfaction level (from the customer service questionnaire)

The overall Satisfaction Level at March 2013 was 90% and is an increase of 2% on the previous year.

G3.24 The maximum number of 'second tier' complaints referred to Waterwatch

The overall number of second tier complaints referred by the Scottish Public Services Ombudsman (SPSO) in 2013/14 was 11 which is a reduction of 14 on the previous year.

G3.25 The number of telephone contacts relating to drinking water quality

Total number of telephone contacts which related to drinking water quality in 2013 was 12,285, a reduction of 5,894 from 2012.

G3.26 Metering Trial

There is no target set out in the Delivery Plan 2010-15 therefore we have not reported any figures.

The Water Efficiency Trial was approved by Ministers in October 2011. The Water Efficiency Trial aims to understand how customer consumption behaviour in Scotland responds to a range of water efficiency measures and to assesses the relative cost/benefit of each of these measures and gather robust evidence which may be used to inform future direction and policy appropriate to Scotland.

We have now started installing meters which will allow us to monitor household consumption throughout the trial period. The recruitment of new build households remains challenging; in agreement with the Scottish Government we have begun recruitment of existing households to the trial.

Through our Incentivising Developers Project we are also undertaking other trials which will support this trial. One will look at retrofitting water efficiency in social housing and another other will allow us to work with West Lothian Council and will include some rainwater harvesting. This year we have added two small scale rural trials to test rainwater harvesting and greywater harvesting. All of these trials will combine to build our understanding of how to enable our customers to use water wisely.

G3.27 Creation of a register of all properties affected by external sewer flooding

The design and build of a register to include properties at risk of external flooding was completed in 2013/14.

G3.28 The Overall Performance Assessment (OPA) Score

The 2013/14 OPA score was [397]. This is the fourth year that 17 indicators have been incorporated and we have increased our score by [29] points on 2012/13.

G3.29 The average annual level of leakage

The 2013/14 Maximum Likelihood Estimation (MLE) leakage is 565.84 Ml/d. This is a reduction of 9.31 Ml/d from the 2012/13 MLE leakage figure of 575.15 Ml/d.

G3.30 Customer Experience Measure

Customer Experience Measures for household and business customers are being developed with the Customer Forum during 2014/15, with the aim of establishing a baseline measure for the post 2015 period. We will know more about the measures by December 2014, once the development phase is complete and we have an agreed methodology with the Forum.

G3.31 Wholesale Key Performance Indicator (KPI's)

The 2013/14 Wholesale KPI score is reported as 98%.

Scottish Water receives requests from Licensed Providers, often on behalf of their customers, to provide a variety of services which are defined in the Operational Code and Disconnections Document. These generally consist of requests to provide a service (e.g. provide a new connection, disconnect an existing connection, exchange a meter) or relate to market data (e.g. register a gap site or verify that services to a premises are correctly recorded).

The processes for handling these requests are set out in the Operational Code, including the timescales in which Scottish Water and, where relevant, Licensed Providers must complete particular steps.

In 2013/14 Scottish Water's overall response to requests made by Licensed Providers is 97.6%. Performance is reported as the percentage of tasks closed in the period and which were completed within the required timescale.

Data Sources

Performance is reported from a Scottish Water datamart which takes data from three corporate systems used to record, schedule and manage delivery of requests from Licensed Providers and associated data updates to the CMA: these are the CRM system, the asset management systems and the Data Flow Management datamart, which is used to record all transactions to and from the CMA. Creation and closure of tasks is time-stamped by these systems and this data is used to calculate completion times of tasks.

For the report year 2013/14, Licensed Providers issued service requests by email to Scottish Water, attaching the necessary information about the request in the relevant form as set out in the Operational Code or Disconnections Document. Creation of a service request is recorded as the time at which the request is created on Scottish Water systems which is typically within 1 business day of receipt. Scottish Water has recently introduced new portal technology which will enable Licensed Providers to submit requests directly into Scottish Water systems for certain processes. Using this mechanism, the creation of the task is recorded as soon as the request has passed certain automated validation checks.

All obligations applying to Scottish Water set out in the Operational Code and Disconnections Document are recorded in the datamart and are used to calculate performance. Data is stored in a data warehouse and presented in a suite of reports which show performance at a detailed and summarised level. Scottish Water shares performance figures with Licensed Providers, who are provided with visibility of their own requests. Licensed Providers also are provided with detailed information on closed and outstanding tasks.
Exclusions

Tasks which have been delayed at the request of or due to the action of the customer or the Licensed Provider are excluded from the performance value but are still reported to the Licensed Provider. An example would be where a customer wishes to delay a meter exchange to coincide with a planned shut-down to minimise disruption to their business.

It should be noted that whilst the majority of requests from Licensed Providers are included, there are a number of process steps which are not included in the reported performance of 97.6%. The affected process steps are as follows:

- Deregistration of Supply Points or Services
- Certain steps in the Meter Accuracy Test and New Connection processes, with reporting currently reflecting the Operational Code processes prior to the introduction of Accredited Entities
- Registration of a Gap Site
- Installation, exchange, accuracy test, repair and replacement of Private Meters at Trade Effluent Discharge Points.

It should be noted that deregistration requests are planned to be added to reports at the end of May 2014; there are planned changes to connections processes which will allow automated reporting of further steps in the summer; and the remaining steps will be reviewed to assess implementation requirements.

Confidence Grades

Performance is measured and reported from corporate systems but given the points listed above and the current exclusions from the report a confidence grade of B3 has been applied.

G3.32 Water Available for Supply Index

As agreed with WICS this new line is not being submitted in this reporting year as the methodology to be used has not yet been agreed.

G3.33 to G3.43 Asset Health Index The new lines covering AHI are not being submitted in this reporting year following discussion with WICS on the agreed methodology to be employed going forward.

Table G4 OMD Inputs including Q&SII and Q&SIII a project Sign-off

General Comments

G4.1 - G4.37 These lines show the enhancements under the Q&SIIIb programme by OMD grouping. The number of outputs recorded is by Milestones 1 to 5 by quarter. The data reflects the cumulative actual and forecast position by year over the 2010-15 Regulatory period. The data reported reflects the position recorded in the Quarter 4 2013/14 CIR.

G4.38 - G4.39 These lines report the actual and forecast OMD expenditure by quarter by year for the 2010-15 regulatory period.

G4.40 – G4.44 These lines report the actual and forecast Q&SII and Q&SIIIa projects signed off at MS5 by quarter and year.

Where no line comments are given we are forecasting to achieve all Delivery Plan outputs.

G4.3 Km of mains rehabilitated

Forecast of 4,091km reflects our belief that a reduced length of mains is required to meet the zonal compliance requirements. This is less than the 2013/14 delivery plan profile of 4,352km. This target will be updated through the Technical Expression change process. As noted in G2.7, we will not be claiming the associated OMD points for the affected zones. Our score has been manually adjusted downwards by 0.5 points.

G4.36 Number of UID Improved (Under 7 stage)

Forecast of 213 reflects the removal of 1 output from the Shieldhall catchment.

Table G5: Growth

New table for reporting year 2013/14

Lines G5.1 to G5.14 show the expenditure Scottish Water has incurred or is forecast to incur on growth for the SR10 programme. The report has been produced using the same methodology as G1 with the projects actual expenditure taken from Scottish Water's financial systems and the forecast expenditure taken from Primavera. The % allocation assigned to each project has been taken from the systems which hold Scottish Water's CAPEX gateway approval forms. Most projects are assigned 100% to growth but there is significant growth investment delivered as part of large quality schemes.

The total Growth expenditure shown on table G5 aligns with the total Growth on table G1. Table G1 shows the split between Part 3 and Part 4 assets and also the split between household and non-household for RCC.

As this is a recent addition to the table, it is necessary to assign growth investment to Part 3 or Part 4 based on the primary asset type being worked on at project level. It is intended to add additional drivers to distinguish Part 3 and Part 4 investment for the next strategic review period, giving a greater degree of accuracy for this section of G5.

At the start of the SR10 period projects were set up for each unitary authority, water/wastewater and household/non household. This allows G1.9, G1.10 and the new lines G5.1, G5.2, G5.4 and G5.5.

Total growth expenditure in 2013-14 was £40.6m with £184.3m expected for the review period.

G5.15 to G5.26

G5.15 and G5.21 - Water household infrastructure charge income for the period to March 2014 is £16,574k, which relates to 56,696 new households being connected, or applying to be connected, to the water network.

G5.16 and G5.22 – Water non-household infrastructure charge income for the period to March 2014 is £600k, which relates to 1,724 new non-household properties being connected, or applying to be connected, to the water network.

G5.17 and G5.24 – Wastewater household infrastructure charge income for the period to March 2014 is £12,666k, which relates to 42,845 new households being connected, or applying to be connected, to the wastewater network.

G5.18 and G5.25 – Wastewater non-household infrastructure charge income for the period to March 2014 is £122k, which relates to 401 new households being connected, or applying to be connected, to the wastewater network.

G5.27 – For the period to March 2014 we paid RCC to developers for 61,754 household properties that are connected to our water assets (Part 2 & 3).

G5.28 – For the period to March 2014 we paid RCC to developers for 73 non-household properties that are connected to our water assets (Part 2 & 3).

G5.30 – For the period to March 2014 we paid RCC to developers for 33,777 household properties that are connected to our wastewater assets (Part 2 & 3).

G5.31 – For the period to March 2014 we paid RCC to developers for 17 non-household properties that are connected to our wastewater assets (Part 2 & 3).

G5.33 – For each new household property connected to the water network an Infrastructure charge is applicable. Therefore, for the period to March 2014, the number of household properties paying an infrastructure charge to SW for additional water strategic capacity is 56,696 (as line G5.21).

G5.34 – For each new non-household property connected to the water an Infrastructure charge is applicable. Therefore, for the period to March 2014, the number of non-household properties paying an infrastructure charge to SW for additional water strategic capacity is 1,724 (as line G5.22).

G5.36 – For each new household property connected to the wastewater network an Infrastructure charge is applicable. Therefore, for the period to March 2014, the number of household properties paying an infrastructure charge to SW for additional wastewater strategic capacity is 42,845 (as line G5.24).

G5.37 - For each new non-household property connected to the wastewater network an Infrastructure charge is applicable. Therefore, for the period to March 2014, the number of non-household properties paying an infrastructure charge to SW for additional wastewater strategic capacity is 401 (as line G5.25).

G5.39 and G5.40 - The data reported in these two lines represents the increase in strategic capacity delivered, or forecast to be delivered, by all relevant projects with the exception of any "Infra Charge increase" projects. In these completed tables the reported data has been intentionally matched to lines G2.1 and G2.2.