

FINAL

REPORTER SERVICES SCOTTISH WATER'S OPA SCORE 2011-12 REPORTER'S REPORT

B&V PROJECT NO. 121263

PREPARED FOR

Water Industry Commission for Scotland

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Scottish Water's OPA Score 2011-12 Reporter's Report Table of Contents

1. INTRODUCTION	1
2. OPA SCORE SUMMARY	2
3. ASSESSMENT OF OPA SCORE DATA PROVIDED BY SCOTTISH WATER.....	4
3.1 Inadequate Water Pressure	4
3.2 Unplanned Interruptions	6
3.3 Hosepipe Restrictions	8
3.4 Security of Supply Index (SoSI) - Absolute	9
3.5 Security of Supply Index (SoSI) against Target	11
3.6 Water Quality	12
3.7 Category 1 & 2 Water Pollution Incidents	13
3.8 Leakage	14
3.9 Sewer flooding incidents due to inadequate capacity	18
3.10 Sewer flooding due to other causes	20
3.11 Sewer flooding, properties at risk	22
3.12 Wastewater pollution Incidents (Category 1 & 2)	24
3.13 Wastewater pollution Incidents (Category 3)	26
3.14 Sewage Sludge disposal	27
3.15 Non-Compliant WwTW	28
3.16 Customer Contact combined	29
3.16 Customer Contact combined	29
3.16.1 Percentage Written Complaints Responded to within 10 Days.....	29
3.16.2 Percentage of lines busy as a percentage of total calls received on customer contact lines	31
3.16.3 Percentage of calls abandoned as a percentage of total calls received on customer contact lines.....	32
3.16.4 Response to Question 19 of the Customer Satisfaction Survey – “Overall, how satisfied were you with the manner in which your call was handled?”	33
3.17 Assessed Customer Service	34
4. FINAL OPA CALCULATION	36

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1. INTRODUCTION

The Overall Performance Assessment (OPA) is a means whereby a number of indicators are combined into an individual score. Most of these indicators are taken from Scottish Water's "Annual Return". Formerly, in order to assist the Water Industry Commission (WIC) to assess the quality of the Annual Return an "Independent Reporter" (the Reporter) audited the figures by assessing the methods used to produce the figures and the assumptions made by Scottish Water (SW).

In 2010-11, WIC discontinued the formal role of Reporter. However, as for 2010-11, to provide its own assurance and governance, SW has appointed the previous Reporter to continue the work previously undertaken by the Reporter in respect of this Annual Return.

Both SW and WIC have agreed that the indicators making up the OPA will be reviewed before the submission of the Annual Return. They have also agreed that the Reporter should prepare a preliminary report on them. This report fulfils that requirement.

The report does not go into all the aspects covered in the Reporter's main report, focussing specifically on the reliability of the figures used to calculate the OPA. Where appropriate some background to the statements on reliability is given.

For this Return, WIC has asked for A, E and G Tables to be completed by SW, with no reference to B Tables. However, for its own internal governance procedures, SW is preparing a full set of Tables including B Tables, which the Reporter has been asked to audit as in previous years. Many of the OPA line items take their base data from B Table lines, which the Reporter has audited in a similar manner as for previous years.

Black & Veatch has been appointed by SW to undertake the Reporter role for this Annual Return as noted above. This OPA report has been prepared by a team which is composed of senior staff of Black & Veatch under the direction of Mr Peter Martin.

The report has been prepared by Black & Veatch for the use of the WIC and SW only and is written assuming the knowledge already held by these organisations and the objectives of these organisations in undertaking the work covered by the report. No responsibility is accepted by Black & Veatch for any reliance that may be placed by any third parties on the information contained in this report.

2. OPA SCORE SUMMARY

The Water Industry Commission for Scotland introduced the Overall Performance Assessment (OPA) score in the final determination of the Strategic Review of Charges for the period 2006-10.

The OPA Score provides a benchmark for monitoring improvements made by the company, a basis for incentivising directors and staff of Scottish Water and an output target within the objectives set for the period under review.

During 2006-10, OPA comprised 12 measures, and was used as the Commission's representation of the quality of service provided by SW during this period. During 2006-08, the “% customer billing contacts responded to within 5 days” was included in the assessment, but following the wholesale-retail split it was dropped.

For 2010-15, six new measures have been added to OPA, three of the original measures have been redefined and written complaints and telephone contacts have been consolidated into a single Customer Contact measure, as set out below:

New measures	Redefined measures
Security of Supply Index (SOSI) absolute performance	Drinking Water quality
SOSI against target,	Hosepipe restrictions
Category 1 & 2 Water Pollution Incidents	Leakage
Category 1 & 2 Sewage Pollution Incidents	Customer contact
Category 3 Sewage Pollution Incidents	
Assessed Customer Service	

The OPA score for 2010-15 is assessed against the following components:

Ref	Measures
	Water Service
1	Inadequate Pressure
2	Unplanned Interruptions
3	Hosepipe restrictions
4	Security of Supply Index - absolute
5	Security of Supply Index – performance against target
6	Water Quality
7	Category 1 & 2 Water Pollution Incidents
8	Leakage
	Wastewater Service
9	Sewer flooding incidents due to inadequate capacity
10	Sewer flooding due to other causes
11	Sewer flooding, properties at risk

Ref	Measures
12	Wastewater Pollution Incidents (Category 1 & 2)
13	Wastewater Pollution Incidents (Category 3)
14	Sewage Sludge Disposal
15	Non-Compliant WwTW
	<i>Customer contact</i>
16	Customer Contact combined
17	Assessed Customer Service

The data required to calculate each component score is taken either from the Annual Return or summary data provided by other third parties, for example by the DWQR or SEPA on water quality and wastewater compliance respectively.

In previous years, WIC has confirmed that the Reporter is not required to comment on those lines that are sourced from other third parties.

For this Return, Leakage (Item 8) has been audited separately by the WIC's leakage assessor (Strategic Management Consultants), but for completeness their audit report has been inserted into this report at Section 3.8 below. We have not reviewed the SMC report.

3. ASSESSMENT OF OPA SCORE DATA PROVIDED BY SCOTTISH WATER

3.1 INADEQUATE WATER PRESSURE

The Inadequate Water Pressure measure reflects the percentage of connected properties that have a water supply that, under normal circumstances, cannot lift water to a height of 10m and deliver it at a rate of 9litres/second at the boundary tap.

The OPA score for percentage of properties subject to inadequate water pressure is calculated from the following data relating to the Annual Return submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
B2.1 (A1.10)	Total connected properties at year end	2482892	2503991	2561601	2570877	2571048	2581508	B4
B2.9	Properties below reference level at end of year	7772	5907	2974	2496	1962	1542	B2
	Properties excluded as per E&W					732	640	
	Total properties below reference (for OPA)	7772	5907	2974	2496	1230	902	

The "total connected properties at year end" is defined as "The total number of properties (household and non-household properties) connected to the distribution system as at September of the Reporting year". The definition is interpreted to include measured and non measured domestic and non domestic connected properties.

The methodology for determining the number of connected properties is derived from data drawn from three sources. Unmeasured households were derived from the WIC4 report for September 2011, Metered households are abstracted from SW's PeopleSoft database and meter reading and billing spreadsheet. The number of Non-household premises was derived from reports supplied by the Central Market Agency (CMA). As in previous years, SW is reliant on third parties providing the correct data. The number of connected properties is reported in line A1.10 of the AR12 tables.

The net increase in connected properties is 10,460 (0.41%) since AR11. Unmeasured household connections have increased by 12,896; Measured household connections have reduced by 18; Measured non-households have increased by 30,853; and Unmeasured non-households reduced by 33,371. The project to investigate duplicate records, vacant properties and gap sites in the CMA data combined with the end of the transition period for volumetric billing of previously unmeasured properties has resulted in a significant reduction in Unmeasured non-household connected properties and a corresponding increase in Measured non-household connected properties (32,711).

During the period, vacant Unmeasured household properties increased by 605 to 46,387 and vacant Non-household properties increased by 4,944 to 26,003.

All data related to 'Properties Subject to Inadequate Water Pressure' are held on the Corporate Data Repository (CDR) which is attached to the customer contact system, "Promise".

The methodology for recording and investigating low pressure incidents is the same as for previous years. No investigations have been initiated during 2011-12 to look for new low pressure areas. Investigations are only initiated as a consequence of a customer complaint.

The surrogate reference level of 15m at the distribution main is used to check for low pressure. No allowance has been made for properties with longer service pipes, or for multiple properties served from a common service pipe, so long as adequate pressure is provided at the boundary box. While this might ignore a few properties the numbers are not likely to be material.

We believe that the register is therefore a realistic statement of SW's position for its low-pressure properties, recognising that there will continue to be a low incidence of new discoveries. The 2011-12 figures represent a year-on-year continuing improvement in the quality of the recorded data.

The number of properties at risk of low pressure has reduced in the report year from 1,962 to 1,542. The reported number includes 139 properties which were added to the at-risk register during the year due to better information, asset deterioration and operational changes.

The overall reduction resulted from:

- Operational improvements - 15 schemes covering 310 properties (rezoning, changing supply arrangements, pumping, PRV adjustment). Improvements included addressing low pressure issues for 102 properties within 10.5m head of service reservoirs where the required service level could not be met.
- Asset improvement - 4 schemes covering 160 properties. Improvements were linked to Capital Investment Delivery schemes (pumping stations, trunk mains, resizing distribution pipework).
- Better information – 12 water supply zones were investigated covering 64 properties.

The 2011-12 records identify 640 properties within 10.5m head of service reservoirs (down from 738 properties in 2010-11) where the required service level cannot be met. As is the practice in England and Wales, they are claimed as exceptions. These 640 properties make up 41.5% of the total reported properties receiving pressure below the reference level at the end of the year. No exceptions have been claimed for abnormal demand or short-duration incidents as SW does not have the permanent pressure-logging infrastructure in place to substantiate these occurrences.

We believe that the confidence grade of B2 is reasonable for the source of the data and analysis processes. This is the same as the grade assigned to the data last year. SW has a well-established methodology for identifying and recording properties receiving low pressure and investigating potential low-pressure properties, and sample checks confirmed that this has been followed. In our view the information provided is accurate within the stated confidence grade.

3.2 UNPLANNED INTERRUPTIONS

The Unplanned Interruptions measure reflects the number of premises that have experienced an unplanned water supply interruption lasting more than 6 hours. The calculation uses the percentage of properties affected by interruptions lasting between 6 and 12 hours, between 12 and 24 hours, and beyond 24 hours, with respective weightings of 1, 2 and 4 to generate an interruptions score.

The OPA score for connected properties experiencing unplanned interruptions is calculated from the following data relating to the Annual Returns submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
B2.1 (A1.10)	Total connected properties at year end	2482892	2503991	2561601	2570887	2571048	2581508	B4
B2.16 + B2.23	Total number of properties restored > 6 hours	29,269	17,074	17,883	22,876	14,776	17,775	A3
B2.17 + B2.24	Total number of properties restored > 12 hours	4,810	1,600	5,819	5,624	3,862	3,672	A3
B2.18 + B2.25	Total number of properties restored > 24 hours	668	666	71	90	1,399	188	A3
	Total weighted properties for OPA (>6 hours)	35,415	20,006	23,844	28,680	21,436	21,803	

For our comments on total properties connected for water see Section 3.1 above.

The figure used by SW in its OPA calculation is the sum of relevant lines in Table B2, covering both properties affected by unplanned interruptions, interruptions where insufficient notification was given and planned interruptions which have over-run, but excluding interruptions caused by third parties. SW has followed the WIC guidance for AR10 in that Planned interruptions which over-run are not included in lines B2.15, B2.16, B2.17 and B2.18. Data used in the tables are actual data without extrapolation.

The numbers of properties affected by Unplanned interruptions in 2011-12 increases significantly from those reported in AR11 for 'More than 3 hours' (101,774, an increase of 40,243) and for 'More than 6 hours' (17,349, an increase of 2,791). However, the other two reported lines 'More than 12 hours' and 'More than 24 hours' both reduced - by 254 and 1,211 respectively.

A review of the database using filter queries identified 43 large incidents (impacting more than 1,000 properties) collectively impacting 125,617 properties, of which 14 incidents impacted more than 3000 properties. The largest single incident impacting 14,984 properties lasted 4hours.

Interruption incidents are recorded either using hand-held devices (Integrated Mobile Solution: IMS) to record entries or as a paper record. Both types of report are held on the corporate data repository (CDR). Individual reports remain open until the data are verified by the software. A customer contact reporting an Interruption to Supply will initiate a site visit by a Network

Service Operator to validate the incident, its start time and to estimate of the number of properties affected. Incident start and end times tend to be entered to the nearest 1 or 5 minutes. For incidents affecting large numbers of properties, the estimate of the number of properties affected is checked using GIS records. Longer duration incidents are investigated further.

Data are entered on site direct onto an IMS. Jobs cannot be closed unless certain mandatory data fields are completed ('forced validation'). The IMS provides access to GIS and data are downloaded daily to the corporate data repository without manual intervention. Paper record reports are potentially less reliable than IMS data because they can be completed at a later date away from the site and data fields may be missing. Paper records have to be manually entered into the corporate database.

Three procedures have been introduced during 2011-12 to validate information entered on the database and prevent job closure without completing the record. They are:

- Weekly check of all Interruption to Supply job records over 6 hours against the Ellipse database. Records of mains repair materials used on a job are used to valid an interruption report.
- Missing ITS data delaying an incident being closed. Issue requests to complete data. The record is then included in the weekly check process.
- Escalation process ('Bad Alert'). Major events with high potential risk to customers flagged as 'Bad Alert' and managed at high level until risk reduces. In 2011-12, there were 124 'Bad Alerts' of which 114 incidents had the potential to escalate into major incidents.

Root cause investigations are instigated for all incidents that could potentially impact OPA . Investigations are carried out for all incidents lasting more than 6 hours. In 2011-12 there were 233 investigations opened of which 217 had been completed by the end of the year.

The relevant lines in AR12 have been audited and found to be consistent with the base data in SW.

The confidence grades are unchanged from the previous Return. Taking all factors into consideration, including the need for a data cleansing exercise, we believe that the figures used in the OPA are accurate, within the confidence grades given.

3.3 HOSEPIPE RESTRICTIONS

This measure is calculated as the percentage of the population that is subject to hosepipe restrictions.

The OPA score for hosepipe restrictions is calculated from the number of restrictions which applied in previous years and the percentage population affected by the restrictions. This detailed level of information is not recorded in the Annual Return.

In the relevant period, SW has not imposed any hosepipe restrictions as evidenced by the zero return on hosepipe restrictions reported in the Annual Return:

Ref	Description	2006-07	2007-08	2008-09	2009/10	2010-11	2011-12	CG
B1.1	% population affected by hosepipe restrictions	0	0	0	0	0	0	A1

We have been informed by SW that no hosepipe restrictions were imposed in 2011-12. This statement is accepted.

3.4 SECURITY OF SUPPLY INDEX (SOSI) - ABSOLUTE

The use of Security of Supply Index (SoSI) within OPA is a new measure for the 2010-15 period. The SoSI methodology assigns a Scotland-wide SoSI rating which reflects overall availability of water supply. There are two separate SoSI measures within OPA, Absolute Performance (see this section) and Performance against Target (see Section 3.5 below).

The OPA score for Security of Supply Index (SoSI) is calculated from the reported SoSI score.

The OPA score is based on the Planned Level of Service ("Dry Year Annual Average") reported in the Annual Return in Table B9a. The data used to calculate the OPA score are:

Ref	Description	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	Zones in deficit – Planned level of service	69	59	55			
B9a	Security of Supply Index - Planned level of service (1)	+25	+35	+71			
	SoSI Target for Current Investment Period	n/a	+34	+46	+47	+91	+91

Note 1: the maximum SOSI score when no zones are in deficit is 100

The Planned level of service SoSI score in 2011-12 is +71, an improvement of 36 points from 2010-11 and 25 points better than the Target figure of +46 for the year. The 55 Water Resource Zones in deficit are equivalent to 15% of Scotland's population (741,732).

SW's methodology for calculating the SoSI score is the same as that used in previous years. The industry standard methodology and analysis processes have been applied and a consistent well planned approach followed.

Observations from the audit are as follows:

- This return has been calculated using current measured data.
- SW's levels of service include:
 1. A target level of service for a drought return period of once every 40 years in any water resource zone.
 2. A target level of service return period for hosepipe bans is not defined. No drought order or hosepipe ban was imposed in 2011-12.
- The adopted Water Resource Plan (WRP) was published in June 2010 with no material changes to the Supply Demand Balance from the draft plan. The WRP includes an assessment of the impact of the implementation of the Birds and Habitats Directive and the Water Framework Directive. We note the following:
 1. The plan does not take account of climate change predictions.
 2. Beyond currently funded projects, there is no allowance for the impact of future compliance with the Water Framework Directive.
- Hydrology investigations in 2011-12 produced yield changes to 30 sources, of which 8 resulted in a reduction in WAFU (Water Available for Use). For one source, Campbeltown,

the reduced WAFU combined with an increase in Distribution Input in 2011-12 (DI) resulted in the zone doing into deficit.

- The winter population broken down into Water Resource Zones for the SoSI calculation is 5,077,833 which is 43 less than the number reported in A2.1 (5,077,875). The difference represents the population of Eredine, Argyll and Bute, which is a private supply operated on behalf of the community by SW.
- SW continues to assume a 3% increase in demand for the Dry Year critical period, based on an 'average' used in England and Wales. A project titled 'Normalisation of Base Year Demand and Dry Year Factor Estimation' has been scoped to develop a model to calculate a 'normal year' and Dry Year Factor by Water Resource Zones. It is planned to complete the model including test runs in early 2013 and that the model will be available for the 2014 Annual Return. The scoping document will be submitted for funding shortly. We believe that the zone specific outputs from the validated model will contribute to a significant improvement in the certainty of the SoSI calculation.
- There are other assumptions that increase SoSI uncertainty including treatment works losses, raw water main losses and outage data, all of which have been discussed and actions recommended in previous reports. During 2011-12, SW completed a small and inconclusive desktop study into the sensitivity of raw water mains losses for selected WTW sites with a potential 0.5 SoSI point gain. However, SW has proposed to use site specific information, collected opportunistically, to challenge current assumptions. We are still strongly of the view that it is important that factors are accurately calculated where the data are or should be available and that generic factors and assumptions are regularly subjected to sensitivity testing. SW should collect data opportunistically to support, improve and validate all current assumptions. Accepting that some parameters are difficult to assess, we recommend that SW reviews each one in relation to its relevance for Scotland and its impact on the SoSI score for WRZs in deficit.

We have reviewed the basis of the calculations of SoSI, source data, assumptions, generic factors and the calculation for a number of WRZs that contribute to the SoSI score. We believe that the methodology and calculations presented by SW to populate Table B9a to be consistent with industry best practice and with Ofwat's letter RD03/02, and that the information presented by SW in the table gives a reasonable representation of the resource situation in Scotland under current legislation.

There is consistency between the data used for entries in Table B9 and the numbers used in the water balance and Table A2 including, populations, distribution input (DI), Water Operational Areas (WOAs) and Water Resource Zones (WRZs).

3.5 SECURITY OF SUPPLY INDEX (SOSI) AGAINST TARGET

This second SoSI measure is based on SW's actual SoSI score compared with their SoSI target, expressed as the percentage of the SoSI target not met.

For this year, SW has exceeded their SoSI target of 46, by 25 points. For details and our commentary, please see Section 3.4 above.

3.6 WATER QUALITY

This measure of Drinking Water Quality is based on the mean zonal compliance (regulatory samples taken at customers' taps) against the following six defined parameters: aluminium, faecal coliforms (E.coli), iron, manganese, trihalomethanes (THM) and turbidity. It is defined as the percentage of water samples that comply with the parameters, and has been re-defined for the 2010-15 period.

This information comes from outside reports and has not been subject to audit by the Reporter's team.

3.7 CATEGORY 1 & 2 WATER POLLUTION INCIDENTS

This measure relates to Category 1 and 2 pollution incidents resulting from water treatment and water distribution activities. Category 1 and 2 incidents are major and significant water pollution incidents respectively. In total, there are 4 categories of Environmental Pollution Incidents - but Category 3 (minor incidents) and Category 4 (incidents where no pollution was identified) are not used in this measure. SEPA determines the appropriate category for all pollution incidents following investigation with SW.

The pollution incident factor is calculated by dividing the number of Category 1 and 2 incidents by the resident winter population served (in millions).

SW reports one Category 1 & 2 water pollution incident for 2011-12. This has been substantiated by reference to SW's Environmental Pollution Incident monitoring spreadsheet, which is described in our comments on OPA lines 12 and 13 below for Wastewater Pollution Incidents (Category 1, 2 & 3) - see Sections 3.12 and 3.13 below. During the year there were two water pollution incidents which were initially regarded as potentially Category 1 or 2. In the first case, at Glendevon WTW an escape of sulphuric acid reached a water course through site drains. This incident has been referred by SEPA to the Procurator Fiscal as a potential prosecution and SEPA is refusing to discuss categorisation. SW has therefore assumed that this will be a Category 1 or 2 incident. In the second case, at Balgrie Reservoir, fish-kill occurred due to low water levels and this was originally reported by SEPA as being due to pollution. SEPA has now accepted that this was not the case, and the incident is not included in the reported numbers.

3.8 LEAKAGE

This measure has been redefined for the 2010-15 period. The OPA points reflect the leakage performance (the level of leakage rather than the leakage reduction achieved) compared with the target level of leakage. OPA points are based on the percentage of SW's expected leakage level not achieved.

A commentary on the Leakage Report has been prepared separately by the Leakage Assessor (Strategic Management Consultants) and for completeness that commentary is reproduced below in the remainder of this sub-Section

General

The score for leakage is calculated from the following data relating to the Annual Return submitted by Scottish Water, which together with figures from supporting documents is summarised in the table below:

Description (ML/d)	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
OPA leakage	1104.05	1003.8	924	801.7	703.6	699.1	629.2
Leakage Target		960	855	840	730	720	670
Total Leakage from the top down analysis				868.1	783.5	756.9	660.7
Directly estimated leakage from bottom up analysis				775.9	705.1	693.4	617.2
MLE adjusted leakage (A2.25)				816.4	738.2	699.1	629.2
Variance from Target						-20.9	-40.8

Until 2008/09, Scottish Water was not able to measure leakage directly and therefore it was estimated as the residual from the difference between Distribution Input (DI) and other inputs in the "water balance". From 2008/09, leakage has been estimated directly using a revised methodology based on SW's DMAs. Estimates of leakage from top down (from DI meters) and bottom up (from other component estimates including leakage) are reconciled and, provided the reconciliation is within 5% of distribution Input (DI), a 'Maximum Likelihood Estimation' (MLE) statistical adjustment can be applied to finalise individual component values. This statistical method allocates the difference between the top down and bottom up values in proportion to the assumed uncertainty in the component estimate. For the MLE calculation, SW uses the mid-point of the confidence grading range assigned to the individual components of the water balance.

At our audit, we reviewed the data to be included in the A2 and E6 tables, including the MLE leakage analysis. The methodologies used to prepare the top down and bottom up leakage estimate were consistent with previous years but both have benefited from improved data resulting from data cleansing activities as well as on-going and completed studies carried out in recent years. There are two notable changes in methodology for AR12 are as follows:

- The confidence grade for Distribution Input has changed from B3 to B2 moving the MLE leakage towards the top down estimate; and
- Scottish Water now estimates un-measured household consumption based on a per household consumption (PHC) rather than a per capita consumption (PCC).

The following table shows that the reduction in DI is accounted for by a 83.5 Ml/d reduction in distribution losses and a 21.0 Ml/d reduction in consumption, allowing for minor rounding differences.

Value in Ml/d	Ref	AR11	AR12	Difference
DI	A2.10	2000.1	1895.4	-104.7
Household water delivered	A2.11 + A2.12	842.2	826.6	-15.6
Non-household water delivered	A2.13 + A2.14	436.8	428.8	-8.0
Water Taken legally and illegally	A2.15 + A2.16	52.9	57.2	+4.3
Distribution System operations use (DSOU)	A2.17	6.0	4.3	-1.7
Net Consumption	A2.18	1338.0	1317.0	-21.0
Distribution Losses	A2.19	662.1	578.5	-83.5
Sum of changes				-104.5

The increase in DSOU at AR11 was due primarily to operations at Helensborough Low service reservoir to maintain satisfactory supplies to customers. The AR12 value of 4.3 Ml/d is similar to the AR10 value of 3.8 Ml/d.

The reconciliation error between top down and bottom-up of 43.49 Ml/d represents 2.3% of the Distribution Input compared to 3.2% last year, well within the 5% guideline.

In the narrative below we give added details about some items in the water balance, including a comparison with previous years. As for AR11, some of the leakage reduction in the report year results from re-estimations of other figures in the water balance some of which result from studies undertaken during the year or improved quality of collected data. The material changes in the reported lines, are summarised as:

- Scottish Water reports leakage of 629.24 Ml/d for 2011/12 which is over 40 M/d below the agreed regulatory OPA target of 670 Ml/d. Significant investment has been made in measures to manage and reduce leakage by 70 Ml/d in the year. Scottish Water commenced the year with an internal aim to outperform the regulatory target, and has done so due to a continued focus on leakage reduction coupled with the effect of a milder than planned for winter resulting in fewer than expected bursts and which has impacted on leakage levels across the UK.
- Scottish Water now has greater confidence in its estimate of Distribution Input (DI) and has, as a result, changed the confidence grade from B3 (+/- 5 to 10%) to B2 (+/- 1 to 5%). The

MLE methodology uses the mid-point of the confidence grade range and so the change in the year is from +/- 7.5% to +/- 3%. Had the confidence grade for DI remained unchanged, the MLE adjusted leakage figure would have been 620.7 Ml/d, some 8.5 Ml/d less than that reported. We have challenged Scottish Water on the justification for the change of grade and we are satisfied with the answers given.

- Following agreement with SMC, Scottish Water has changed its methodology for estimating unmeasured household use for AR12. The Household Consumption Monitor which has been applied to Table A2 now estimates a per household value of 302.96 l/property/day excluding plumbing losses. The AR12 'PHC' value uses 12 months data from the Monitor derived from average 95 out of 108 zones with a 88% average reporting of 26.1 days per month. The PCC is then derived by dividing the assessed volume by the SW reported connected population, rather than the occupancy rate in each monitor area as this introduces a higher level of uncertainty. Overall there is a 15.5 Ml/d (1.8%) decrease in the estimated unmeasured household water delivered.
- The total PCC, including plumbing losses and including void properties, is 150.00 l/hd/d (151.40 l/hd/d at AR11). Plumbing losses are estimated to add about 5.3 l/hd/d to the Per Capita Consumption.
- Measured household consumption (excluding underground supply pipe leakage), at 209.98 l/hd/d is 31.2 l/hd/d (13%) less than the 241.18 l/hd/d reported at AR11. It remains significantly higher than the estimated unmeasured consumption and the weighted average from the PHC Monitor but has only a minor effect on the water balance as there are only 510 measured households.
- Unmeasured non-household volume of water delivered has increased by 3.22Ml/d. Measured non-household volume has fallen by 2.7% to 408.53 Ml/d.
- Water Taken Legally unbilled increased at AR12 by 10% to 55.79 Ml/d reversing the fall at AR11. Water Taken Legally Unbilled includes 11,273 animal trough connections billed as a fixed charge, a reduction of 182 from the previous year's estimate.
- The number of trough connections is not included in the reported number of non-household connections. Although leakage from the underground supply pipes has been estimated and included in Water Taken Legally Unbilled using assumptions for measured and unmeasured connections. When considering the unrecorded locations of the majority of the connections in this category and the potential lack of maintenance, the resultant UGSP leakage of 0.52 Ml/d may be underestimated.
- The estimate of Waste water treatment works use increased by 3.26 Ml/d after a fall of 5.5 Ml/d in the previous year.
- Water taken illegally unbilled has further reduced by 0.80 Ml/d to 1.40 Ml/d, with two of the three categories having reduced during AR12 and the other remaining the same. This represents a fall of over 50% since AR10.
- At 82.22 Ml/d, the reported level of underground supply pipe losses equates to 13% of Total Leakage (post MLE) compared to an average in England and Wales of 24% (2009/10 published data). Taking into account the policies on supply pipe leakage, and the low household meter penetration, we consider that Scottish Water may be underestimating supply pipe leakage, and that an improved methodology is required prior to the end of the current investment period.
- Distribution losses have reduced to 578.47 Ml/d from 662.11 Ml/d in the previous year, a fall of 12.7% compared with a fall of 4.4% the previous year. Total reported leakage

(Distribution losses plus customer supply pipe losses has reduced by 96.23 Ml/d to 660.69 Ml/d (12.7%) following a 3.4% fall the previous year. Customer supply pipe leakage fell by 12.59 Ml/d in the year.

- The MLE adjustment was 12.04 Ml/d compared with 5.78 Ml/d the previous year. This is largely due to the change in confidence grade for Distribution Input placing more confidence in the top down estimate of leakage. This follows a large reduction at AR11 due to a change in the confidence grade for Total Leakage (pre MLE) from B4 to B3 resulting from improved confidence in the estimate of DMA leakage.
- The reconciliation error between top down and bottom-up estimates of leakage continues to improve and at 43.49 Ml/d represents 2.3% of the Distribution Input compared to 3.2% last year.
- Distribution input has fallen to below 2000 Ml/d, by 104.65 Ml/d to 1895.43 Ml/d. The MLE adjusted leakage reduction of 70 Ml/d represents two thirds of the fall in DI. The fall in the top down estimate of leakage is 96.6 Ml/d, which represents 92% of the DI reduction.
- The annual trend in DI is similar to that for 2007/08 without the large winter peak experienced in the past 2 report years. SW have estimated that the severe winter effects added 30 Ml/d to the annual average leakage, and this should be taken into account when considering the reduction of 70 Ml/d reduction in leakage from AR11 to AR12.
- Confidence Grades used for this return are generally similar to those used in the previous annual return. The grades for non-household consumption are B3 for measured non-households and C5 for unmeasured non-households, reflecting the source of the metered consumption data (from the CMA) and the uncertainty of the billing records respectively. The confidence grade for DMA leakage changed at AR11. The change in the confidence grade for Distribution Input is noted above.

General observations and conclusions

We conclude that the leakage estimation methodology used is reasonable and we have been able to track changes on a like for like basis from last year. Distribution Input (DI) has reduced by 104.7 Ml/d in 2011/12 to 1895.4 Ml/d. This comprises a reduction of 21 Ml/d in water delivered and a reduction of 83.5 Ml/d in distribution losses with some rounding errors.

SW has met the 2010/11 leakage target of 670 Ml/d using the methodology agreed for AR12.

Confidence Grades used for this return are generally similar to those used in the previous annual return reflecting that the sources and accuracy of data have not changed from those for AR11. The most significant change is the use of the B2 grade for Distribution Input compared with B3 at AR11. Had the confidence grade for DI remained unchanged, the MLE adjusted leakage figure would have been 620.7 Ml/d, some 8.5 Ml/d less than that reported

Our overall impression is that the Water Balance analysis and related methodologies is a consistent and thorough analysis based on auditable data sources.

3.9 SEWER FLOODING INCIDENTS DUE TO INADEQUATE CAPACITY

The OPA includes three separate measures of sewer flooding (see also Sections 3.10 and 3.11). The flooding factor for each is calculated by dividing the number of incidents or premises by the number of connected properties (in hundreds).

The score for percentage of connected properties suffering internal sewer flooding caused by overloading is calculated from the following data relating to the Annual Returns submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
B3.1	Total properties connected to sewerage system	2379638	2393540	2453485	2446969	2449070	2459750	B2
B3.3	Number of flooding incidents in the year caused by overloading	58	44	56	58	47	50	B2
B3.4	Number of flooding incidents attributed to severe weather	0	0	14	8	4	8	B2

The value for total connected properties (B3.1) for 2009-10 is the corrected value quoted in the Reporter's Report for the OPA submission in 2010-11.

The methodology for determining the number of connected properties is derived from data drawn from three sources. Unmeasured households have been sourced directly from the WIC4 reports of September 2011, while metered households are taken from SW's own in-house billing records. The number of non-household premises has been sourced from reports supplied by the Central Market Agency (CMA). As in previous years, SW continues to be reliant on third parties providing the correct data. The number of connected properties is reported in line A1.21.

There is a net increase in connected properties of 10,680 since the last report year, against a 5-year annual average increase of 16,022. The majority of these are unmeasured household connections.

The number of reported incidents is similar to the number reported in recent years.

Only internal flooding incidents are reported. It should be noted that the number quoted as the percentage of connected properties suffering sewer flooding due to overloading is calculated by dividing the number of flooding incidents by the total number of properties connected to the sewerage system. This does not necessarily give a correct figure or indication of the true extent of loss of service as an incident may involve more than one property. In the year 2011-12, for example, the AR12 Report shows that 99 properties were internally flooded during 50 incidents caused by overloaded sewers. It appears however that this method has been used to calculate the percentage flooded ratio in previous OPA reports and is as required by the WICS definitions.

The Promise customer contact system is the key source of data on sewer flooding incidents, supported by the associated choke sheets (site-checking by SW's performance analysts and in some cases by hydraulic modelling). The sewer flooding register is a standalone application and is derived from Promise data and historical information.

All incidents are recorded using hand-held devices (Integrated Mobile Solution - IMS). These have a number of advantages over paper recording systems: data are entered on site; the job cannot be completed unless certain mandatory data are provided ('forced validation'); access is available at the time to GIS and data are downloaded daily to the Corporate Data Repository without manual intervention.

The impact, extent and location of flooding and whether flooding is due to abnormally severe weather are all initially assessed on site. A weekly log is produced for all incidents and is analysed. Where the site assessment of the cause of flooding is that flooding is due to overloading then further office checks are run, possibly including modelling, to confirm this conclusion. For every incident of internal flooding, rainfall frequency is now checked by reference to detailed rainfall data collected by weather radar and allocated a return period using the industry-standard "Flood Estimating Handbook". This gives increased confidence that events due to extreme weather are correctly identified and reported.

The figures for the report year relate to flooding incidents affecting main sewers only. As in previous years, the figures exclude flooding arising from overloading of laterals. However, SW's records show that no such flooding was recorded.

For 2011-12, data returns on internal sewer flooding include no missing resolution codes, flooding types or sewer types in a total of 2,703 flooding incident reports. Therefore, as in 2009-10 and 2010-11, no uplift is necessary to the figures reported by SW. SW has weekly checking routines which it applies to all internal flooding, whether resulting from overloading or other causes. These routines verify data and the flooding history, and include further investigation where warranted, including CCTV and reference to existing hydraulic models.

SW has concentrated its efforts on internal flooding and has better data on internal flooding than on external flooding, where there are many more incidents and customer contacts but there is no funding for improvements. The claimed confidence grade of B2 for internal flooding is supported by the completeness of the data and the investigation processes used. In our opinion, the data are accurate within the claimed confidence grades.

3.10 SEWER FLOODING DUE TO OTHER CAUSES

The OPA includes three separate measures of sewer flooding (see also Sections 3.9 and 3.11). The flooding factor for each is calculated by dividing the number of incidents or premises by the number of connected properties (in hundreds).

The score for percentage of connected properties suffering internal sewer flooding caused by other causes is calculated from the following data relating to the Annual Returns submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
B3.1	Total properties connected to sewerage system	2379638	2393540	2453485	2446969	2449070	2459750	B2
B3.8	Flooding incidents due to equipment failure	21	18	16	26	17	25	B2
B3.9	Flooding incidents due to blockages	162	159	154	124	131	130	B2
B3.10	Flooding incidents due to sewer collapses	2	7	5	6	12	8	B2
	Total (Flooding incidents due to other causes)	185	184	175	156	160	163	

For our comments on total properties connected for sewage see Section 3.9 above.

The percentage of properties flooded due to other causes increased slightly, compared with last year, due mainly to an increase in the number of flooding incidents caused by equipment failure.

Only internal flooding incidents are reported. It should be noted that the number quoted as the percentage of connected properties suffering sewer flooding due to other causes is calculated by dividing the number of flooding incidents by the total number of properties connected to the sewerage system. This does not necessarily give a correct figure as an incident may involve more than one property. In the year 2011-12, for example, the AR12 Report shows that 178 properties were internally flooded during 163 incidents caused by other causes. It appears however that this method has been used to calculate the percentage flooded ratio in previous OPA reports and should therefore be retained for comparability.

For 2011-12, data returns on internal sewer flooding include no missing resolution codes, flooding types or sewer types in a total of 2,703 flooding incident reports. As in 2010-11, no uplift is necessary to the figures reported by SW.

The figures for the report year relate to flooding incidents affecting main sewers only. As in previous years, the figures exclude incidents arising from causes affecting laterals. Although SW's records show that these account for more than half of internal flooding resulting from causes other than hydraulic overloading.

SW has concentrated its efforts on internal flooding and has better data on internal flooding than on external flooding, where there are many more incidents and customer contacts, but there is no funding for improvements. The claimed confidence grade of B2 for internal flooding is supported and is justified by the completeness of the data and the elimination of the need for

uplift in the numbers of internal flooding. In our opinion, the data are accurate within the claimed confidence grades.

3.11 SEWER FLOODING, PROPERTIES AT RISK

The OPA includes three separate measures of sewer flooding (see also Sections 3.9 and 3.10). The flooding factor for each is calculated by dividing the number of incidents or premises by the number of connected properties (in hundreds).

The score for internal sewer flooding (at risk) is calculated from the following data relating to the Annual Returns submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
B3.1	Total properties connected to sewerage system	2379638	2393540	2453485	2446969	2449070	2459750	B2
B3.13	2 in 10 at end of year (A)	496	307	203	168	192	196	B2
B3.14	1 in 10 at end of year (B)	546	256	180	160	149	141	B2
B3.28	The reduction in the number of properties at risk of sewer flooding shown in SW's Delivery Plan (Table 3.1) (C)	3	100	100	253	0	0	A1
	Total	1045	663	483	581	341	337	
	Total (weighted for OPA = A+(0.5*B)+C)	772	535	393	501	267	267	

For our comments on total properties connected for sewage see Section 3.9 above.

Only internal flooding incidents due to hydraulic overloading of public sewers are included in the at-risk register. Flooding incidents due to inadequacy of private pipework or laterals are excluded, although these are rare and SW's data does not record any instances. The number of properties reported to be at risk has continued the downward trend of recent years. All properties in the register are address-specific.

The Promise customer contact system is the key source of data on sewer flooding incidents, supported by the associated choke sheets (site checking by SW performance analysts and, in some cases, by hydraulic modelling). Comments on the recording of incidents are given in Section 3.5 above, and it is clear that changes reported in 2010-11 have continued to result in more accurate identification of the cause and location of a flooding incident. The 'At-risk' register is held in a stand-alone Oracle database, and not in the corporate data repository.

The current at-risk numbers are based on new reported flooding incidents and historic reported flooding incidents. A proportion of the latter have been confirmed by customer surveys. Of the 58 additions reported this year, some properties have been added following design checks on both temporary and permanent investment solutions, but the majority have been added due to overloading incidents. We note that a property cannot be removed from the 'At-risk' register if a temporary solution has been provided. 55 properties have been removed following investment projects and 7 removed following better information. The majority of removals from the register are due to better information following reassessments, including those that have been re-categorised as being at risk of external flooding rather than internal flooding.

Frequency information is based on customer contacts and interviews, backed up by modelling, where available. SW states that approximately 80% of properties at risk of sewer flooding have been subject to hydraulic checks. Approximately 6,000 doorstep surveys were carried out in 2006 to verify historic flooding incidents, although only around half were successful as the occupiers were not always at home. Customer interviews are also carried out to back up proposed solutions for investment projects and for all flooding incidents reported by the FMAP investigation process.

For every incident of internal flooding since 2010-11, rainfall frequency has been checked by reference to detailed rainfall data collected by weather radar and allocated a return period using the industry-standard Flood Estimating Handbook. This gives increased confidence that events due to extreme weather are correctly identified and excluded from the at-risk register where the rarity of rainfall events justifies this.

For 2011-12, data returns on internal sewer flooding include no missing resolution codes, flooding types or sewer types in a total of 2,703 flooding incident reports. No uplift is therefore necessary to the numbers of properties reported as being at risk of flooding. In our opinion, the data are accurate within the claimed confidence grades.

3.12 WASTEWATER POLLUTION INCIDENTS (CATEGORY 1 & 2)

The OPA includes two separate measures that relate to environmental pollution incidents associated with sewage collection and treatment activities. These are Category 1 & 2 incidents (Section 3.12) and Category 3 incidents (Section 3.13 below). Category 1, 2 and 3 incidents are major, significant and minor water pollution incidents respectively. The pollution incident factor for each component is calculated by dividing the number of incidents by the resident population served (in millions).

SEPA determines the appropriate category for all pollution incidents following investigation with SW.

The score for pollution incidents is calculated from the number of Category 1, 2 and 3 pollution incidents which occurred during the year which were caused by SW's operations. The categorisation of incidents is based on a matrix agreed with SEPA. Category 4 events (other environmental events with very slight impact) are not included in the measure. The matrix assesses the impact of the pollution event in the categories of Amenity Impact, Water body Impact, Environmental Impact and Economic Impact. A more detailed description of the methodology and our audit findings is included in our report on the audit of the Annual Return 2011-12, where these data appear in Table G3, line 8.

Ref	Description	2007-08	2008-09	2009-10	2010-11	2011-12	CG
OPA Line 12	Wastewater pollution incidents – Category 1 & 2				28	18	N/A
OPA Line 13	Wastewater pollution incidents – Category 3				796	481	N/A
AR Line G9.11 or G3.8	Wastewater pollution incidents - total of Category 1, 2 & 3 incidents	931	935	788	824	499	N/A

Prior to AR11, the two OPA lines were not separately audited, so the total of Category 1, 2 and 3 incidents (taken from our audits of the Annual Return, line G9.11 up to and including AR10 and line G3.8 from AR11 onwards) is given for comparison. The definitions of pollution incidents were realigned with practice in England and Wales for the 2009-10 Return, so incident numbers before that date are not strictly comparable. Confidence grades are not given for the G tables after AR10.

SW has a team concentrating on environmental pollution incidents (EPI). 2010-11 saw improvements in procedures and the more timely agreement of incident categories with SEPA due to: the use of a shared incident spreadsheet; a single point of contact at SEPA; weekly conference calls; and monthly progress meetings with SEPA staff. 2011-12 saw further improvements in performance due to: improved guidance to and communication with SW operators; the introduction of a single 0845 telephone number for incident reporting; raising of the profile of pollution incidents within the organisation including the publication of regular progress reports; improved feedback to operators on pollution hot-spots leading to preventative maintenance; and the provision of funding for network interventions to avoid incidents occurring. These measures together have contributed to the observed reduction in incidents.

Incidents reported by members of the public and SEPA are recorded on SW's Promise customer contact system and then on the corporate data repository (CDR). Incidents first reported by SW

staff are entered directly onto the CDR. Information on incidents is downloaded onto a shared SW/SEPA spreadsheet which is reconciled with Promise and the CDR, as well as SEPA's laboratory information management system, LIMS. The spreadsheet that records agreed incident categories and the categorisation of all 2011-12 incidents had been agreed with SEPA by the date of the OPA and AR reports.

We have audited the identification of pollution incidents, the systems on which they are held and the reconciliation between them and the base data on incidents. By means of sample checks, incidents have been confirmed and reconciled with base data. In our opinion, SW has in place robust measures for data collection and analysis, and we confirm our agreement with the reported numbers of incidents and their categories.

3.13 WASTEWATER POLLUTION INCIDENTS (CATEGORY 3)

The OPA includes two separate measures that relate to environmental pollution incidents associated with sewage collection and treatment activities. These are Category 1 & 2 incidents (see Section 3.12 above) and Category 3 incidents (Section 3.13). Category 1, 2 and 3 incidents are major, significant and minor water pollution incidents respectively. The pollution incident factor for each component is calculated by dividing the number of incidents by the resident population served (in millions).

SEPA determines the appropriate category for all pollution incidents following investigation with SW.

Ref	Description	2007-08	2008-09	2009-10	2010-11	2011-12	CG
OPA Line 12	Wastewater pollution incidents – Category 1 & 2				28	18	N/A
OPA Line 13	Wastewater pollution incidents – Category 3				796	481	N/A
AR Line G9.11 or G3.8	Wastewater pollution incidents - total of Category 1, 2 & 3 incidents	931	935	788	824	499	N/A

Our comments in Section 3.12 above concerning SW's procedures and their accuracy apply equally to this section. We have audited the identification of pollution incidents, the systems on which they are held and the reconciliation between them and the base data on incidents. By means of sample checks, incidents have been confirmed and reconciled with base data. In our opinion, SW has in place robust measures for data collection and analysis, and we confirm our agreement with the reported numbers of incidents and their categories.

3.14 SEWAGE SLUDGE DISPOSAL

This measure reflects the percentage of sewage sludge that is disposed of unsatisfactorily.

The score for sewage sludge disposal is calculated from the following data relating to the Annual Returns submitted by SW:

Ref	Description	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	CG
A3.29 (prev A2.69)	Percentage unsatisfactory sludge disposal	0%	0%	0%	0%	0%	0%	A1

Sewage sludge is a by-product of the treatment of wastewater and SW treats approximately half the wastewater collected in Scotland (the other half is treated through PPP concessions). Generally, the PPP concessions are responsible for their own sludge disposal.

SW assesses and monitors movements of sludge through its "Gemini" sludge management system. Quantities are monitored by a variety of means from tanker load to direct flow measurement and dry solids content by sampling.

Sludge is disposed of to agriculture, land reclamation and a small quantity goes to landfill. The small quantity previously disposed of to composting has ceased during the year. All these are controlled operations where audit trails for environmental audits are maintained.

We believe that the records maintained and checks undertaken by SW are adequate to report 0% unsatisfactory sludge disposal.

3.15 NON-COMPLIANT WWTW

This measure reflects the percentage of the population-equivalent served by wastewater treatment works failing to comply with specified parameters in the SEPA's licenses for SW's wastewater treatment plants.

This information comes from an external report and has not been subject to audit by the Reporter's team.

3.16 CUSTOMER CONTACT COMBINED

This measure has been redefined for the 2010-15 period, and comprises an assessment of two aspects of company performance, written complaints and ease of telephone contact, with the latter measured through 3 weighted measures (numbered 2 to 4) – all as follows:

1. the number of written complaints answered within ten working days as a percentage of written complaints received;
2. the percentage of lines busy as a percentage of total calls received on customer contact lines;
3. the percentage of calls abandoned as a percentage of total calls received on customer contact lines; and
4. the response to Question 19 of the Customer Satisfaction Survey – “Overall, how satisfied were you with the manner in which your call was handled?”

3.16.1 Percentage Written Complaints Responded to within 10 Days

The score for % written complaints responded to within 10 days is calculated from the following data relating to the Annual Return submitted by Scottish Water:

Ref	Description	2006-7 (SW only)	2007-8 (SW/BS)	2008-9 (SW only)	2009-10 (SW only)	2010-11 (SW only)	2011-12 (SW only)	CG
B4.19	% dealt with within 10 working days	99.98	99.95	100.00	99.98	100.00	100.00	A2

As for the past three years, following “Scottish Water’s Business Stream” full separation, the figures used to calculate the OPA refer to SW’s figures only. (The 2007-08 figure was a combination of SW and Scottish Water Business Stream). This year, and for the second year running, SW reported 100%.

This year, 3,647 new written complaints were received (line B4.15) and there were a small number (130) of follow-up letters also recorded, making a total of 3,777 written complaint correspondences received (line B4.15a). The follow-up correspondence is counted when a customer has had a need to contact SW for an update or some additional information to resolve the case under consideration. Where new matters are raised, this is classed as a new complaint.

We note that there has been an 11% reduction in the number of written complaints dealt with by SW this year compared to the previous year (from 4,111 to 3,647).

Our detailed comments are as follows:

- The information continues to show a high level of compliance.
- In December 2009, SW implemented a reorganisation and the department responsible for dealing with written complaints was re-named the Complaints Management Unit (CMU) (previously Customer Relations). During this year, the CMU has been re-named the Service Review Team (SRT) to better reflect the nature of its role to help facilitate improved customer service across the whole business. We note that the SRT continues to identify reasons and patterns for complaints using root cause analysis, and has established

improved links with other parts of SW to develop action plans aimed at reducing the number of complaints.

- There have been no changes this year concerning how SW responds to written complaints. SW's philosophy is that all complaints are dealt with at the time. The specialised unit gives confidence that complaints are dealt with efficiently. The SRT will nearly always respond in writing, but in some cases a telephone call or visit from a Field Customer Adviser is considered to be more appropriate.
- SW generates the statistics from the time taken to prepare a written response that normally tells the customer what SW is doing or has done to resolve the problem.
- Many complaints take time to respond to as investigations have to be made which can include engineering works such as digging up a main. Therefore, many responses that generate the statistics are letters that inform the customer of future actions and not the action itself. As part of our audit of assessed customer service (see Section 3.17 below), we have not audited the quality of the letters. However, we noted that the letter(s) describe the work that SW is doing to resolve the problem.
- We note that the Reporting Requirements state that an allowable response is one that "informs the customer of when action to resolve his/her complaint will be taken if action cannot be taken immediately: for example 'programmed capital works are not scheduled until(month and year) and should be completed by (month and year)" whereas a reply which advises the customer "of the need to undertake additional research or other actions before being able to respond to the customer's complaint" is defined as a holding reply and does not fulfil the definition of a response. While in some cases, we believe that SW's responses do refer to further investigations these normally refer to engineering investigations that depend on external influences as to their timing (e.g. roadworks) that are outside the control of SW. We therefore believe that SW's statistics do meet the Reporting Requirements, although we believe that the definition of a holding letter is ambiguous and a closer definition of "research" and "investigations" would be helpful.
- If the complaint results in a series of correspondence from the same person, only the original complaint is reported in the statistics.
- SW does have procedures in place to re-direct complaints received directly by its contractors. We have confirmed that complaints received by the Scottish Government, WIC and WaterWatch Scotland are included. In prior years, general complaints from MSPs were not included in the statistics as they were dealt with by SW's "Public Affairs" department. As from 2009, they have been included and 205 such letters have been included in the numbers reported in Table B4.15 for the report year, compared with 347 in 2010-11.
- Initial screening of letters for complaints is done in the post room, but Advisers also direct any letters that they believe to be complaints to the SRT. While any system can miss a few complaints we believe that SW's systems and procedures should deal with complaints properly.
- Written complaints received through the service providers are received at the Wholesale Service Desk via e-mail. SW records the times on its customer contact system "Promise". SW has assigned a confidence grade of A2. We believe that this confidence grade is acceptable.

Subject to any detailed points described in the sections above, we believe that SW has properly recorded the data which forms the basis of the statistics and the resulting information is accurate. We note that SW aims for, and normally achieves, a 5 day response.

3.16.2 Percentage of lines busy as a percentage of total calls received on customer contact lines

The score for percentage of telephone lines busy as a percentage of total calls received on customer contact lines is calculated from the following data relating to the Annual Return submitted by SW:

Ref	Description	2009-10 (SW only)	2010-11 (SW only)	2011-12 (SW only)	CG
B4.22	Total calls received on customer contact lines	561945	567436	455089	A1
B4.27	All lines busy	13	981	593	A1
B4.27/ B4.22	Percentage	0.00	0.17	0.13	A1

The figures used to calculate the OPA this year relate to SW only.

Our comments on SW's input to the OPA are:

- The data that forms the basis of this statistic comes direct from SW's telephone system.
- As for the previous three years, SW has based its calculations on all telephone calls received over the 24 hour day, the normal working day of the call centre. These figures have been recorded both in the relevant lines of Table B4 and the OPA calculations. We note that the WIC definition states that the information should be over the working day, which may not be 24 hours for other companies.
- Following retail separation four years ago, SW set up a small billing department to manage those customers who it continues to bill directly. These include SW's few metered domestic customers as well as those served by the septic tank emptying service. This department, which has around 8,000 or more recorded contacts a year, was originally located at Balmore Road in Glasgow. But since December 2009, it has been located at Inverness, and as such, it is not located with the other customer services departments at Fairmilehead, Edinburgh. It has its own telephone number and uses the telephone systems at Inverness. SW reports that the systems both in Glasgow and Inverness are unable to provide the statistics required in Table B4 and so they have not been included in lines B4.22 and B4.24 above, which relate only to the principal SW customer contact lines to the customer contact centre at Fairmilehead. These relate to operational queries only, but they form the vast majority of customer calls received by SW.
- Telephone calls are logged on the "Contact Centre System Six" telephone system (previously called "Symposium"). In addition BT records all calls by site and date.
- In 2009, SW and Scottish Water Business Stream shared the Contact Centre System Six telephone system. However, on 2 April 2010 Business Stream moved to new premises, since when the System 6 has only served SW. When the system was shared, SW assured us that IT completely partitioned the system such that there is no chance of misreporting the data from the two organisations. However, the complete split between the two businesses gives added comfort that the statistics only relate to SW.
- SW uses BT's "Message Link" system during periods of high call volumes following an incident or the like, of which there can be several every month. Approximately 25% of all

calls received on customer contact lines are referred to Message Link. These statistics are taken from BT data. SW has assumed that all contacts with Message Link were answered within 30 seconds. In previous years, we have reviewed the response time on Message Link and noted that the response time is around 2 - 3 seconds. Therefore, we believe that SW's assumption is reasonable.

- This year, Scotland experienced a milder winter than the very cold weather experienced during each of the previous two winters (with their corresponding high levels of leakage and interruptions to supply). That said, SW had taken account of the learning points from the previous two winters and updated its severe weather contingency plan accordingly. However, it did not need to be invoked this year. As seen from telephone contacts, this year SW saw a reduction of approximately 112,000 calls (20%) which it attributes to the milder winter.
- SW reports the single major factor that influenced the 593 instances when all telephone lines were busy this year was due to a group of 579 instances during a 2 hour period on 20 June 2011 when BT experienced a fault at its exchange serving Fairmilehead. It is noteworthy that, if these 579 instances were discounted, then there were only 14 instances during "business as usual" for the remainder of the year. This compares with 13 instances reported in 2009-10 and 18 in 2010-11.

We have reviewed the statistics downloaded from both the telephone system and the Message Link system. We believe that the information is accurate, generally reflecting the confidence grades applied.

3.16.3 Percentage of calls abandoned as a percentage of total calls received on customer contact lines

The score for percentage of calls abandoned as a percentage of total calls received on customer contact lines is calculated from the following data relating to the Annual Return submitted by SW:

Ref	Description	2009-10 (SW only)	2010-11 (SW only)	2011-12 (SW only)	CG
B4.22	Total calls received on customer contact lines	561945	567436	455089	A1
B4.28	Total of abandoned calls on customer contact lines	10073	12180	5335	A1
B4.28/ B4.22	Percentage	1.79	2.15	1.17	A1

The figures used to calculate the OPA this year relate to SW only.

Our comments on SW's input to the OPA are:

- The data that forms the basis of this statistic comes direct from SW's telephone system.
- For our general comments on customer contacts with SW by telephone, please see Section 3.16.2 above.

- The abandoned calls have decreased to 1.17% this year from 1.79% in 2009-10 and 2.15% in 2010-11. SW considers that this is another factor influenced by the milder winter this year (see above). We agree with that assessment.

We have reviewed the statistics downloaded from both the telephone system and the Message Link system. We believe that the information is accurate, reflecting the confidence grades applied.

3.16.4 Response to Question 19 of the Customer Satisfaction Survey – “Overall, how satisfied were you with the manner in which your call was handled?”

The information for this measure is taken from the telephone survey reports “Ofwat (sic) Customer Tracking Survey – Scottish Water” undertaken and reported by McCallum Layton.

A sample of customers who have contacted SW by telephone are subsequently contacted by the independent telephone survey company and asked a series of questions to ascertain their (the customer's) experience of, and level of satisfaction with, the contact with SW.

The customer is asked to rate a number of experience/performance questions against the following levels of satisfaction: very satisfied (scores 5); quite satisfied (scores 4); neither satisfied, nor dissatisfied (scores 3); quite dissatisfied (scores 2); very dissatisfied (scores 1) and; don't know (is excluded). The percentage responses are weighted by the appropriate score to produce an average score out of maximum of 5 for each survey.

Four surveys are undertaken during the report year.

We have examined Table 17 of the four McCallum Layton reports for this reporting year relating to Question 18 “Rating of satisfaction with the Overall Manner in which the call was handled.” (NB - there is a discrepancy between question numbers – Question 19 in the OPA descriptor, and Question 18 in the associated reports). The scores are noted as follows:

Period	Date	Score
Q1 – 2011-12	June 2011	4.44
Q2 – 2011-12	September 2011	4.73
Q3 – 2011-12	December 2011	4.48
Q4 – 2011-12	March 2012	4.58
Average		4.56

The score of 4.56 (out of 5) for this year compares with 4.49 for 2009-10 and 4.46 for 2010-11.

We have limited our audit to reviewing the data abstracted from the McCalum Layton reports.

3.17 ASSESSED CUSTOMER SERVICE

This is a new measure for the 2010-15 period and is based on the following seven measures of customer service each of which has its own measurement methodologies:

- revenue and debt collection;
- complaint handling;
- information to customers;
- telephone contact hours;
- compensation policy;
- supply pipe repair policy; and
- service for disabled and elderly customers.

For 2010-11, the assessment was undertaken by WaterWatch Scotland (WWS), with the information coming from an external report and was not subject to audit by the Reporter's team.

As a result of the Public Sector Reform Act 2010, WWS was disbanded on 15 August 2011 with its statutory functions being allocated between the Scottish Public Services Ombudsmen (SPSO) and Consumer Focus Scotland (CFS).

Prior to the change, WWS produced an annual Assessed Customer Service Report (ACS) comprising the following two key components:

- the number of second-tier complaints (referred to SW by WWS) - verified with SW; and
- an annual audit of the quality of SW's responses to 25 complaints.

Both of these components are separately included in OPA calculations, using information in WWS's ACS report.

Under the new arrangements, while SPSO are responsible for dealing with complaints, and therefore able to verify the number of second-tier complaints handled by SW, neither SPSO nor CFS consider that the audit previously undertaken by WWS fitted with their current practices. As a result, SW and WICS have agreed that SW will produce an Annual Assessed Customer Service Report covering:

- the number of second-tier complaints (referred to SW by SPSO) - verified between SW and SPSO; and
- a self-assessed annual audit of the quality of SW's responses to complaints.

It was further agreed that an audit Section 2 (Complaints Handling) of the Assessed Customer Service Report would be undertaken as part of the Annual Return.

WWS audited 25 complaints selected randomly on an annual basis. In agreement with WICS, SW has moved to an ongoing self assessment whereby 25 randomly selected complaints are audited under the same criteria on a quarterly basis. The average score recorded from the four quarterly periods is used to calculate the performance for this section.

SW has presented the measure of complaints handling performance together with a statistical breakdown and scoring as a supplement to the Assessed Customer Service Report.

We have examined the various supporting tables and audited a sample of the individual complaints assessments undertaken by SW back to the source data used by the internal independent assessor, and agree with the assessments made.

The scores are noted as follows:

Period	Date	Score
Q1 – 2011-12	June 2011	1.36
Q2 – 2011-12	September 2011	1.84
Q3 – 2011-12	December 2011	1.52
Q4 – 2011-12	March 2012	1.36
Average		1.52

We believe that SW has properly recorded the data which forms the basis of the statistics and the resulting information and scoring is accurate.

We also note that SW has taken the opportunity to instigate a process whereby the internal independent assessor provides direct feedback on all cases of unacceptable performance to the team(s) responsible as part of a process of continuous improvement.

4. FINAL OPA CALCULATION

As the OPA 'calculation' is agreed between SW and the Commission, we have not reviewed SW's calculation.

