SCOTTISH WATER

WIC ANNUAL RETURN

COMMENTARIES

October 2009

A Tables

Base Information

Table A1 Connected and Billed Properties

General Comments

In general, a confidence grade of A2 has been applied to the figures reported in Table A1 for household properties in the report year, and B2 for non-household properties. Our confidence grade for the number of unmeasured household numbers (which is sourced directly from the WIC4 return) remains at A2. Measured household figures have a confidence grade of A2 as they continue to be sourced directly from corporate systems which are subject to review throughout the report year.

The Non-Household number has been sourced from data supplied via the Central Market Agency (CMA). A reduction in the confidence grade from A2 to B2 reflects this change.

Due to the opening of the retail market to competition in April 2008, the data sources for the non-household information are different from previous years. The following sections provide some background on the market structure and data sources used for the 2008/9 Annual Return as well as commentary on specific tables.

In November 2006, Business Stream was created as a wholly owned subsidiary of Scottish Water to compete with other Licensed Providers in the new market. All retail activities supporting service to non-household customers moved to Business Stream including retail billing and the retail billing system, HiAffinity. Some of Scottish Water's asset data continued to be held on the HiAffinity system until the completion of the systems developments in Scottish Water to support the migration and market opening.

All appropriate non-household data was migrated from Business Stream to the Central Market Agency (CMA) and to Scottish Water in February 2008 in preparation for market opening in April 2008.

Data sources for Annual Return

Prior to November 2006, the Annual Return was populated using data extracted from HiAffinity, the retail billing system which moved to Business Stream at the time of business separation. For the 2006/07 and 2007/08 Annual Returns, interim arrangements were put in place which enabled Scottish Water to gain controlled access to retail billing data for the purposes of regulatory reporting, pending launch of the CMA systems.

Data migration

Migration of data from HiAffinity to the CMA and Scottish Water took place in February 2008.

The primary purpose of the data held in HiAffinity, prior to market opening, was to support retail billing of customers as well as being the master version of certain other data items, such as revenue meter asset data. The data held at the CMA to support the market has a different structure compared to pre-market opening. The CMA data is based on tradeable entities, which are Supply Points, rather than customers or properties. The market data structure, including Supply Points, is set out in Code Subsidiary Document CSD0301. The migration exercise, therefore, included activities to extract the relevant data from HiAffinity; the application of business rules and logic to align the data with the requirements of the Data Catalogue in the Market Code; and some data cleansing work. Separate rules and logic were

also applied to the data being migrated back to Scottish Water to align with Scottish Water's data policies. Some unintended effects of the migration exercise were observed, the key ones are noted below.

Some data elements failed to migrate properly in February 2008 for a variety of reasons. Data rectification activities were planned and implemented throughout 2008/09 in close liaison with the CMA. Additionally, some data cleansing matters were also noted and acted upon. As a result there were a number of step changes in data over the year. All issues observed by Scottish Water have been logged and notified to the CMA. The CMA produces a market issues list so there is transparency to all participants. Where appropriate, Scottish Water is able to resolve some issues on its own but others require input from the CMA or market participants.

The number of void properties for the Non-Household being reported in the tables below has been derived by taking the connected properties minus the number of billed properties. A large increase in the number of void properties within the measured and unmeasured non-household has occurred in the report year due to data migration brought about by the opening of the wholesale market. A number of additional properties that were not billed, and not previously flagged as void, were migrated to both the CMA and Ellipse from the legacy billing system. These properties were not reported in previous returns because they were not previously flagged as void.

Alignment with 2DBP:

In order to ensure consistency with the Second Draft Business Plan, the same forecast data for 2009/10 has been used in the 2008/09 Annual Return. This means that the data sources for the 2008/09 outturn and for the 2009/10 forecast in this year's A Tables are different; 2008/09 actual information is derived from CMA settlement reports, 2009/10 forecast are derived from 2007/08 HiAffinity data.

Household properties (connected and billed)

The data for these lines has been sourced directly from the WIC 4 reports of September 2008 for report year. Report year +1 household growth has been estimated on National House Building Council and General Registers Office for Scotland data for 2009.

Comparison with Final Determination forecasts
The table below shows the growth forecast at the time of the Strategic Review of Charges for 2006 – 2010 (SR06).

Forecasts as at March 2006 (households)	2007/08	2008/09 Report Year	Change	2009/10 Forecast	Change
Total number of billed properties (Final Determination, Appendix 10)	2,232,287	2,255,100	22,813	2,277,992	22,892
Number of exempt properties	63,327	64,543	1,216	65,669	1,126
Total household properties taking services (unmeasured)	2,295,614	2,319,643	24,029	2,343,661	24,018

In the Final Determination, the number of billed households (excluding exempt) was expected to increase by 22,813 for the report year and 22,892 for the following year. Adding our own estimates for exempt properties, the expected increase was 24,029 for report year, 24,018 for report year +1, as shown in the table above.

Outturn Growth
However, the actual growth in billed properties (including exempt) was 17,566. The growth in connected properties is different to the growth in billed properties as we are now billing properties which were, in the past, connected but not billed.

Line ref.		2007/08	2008/09 Report year	Change
A1.1	Unmeasured household billed properties - potable water (including exempt)	2,317,718	2,335,284	17,566
	Number of void properties	50,930	53,637	2,707
A1.6	Unmeasured household connected properties	2,368,648	2,388,921	20,273

Non-household properties (connected and billed)

The recorded number of billed non-household properties taking water services has increased by 6,497 to 131,769. The majority of the increase occurred in the unmeasured properties (A1.3) where an additional 5,161 properties were created as part of the data migration for the introduction of the market opening. The number of billed non-household properties at 30 September 2008 was calculated using data provided by the Central Market Agency (CMA).[1]

The large increase in void properties, both measured and unmeasured, is a direct result of the migration of data from the previous billing system into the new wholesale system. A number of additional properties that were not billed as they were not flagged as void were migrated to both the CMA and Ellipse.

Line ref.	Water services - (connected and billed)	20007/08	2008/9 Report year	Change
A1.3	Unmeasured non-household billed properties – potable water (including exempt)	48,759	53,920	5,161
A1.4	Measured non-household billed properties - potable water	76,513	77,849	1,336
	Total Non-household properties taking services	**125,272**	**131,769**	**6,497**
	Void unmeasured properties and exempt	6,397	25,925	19,528
	Void measured properties and exempt	3,144	14,434	11,290
A1.8+A1.9	Total Non-household connected properties	**134,813**	**172,128**	**37,315**

[1] Subsequent to the 11 June AR09 submission, investigations into the increase in the number of unmeasured SPIDs (billed and vacant) identified that 5,914 of the SPIDs within the base data held at the CMA relate to unmeasured field troughs and taps. These SPIDs are subject to discrete unmeasured field trough charges and therefore should not also have been reported as unmeasured water SPIDs. This error arose during the migration of data from Business Stream to the CMA.

The erroneous data held at the CMA has now been amended by Scottish Water. The true underlying position for 2008/09 will become evident in subsequent CMA reconciliation reports. The non-household SPIDs reported in tables A1, P9 & P14 in the 11 June submission reflect the information held in systems and available at that time and have not been changed in this final submission.

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 17,566 as shown below:

Line ref.	Annual Return (households)	Report Yr -1	Report Yr	Growth	Report Yr +1	Growth
P3.37	Total number of billed properties	2,258,556	2,274,747	16,191	2,285,235	10,488
P3.48	Number of exempt properties	59,162	60,537	1,375	60,537	0
A1.1	Total billed unmeasured households	2,317,718	2,335,284	17,566	2,345,772	10,488

From the above table, the total number of billed properties has increased by 16,191 which is lower than forecasted in 2007/08 and reflects the slow down in house building and the number of exempt properties has increased by 1,375. The number of exempt properties is expected to remain the same going forward.

As this comes 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 increased by 74 compared with the previous year. The increase is due to the identification of additional measured households which were previously billed as non-domestic. As part of the wholesale migration preparation, these properties were subsequently identified as domestic properties and recategorised. The confidence grade of A2 is consistent with previous year.

A1.3 Unmeasured non-household billed properties

Line ref.	Unmeasured non-household – Water	2007/8	2008/9 Report year	Change	Change %
A1.3	Unmeasured non-household billed properties - potable water (including exempt)	48,759	53,920	5,161	10.58%
No line reference	Void unmeasured properties	6,397	25,925	19,528	305.27%
A1.8	Unmeasured non-household connected properties	55,156	79,845	24,689	44.76%

A significant change in the number of properties paying standard charges has occurred as a result of additional properties becoming eligible for charges via the CMA. Previously, a number of properties were deemed uneconomical to bill but the use of fixed charges for unmeasured properties has now reversed this standing. An increase of 19,528 in void properties was as a result of the migration of non-household property data to the CMA. During this migration, it was identified that these properties were, for example, incapable of receiving water services. A reduction in the confidence grade from A2 to B2 reflects the change from internally controlled data to externally reconciled data via the CMA.

A1.4 Measured non-household billed properties

An increase of 1,336 (1.7%) occurred in the report year; the increase will be explained in the P table commentary. A reduction in the confidence grade from A2 to B2 reflects the change from internally controlled data to externally reconciled data via the CMA.

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 53,637.

A1.8 Unmeasured non-household connected properties

A significant change of 24,689 occurred in the number of properties that have been reported connected for the report year. An increase of 19,528 in void properties was a result of the data migration for market opening.

The large increase in number of void properties is a direct result of the migration of data from the previous billing system into the new wholesale system. A number of additional properties that were not billed and not previously flagged as void were migrated to both the CMA and Ellipse. A reduction in the confidence grade from A2 to B2 reflects the change from internally controlled data to externally reconciled data via the CMA.

A1.9 Measured non-household connected properties

A significant change of 12,626 occurred in the number of properties that have been reported connected for the report year. An increase of 11,290 in void properties was a result of the opening of the retail market and the migration of non-household property data to the CMA for market opening; the increase will be explained in the P table commentary. A reduction in the confidence grade from A2 to B2 reflects the change from internally controlled data to externally reconciled data via the CMA.

	Measured non-household – Water	20007/08	2008/9 Report year	Change	Change %
A1.4	Billed properties	76,513	77,849	1,336	1.75%
No line reference	Void properties	3,144	14,434	11,290	359.10%
A1.9	Measured non-household connected properties	**79,657**	**92,283**	**12,626**	15.85%

A1.11 Number of properties connected during the report year

The number of properties connected in the report year of 18,681 is lower than forecast in 2007/08 and reflects the change in the economy over the last year. The forecast for 2009/10 also shows a downward trend. The confidence grade of A2 reflects the fact that the same systems and processes are in place as in the previous report year.

A1.12-16 Billed Properties – Foul Sewerage

A1.12 Unmeasured household billed properties

The growth of 15,662 unmeasured billed households for sewerage is consistent with the 17,566 growth in those households billed for water service at line A1.1. The confidence grade remains unchanged at A2

A1.13 Measured household billed properties

An increase of one measured household property occurred in the report year and the confidence grade of A2 has not altered.

A1.14 Unmeasured non-household billed properties (including exempt)

A minor reduction of 1,095 in the number of billed properties is due partly to the switch to metered charging and data migration for market opening. The increase in line A1.3 has not been reflected in this line as these SPIDs did not have a waste connection.

Line ref.	Unmeasured non-household – Waste	2007/8	2008/9 Report year	Change	Change %
No line reference	Properties paying standard charges	40,768	39,673	-1,095	-2.69%
No line reference	Exempt properties	4,429	4,114	-315	-7.11%
A1.14	Unmeasured non-household billed properties (including exempt)	**45,197**	**43,787**	**-1,410**	-3.12%

The confidence grade has been changed to B2, reflecting the change in the source data from Scottish Water to the CMA.

A1.15 Measured non-household billed properties

There has been a decrease of 405 in measured non-household properties receiving wastewater charges during the reported period. This reduction is considered to be the early signs of the economic downturn.

A significant increase of 9,494 in the void properties, in this report year, is a result of the migration work to support the CMA in the market opening as detailed above.

Line ref.	Measured non-household – Waste	2007/08	2008/9 Report year	Change	Change %
A1.15	Measured non-household billed properties	57,609	57,204	-405	-0.70%
	Void properties	1,994	11,488	9,494	476.13%
A1.20	Measured non-household connected properties	**59,603**	**68,692**	9,089	15.25%

The confidence grade has been changed to B2, reflecting the change in the source data from within Scottish Water to the CMA.

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 51,662. The number of voids is calculated by subtracting A1.12 from line A1.17

A1.19 Unmeasured non-household connected properties

In addition to the reduction of 1,410 billed properties under line A1.14 above, the number of non-household properties reported as void has increased by 14,462. This was primarily as a result of the migration of the data to the CMA.

Line ref.	Unmeasured non-household – Waste	2007/8	2008/9 Report year	Change	Change %
A1.14	Unmeasured non-household billed properties (including exempt)	**45,197**	**43,787**	**-1,410**	**-3.12%**
	Void unmeasured properties	7,854	22,316	14,462	184.14%
A1.19	Unmeasured non-household connected properties	**53,051**	**66,103**	13,052	**24.60%**

The confidence grade has been changed to B2, reflecting the change in the source data from within Scottish Water to the CMA.

A1.20 Measured Non-household connected properties

Please refer to the commentary for line A1.15.

A1.22 Number of properties connected during the report year

New properties connected are described 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

Due to our tariff structure, there are zero unmeasured billed properties not billed for property drainage.

A1.24-26 Measured and Unmeasured Billed Properties (including exempts) not billed for Property Drainage

A substantial change in lines A1.26 has occurred as a result of migration of wholesale data.

Line ref.	Unmeasured non-household – Waste	2007/8	2008/9 Report year	Change
A1.24	Measured household billed properties not billed for property drainage	9	9	0
A1.25	Unmeasured non-household billed properties not billed for property drainage	27	78	51
A1.26	Measured non-household billed properties not billed for property drainage	405	1,297	892

The confidence grade has changed to B2 for both A1.25 and A1.26, reflecting the change in the source data from within Scottish Water to the CMA. The confidence grade for A1.24 remains at A2.

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

This number has increased by 1,002 to 12,192 reflecting the change in reported properties as part of the CMA migration.

The confidence grade has also been changed to B2, reflecting the change in the source data from within Scottish Water to the CMA.

A1.30-34 Connected Properties – Surface Drainage

A significant change in line A1.31 highlights an increase of 591 to 754 properties. This is largely due to a number of properties being identified as domestic surface water only properties which were billed as part of the non-domestic billing process. These properties have been segregated from the non-domestic properties as part of the CMA migration and are now included in line A1.31.

A1.32-33
The confidence grade for the connected non-domestic properties has decreased from A2 to B2, reflecting the change in the source data out of Scottish Water to the CMA.

A1.35 Number of properties connected during the report year

This line matches line A1.22. The new properties connected are described in the commentary to A1.11 and the confidence grade remains at A2.

A1.36-39 Trade Effluent

A1.36 Billed Properties

The number of billed properties continues to fall as the number of closures outstrips the number of new properties requiring to be processed under the TE guidelines. They fell from 1,631 in 2007/08 to 1,493 in the 2008/09 report year. This downward movement has been affected by the change in Scottish Water's policy to remove small/low risk discharge points from the sampling and TE Charging programme.

A reduction in the confidence grade from A2 to B3 reflects the change in the source data from Scottish Water to the CMA.

A1.37 – Connected Properties

The number of connected properties has decreased from 3,553 to 3,386. The reduction in line A1.36 will not be reflected as consented properties remain live for a period after a site closes. Therefore, sites that are no longer billed for trade effluent are still recorded as connected for the service. A reduction in the confidence grade from A2 to B3 reflects the change in the source data out of Scottish Water to the CMA.

During 2008/09, information was collected which shows that approximately 670 premises which hold a consent are either closed or no longer require to hold a discharge consent. It is Scottish Water's intention to terminate these consents during 2009/10, hence the forecast for A1.37 is 2,717.

A1.38 Trade Effluent load receiving secondary treatment (BOD/y)

The total BOD load receiving secondary treatment has decreased from 30,306t to 27,116t, in line with the reduction in the number of billed properties (line A1.36).

A reduction in the confidence grade from A2 to B2 reflects the change in the source data out of Scottish Water to the CMA.

A1.39 Trade Effluent load receiving secondary treatment (COD/y)

The total COD load receiving secondary treatment has increased from 58,217T/yr to 60,308T/yr. This is at variance with the decrease in total BOD load. Currently the detailed information required to understand these movements is unavailable as a result of the migration to the CMA. A reduction in the confidence grade from A2 to B2, reflects the change in the source data out of Scottish Water to the CMA.

Table A2 Population, Volumes and Loads

A2.1 - A2.9 Summary – Population

Population

Population data is based on General Register Office for Scotland (GROS) 2006 based population projections (total for Scotland). For this report year, there is an increase in winter population of 23,095 compared against the 2008 Annual Return reported position. The reported population is approximately 5,000 higher than last year's forecasted position for 2008/09. This is due to last year's Annual Return figures being partly based on GROS 2004 based population projections. The June 2009 Annual Return is based on the full 2006 based population projections at a Local Authority and Scotland level.

Likewise, for last year's Annual Return we used ratios of total to occupied households and populations from the last complete dataset supplied by GROS based at 2004. These ratios were then applied to GROS 2006 based population projections for Scotland to obtain the number of people in households and the number of people not in households. Connection rates from WIC4 2007 were applied to determine the population with water and wastewater services.

As a full GROS 2006 dataset was available for this Annual Return, the number of people in households and not in households was taken directly from this dataset, with the population with water and wastewater services updated to WIC4 2008 connection rates.

A2.10-19 Water Balance

A2.10 - 11 Water treated at own works to own customers & Distribution input treated water

Lines A2.10 and A2.11 report 'water treated at own works to own customers' and '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 2,271.2 Ml/d to 2,143.7 Ml/d principally due to reduced total leakage.

Following DI measurement and reporting enhancement in the Annual Return 2007/08, Scottish Water has continued to improve the provision and accuracy of DI related information through project completion/continuation. Projects undertaken within Asset Management through Information, Data and Reporting (IDR) & Tactical, Planning & Performance (TPP) functions include:

- Continued DI Site surveys and associated meter confidence grading.
- Compilation of a remedial / replacement list of potential meters for investment within SR10 highlighted through our Heat Map application.
- Data loggers deployed to cover >90%% of DI volume.
- Continued independent flow verification and calibration of Scottish Water DI metering estate.
- Continuous development of our data warehouse (Z-One), for reporting and data management functionality
- Weekly, monthly and annual validation/reporting of DI Information
- Continuous development of automated reporting utilising logger, telemetry, manual or estimated data.
- Enhanced DI reporting at Scottish Water & Regional level.

- Increased number of users of Corporate DI data across Scottish Water Business functions.

DI data continues to be collected from an increased number of loggers, improved telemetry and manual collection process to a data warehouse (Z-One), which stores flow data and asset information in conjunction with maintenance, verification and survey reports. This enables visibility of detailed flow information and thus an increased confidence in the data provided.

DI is being reported with a B3 confidence grade, compared to C3 in the previous year. While the availability of the measured flow data has decreased slightly from 96% to 94% during the reporting year, there has been higher confidence in the estimated values used. The increase in estimated data was mainly due to three priority sites (Bradan, Daer & Camphill) which had meter issues during the reported period. These sites are now reporting measured data.

A2.12 Unmeasured household volume of water delivered

Unmeasured household volume of water delivered has increased from 863.3 Ml/d to 882.3 Ml/d. The principal influence has been from movement in underground supply pipe losses (UGSPL) which have increased to 56.04 l/prop/day from last year's reported figure of 47.05 litres/prop/day (reported in lines A2.31 to A2.36). Increased Active Leakage Control (ALC) and other leakage management activities have provided an increased number of UGSPLs being located. The confidence for this line has improved from C4 to B2 to reflect the improved confidence associated with the unmeasured household PCC, which is now exclusively reported from Scottish Water's Continuous Area PCC Monitor (line A2.25).

A2.13 Measured household volume of water delivered

Measured household volume of water delivered has risen slightly compared to the previous year. The percentage meter under-registration has increased from 4% to 4.1%. The meter under-registration is taken from the 2007/08 supporting information document for the OFWAT Service and Delivery report. The confidence grade reported with this line is B2 compared to A2 in 2007/08. The confidence grade has lowered to reflect changes to the way in which household meter reads are stored by Scottish Water. We no longer share a billing system with non-household properties and meter readings are procured from contractors and input to Scottish Water's corporate system for the production of bills.

A2.14 Unmeasured non-household volume of water delivered

The reported unmeasured non-household volume of water delivered has reduced from 64.681 Ml/d in 2007/08 to 35.265 Ml/d in the report year. This results from substantial analysis undertaken by Scottish Water to assess the consumption by these properties since last year.

For the 2006/07 and 2007/08 report years we estimated the consumption of unmeasured non-households by interpolation from the consumption of measured non-households. That methodology embodied an assumption that consumption is dependent on only two variables: the WIC industry sub-sector and the rateable value. The implication was that two properties with the same industry sub-sector and rateable value would consume the same, regardless of whether they were metered or not. This methodology was used until and including 2007/08 to derive the unmeasured non-household consumption.

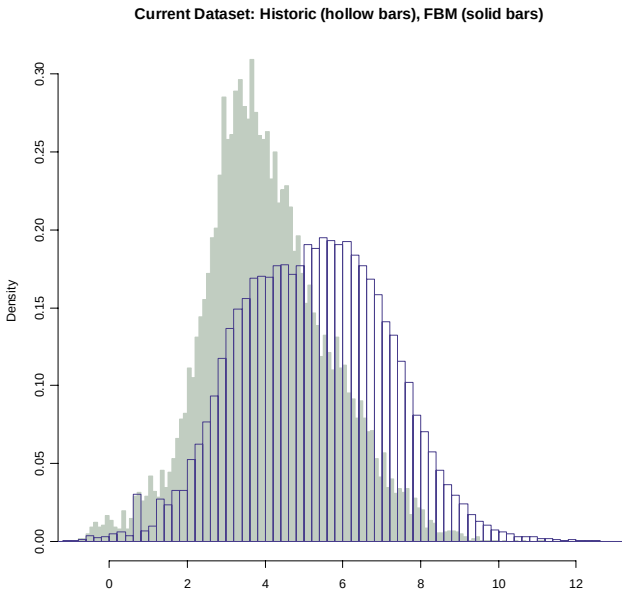


Figure A2.14.1: Consumption of FBM and historically metered properties

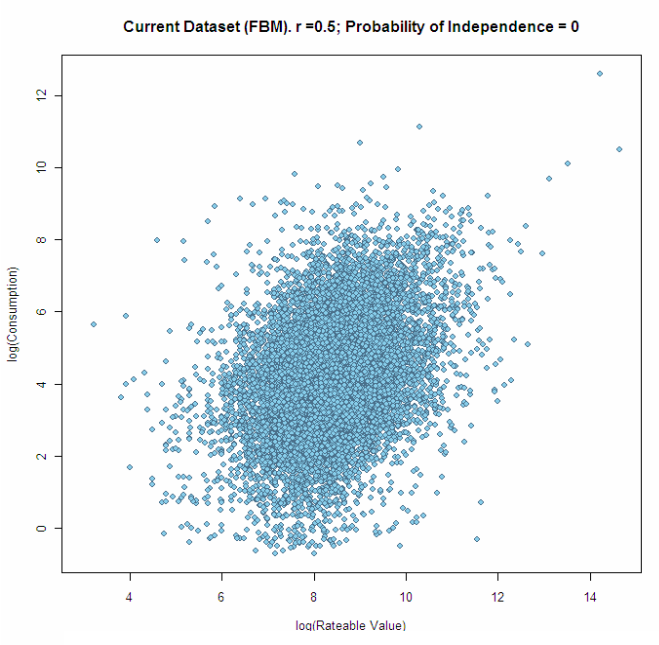
Full business metering has progressed this year and now most formerly unmetered non-households are metered, albeit many of these have not yet had two valid meter readings to enable us to determine consumption. These newly metered properties continue to be billed as unmeasured and there is only limited metering data available through the CMA. We therefore procured a third party to read over 13,000 meters to assess the consumption of these formerly unmetered properties.

The results show that we were wrong to assume that consumption is independent of whether a property is metered. Figure A2.14.1 shows the analysis of these full business metering (FBM) properties in grey by comparison with historically metered properties (blue bars). The volumes consumed by FBM properties are consistently lower.

Moreover, our analysis has demonstrated that our assumption that we can determine consumption from the WIC industry sub-sector and the rateable value alone is incorrect. If we perform the analysis using two different source datasets from which to interpolate the consumption of the remaining unmetered properties – one dataset using all metered properties and the other using only FBM properties – we get very different results, despite segmenting the properties by WIC sector and rateable value. The results vary by a factor of about four.

The analysis remains uncertain, partly because we no longer have access to WIC sub-sector codes for supply points and have to rely on the aggregated WIC sector codes.

Although we have limited confidence in the application of WIC sector codes to inform our analysis, we have now demonstrated a statistically significant correlation of consumption with rateable value. Figure A2.14.2 shows the correlation. While there is obviously considerable scatter of data, there is also a clear trend of increasing consumption with rateable value.



At the time we submitted 2DBP, we had not had the opportunity to analyse the FBM meter readings statistically. However, from initial meter readings we performed analysis to derive the average consumption of an FBM property, independent of rateable value. We used this to determine our assessment of consumption as about 28 Ml/d for all unmeasured properties (including those billed as unmeasured).

For the full report year 2008/09, we have assessed the consumption based on rateable value, rather than assuming a constant consumption per property. The result is a higher reported consumption than in 2DBP, although this is well within the error band consistent with the confidence grade of C5 that we are applying to the data this year. Our reported consumption is based on 22.8 Ml/d consumption by the 39,978 properties for which we have no meter readings, derived from consumption of 8.2 Ml/d by those FBM properties for which we do have readings. Of those without meter readings, 2,007 have no rateable value recorded and 7,817 have a rateable value less than £600 and consequently negligible consumption.

	AR08	**AR09**
Occupied and exempt properties	*48,759*	*53,920*
Consumption from FBM properties with valid meter readings	-	8.2 Ml/d
Interpolated consumption of unmetered properties (including properties without two valid meter readings)	-	22.8 Ml/d
Interpolated consumption of unmetered properties from consumption of ALL metered properties	62.33 Ml/d	-
Underground supply pipe leakage	*40.66 l/prop/d*	*48.43 l/prop/d*
Underground supply pipe leakage	1.98 Ml/d	2.61 Ml/d
Water delivered	**64.31 Ml/d**	**33.61 Ml/d**
Void properties (vacant)	*6,397*	*25,925*
Internal plumbing losses (voids)	*13.67 l/prop/d*	*11.93 l/prop/d*
Underground supply pipe leakage (voids)	*43.51 l/prop/d*	*51.83 l/prop/d*
Internal plumbing losses (voids)	0.09 Ml/d	0.31 Ml/d
Underground supply pipe leakage (voids)	0.28 Ml/d	1.34 Ml/d
Water delivered to void (vacant) properties	**0.37 Ml/d**	**1.65 Ml/d**
Total line A2.14 unmeasured non-household volume	**64.68 Ml/d**	**35.26 Ml/d**

We acknowledge that the reported unmeasured non-household volume remains uncertain until more valid meter readings are processed by the CMA for these properties. We have reflected this uncertainty in the C5 confidence grade we have assigned to this data for the report year.

A2.15 Measured non-household volume of water delivered

An overall reduction of ML/d from 464.44 to 430.83 is partly due to the downturn in the economy and the lower demand for water and a number of Supply Points and a dependence on outside data. The core data supplier has changed from Business Stream to a combination of Scottish Water's Ellipse system and CMA invoice data. The total volume delivered was calculated by taking, where possible, actual meter reads for the reported year (85% of volume based on actual meter reads): the balance used the CMA supplied Licensed Providers yearly estimate where no valid set of actual meters reads existed.

Additional to the Ellipse volume, a number of adjustments have been made, see the table below.

	Number of Meters	**AR09 Volume Ml/d**
Positive volume in CMA reports where the meter can be matched to a meter in Ellipse (SW System)	72,814	366.5
Remove erroneous negative volumes included in CMA reports	1,121	6.1
Zero Volume included in CMA reports where property is not vacant	1,003	2.1
Meter in Ellipse with volume recorded and no vacancy flag but not in the CMA dataset.	35,090	33.4
Meters in Ellipse data with Zero Volume	22,568	0
Total before adjustments	**132,596**	408.1
Remove - Raw Water		-9.08
Remove - FBM as volume is account for in unmeasured volume		-9.54
Add - Aberdeen Shipping Volume		2.25
Add - Corrections for meter rollovers and sites for which field staff have confirmed occupancy and consumption		18.85
Total Volume before meter under registration (4.8%)		**410.58**
Add Meter Under Registration (4.8%)		19.71
Add Under ground supply pipe leakage		0.54
Total Volume		**430.83**

The reduction in the confidence grade from A2 to B3 reflects the change in the data source.

A2.16 Total volume (potable water)

Total volume of potable water is being reported with a confidence grade of B3 as in the previous reporting year.

A2.17 Water taken unbilled

Water taken unbilled is the sum of:

A2.27	Water taken unbilled legally
A2.28	Water taken unbilled illegally and
A2.29	Distribution system operational use

The confidence grade remains at C4 as they are based on estimated volumes.

A2.18 Leakage – Distribution losses (incl trunk mains and service reservoirs)

Distribution losses have decreased from 808.5 Ml/d to 727.9 Ml/d due to significantly increased leakage reduction activity. This figure is being reported with confidence grade B3, unchanged from 2007/08. This is based on DMA reportability of >80% (actual 84%).

A2.19 Overall water balance

The reconciliation of the water balance components to measured distribution input (which is the gap between the figures reported using the top-down and bottom-up methodologies for reporting leakage) was 8.5% in 2005/06, 5.4% in 2006/07, 1.2% in 2007/08 and 4.1% in this reporting year (2008/09). This increase in reconciliation error is thought to be due partly to a reduction in reported Non Household consumption.

The overall water balance is reported as confidence grade B3. In the previous year the confidence grade was C3. The change in confidence grade associated with this line is due to improvements within a number of components of the water balance, notably, distribution input and the accuracy associated with the new Scottish Water Continuous Area PCC Monitor.

A2.20 Water delivered – non potable

No significant change has occurred in the report year, the confidence grade remains the same at C5 as a significant volume is based on capped agreement which is not currently metered.

A2.21-8 Water delivered – components

A2.21 & A2.22 Bulk supply imports/exports

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

A2.23 and A2.24 Estimated water delivered per unmeasured and measured non-household.

The significant reduction in line A2.23 from 1,326 l/prop/d to 654 l/prop/d is driven by an increase in line A1.3 and a reduction in line A2.14 as detailed above.

The significant reduction in line A2.24 from 6,070 l/prop/d to 5,534 l/prop/d is driven by an increase in line A1.4 and a reduction in line A2.15 as detailed above.

A2.25 Per capita consumption (unmeasured household – excl s/pipe leakage)

This year the Unmeasured Household Per Capita Consumption has been derived using data gathered exclusively from Scottish Water's Continuous Area PCC Monitor. The Monitor provides an accurate assessment of household demand in accordance with UKWIR best practice for unmeasured per capita consumption monitors. The Monitor was established during 2007/08 & 2008/09 and provides national coverage with both the Scottish mainland and islands represented across 114 zones.

The monitor was designed using an optimal statistical sample of 100 PCC zones allowing for representation of CACI ACORN Groups across Scotland.

The monitor went live with 52 reporting zones in April 2008 increasing to 100 zones reporting in March 2009. In AR10 the additional 14 zones will be used to facilitate the estimation of PCC at a regional and water resource zone level. It is planned to further enhance the monitor during 2010 - 2014.

The PCC reported using the Monitor for the Annual Return 2008/09 is 153.02 litres/person/day (l/p/d) which is marginally lower than the Annual Return 2007/08 reported figure of 154.24 l/p/d. The latter was a value estimated from a profile based on previous Scottish Water PCC studies and E&W comparator data sets. It was originally anticipated that our PCC would only be able to be reported using a hybrid model, but we consider reporting PCC from the monitor for the whole year reflects the confidence we now have in the Scottish Water Continuous Area PCC Monitor. Also, while there was a reduced sample set (c. 50 / 60 PCCAs) in the early months, the distribution of PCC zones matched the required ACORN distribution reasonably well.

A2.26 Per capita consumption (measured household – excl s/pipe leakage)

The calculation remains unchanged from the previous reporting year. The confidence grade has changed from B2 to B3. This reflects the decreased confidence grade associated with the household volume of water delivered (line A2.13) as a result of the PPC Monitor as outlined above.

A2.27 Water taken unbilled – legally

The volume reported as water taken legally unbilled (WTLU) has decreased from 63.2 Ml/d in 2007/08 to 60.2 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. Reasons for the changes in volumes are as follows:

- Decrease in fire service use (from 14.97 Ml/d to 13.23 Ml/d); the same methodology has been used as the previous year, the change is due to changes in the number of fires, fire crews and fire service vehicles reported by the Fire Service.
- Increase in licensed standpipe use (from 12.41 Ml/d to 13.99 Ml/d); the increase is due to a rise in the number of standpipe licences issued.
- Increase in WWTW use (from 15.73 Ml/d to 16.62 Ml/d); readings taken at 70 WWTWs during the report year have been used in the calculation; these works are representative of the various types and sizes of WWTW and account for 31% of PE throughout the reporting year; the methodology to which the meter reads are applied is the same as the previous year.
- Decrease in Scottish Water Offices and Depots use (0.32 Ml/d to 0.18 Ml/d); the same methodology has been used as last year; the decrease in volume is partly due to the reduction in the number of Scottish Water staff being used in the calculation; the usage volumes per member of staff have remained the same.

- Decrease in unbilled field trough usage (from 16.35 to 13.00 Ml/d); the results of a further 54 DMA studies undertaken in 2008 (the volume reported the previous year was based upon 8 DMA studies) resulted in a reduction in the estimated number of unbilled troughs from 29,295 to 19,725; although there was an increase in the volume of water used per trough, the estimated reduced number of unbilled troughs has resulted in a 3.35 Ml/d reduction in the volume of water reported for this component.
- Decrease in building water use (from 2.31 to 2.17 Ml/d); due to the impact of business separation, the methodology for this component has been amended slightly but the method is still based on the average volume of construction water used per property and an approximation of the number of properties constructed during the reporting year; the figure is included as WTLU because developers are billed for a construction licence rather than for a volume of water.

A2.28 Water taken unbilled – Illegally

The volume of water reported as water taken illegally unbilled (WTIU) has risen from 3.07 Ml/d in 2007/08 to 3.47 Ml/d in the reporting year.

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

Void property use – the volume has increased very slightly from 0.80 Ml/d to 0.83 Ml/d.

Hydrant misuse - the number of events reduced in 2008/09 compared to 2007/08 which has resulted in a 0.03Ml/d decrease in volume to 0.48 Ml/d.

Illegal standpipes - the volume has increased from 1.76 Ml/d to 2.16 Ml/d due to an increase in the number of illegal standpipes reported. The campaign initiated in 2007/08 aimed at minimising unlicensed standpipe use has continued.

A2.29 Water taken unbilled – Distribution system operational use

The volume of water reported as Distribution System operational use (DSOU) has decreased from 4.89 Ml/d in 2007/08 to 3.58 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:

- Reservoir Cleaning – the volume has decreased from 0.62 Ml/d to 0.32 Ml/d; the methodology is the same as that used in the previous reporting year; although the number of tanks cleaned is similar to the previous reporting year, the storage capacity of those tanks cleaned is far less resulting in a lower volume of water used.
- Mains Rehabilitation & New Mains - the volume used has increased from 0.99 Ml/d to 1.12 Ml/d; this is due to an increase in the length of new mains used within the calculation for this component.
- Programmed Flushing & Swabbing - the volume of water has decreased from 1.77 Ml/d to 0.57 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 increased slightly from 0.50 Ml/d in 2007/08 to 0.53 Ml/d.
- Reactive Water Quality Incidents – there has been a small decrease in volume from 0.89 Ml/d to 0.83 Ml/d; the methodology applied is the same as the previous year.
- Planned Water Quality Sampling – the volume reported is very similar to the volume reported the previous year (0.12 Ml/d Annual Return 2007/08, 0.11 Ml/d Annual Return 2008/09); there has been no change in methodology.

A2.30 Total leakage – total losses

Historically, Scottish Water has reported total leakage based only on the Integrated Flow Method. However, this year, for the first time, due to improved DMA coverage / operability and an acceptable Top-down / Bottom-up reconciliation range within the Water Balance, Scottish Water can report a 'Maximum Likelihood Estimation' (MLE) leakage assessment. It has been possible to report leakage more confidently using the 'Bottom-up' approach due to the increased confidence in DMA leakage assessment and due to the closeness with reported 'Top-down' leakage. An MLE assessment, comparable with England and Wales companies, is now possible with the increase in confidence. There has also been a requirement from WIC to report leakage for OPA purposes on a 'like for like' basis, baselined on 2007/08 leakage reporting to quantify actual pure 'volume reduction'.

The various Total Leakage values are discussed below, but the overall leakage reduction is primarily due to:

- The appointment of regional leakage managers working towards leakage targets, reporting to the head of Leakage Delivery.
- Increased ALC activity leading to greater volume of network repairs.
- Pressure management programme.
- Increased DMA operability & reportability.
- Programmed reservoir assessment and remedial action.
- Increased awareness within the business including; short interval control through a weekly Leakage Campaign Meeting, instigation of a leakage hotline and visible poster campaign.
- The appointment of Scottish Water's Water Balance team responsible for monthly and annual Water Balance calculation, reporting to the Leakage Planning Manager.
- Data improvements within Water Balance reporting, enabling improved leakage targeting.

Using the Integrated Flow Method, Total leakage has reduced from 924.0 Ml/d in 2007/08 to 868.1Ml/d in the report year and this is reported in Line A2.30. (The minor discrepancy in the figure reported, is due to the Troughs UGSPL of 0.96 Ml/d not being included in the table value).

In recent years the trend in total leakage reduction (reported using the integrated flow method) is:

Report year	Leakage (Ml/d)
2003/04	1,146
2004/05	1,139
2005/06	1,104
2006/07	1,004
2007/08	924
2008/09	868

'Bottom Up' leakage was calculated as being 897.8 Ml/d in 2007/08 and this has reduced to 775.9 Ml/d in this reporting year.

When the MLE statistical technique is applied to the integrated flow method (Top-down) and the bottom-up assessment, a Total Leakage value of 814.2 Ml/d is calculated. This is based on the reconciliation error associated with leakage being within the recognised 5% of DI.

The overall MLE calculation is associated with the appropriate MLE confidence grades (mid point of WIC CGs), being assigned to WB components in line with WIC own CGs.

The OPA 'like for like' Total Leakage value of 801.7 Ml/d has been calculated using 2007/08 data methodologies or 2007/08 data if the methodology could no longer be applied e.g. household population (data methodology), Non Household volumes comparable with 2007/08 (data).

The trend of total leakage reduction is forecast to continue.

For the 2008/09 Annual Return the total losses are reported in Table 2, Line A2.30 as the residual of the top down water balance. A change in the confidence grade to B3 reflects the increase in the line A2.1

A2.31 – A2.36 Leakage – supply pipe losses

The confidence grade for the average rate of loss through supply pipes remains at C3 and applies the same methodology as the previous year to data from seven of the eight regions.

The calculation of lines A2.32 – A2.36 has again been completed based on the breakdown of supply pipe leakage by OFWAT reporting companies.

It should be noted that Line A2.31 also includes underground supply pipe leakage for troughs (0.96 Ml/d). The estimated number of unmeasured troughs is not included in the number of unmeasured connected properties. The underground supply pipe leakage for unmeasured non households is applied to the number of unmeasured troughs.

A2.37 Meter under-registration (measured households) (included in water delivered)

Scottish Water has derived meter under-registration from the average reported in the 2007-08 OFWAT 'Security and Delivery' supporting information document. Meter under-registration has increased slightly from 4.0% to 4.1%. When applied to the domestic metered volume the total measured household meter under-registration is 0.010 Ml/d.

A2.38 Meter under-registration (measured non-households) (included in water delivered)

The 2007-08 OFWAT 'Security and Delivery' supporting information document has been used to derive a figure for non-household meter under-registration. Meter error remains constant at 4.8%. The decrease in the meter under-registration volume from 21.27 Ml/d to 19.71 Ml/d is due to a decrease in the volume of water delivered to measured non-households.

Scottish Water does not undertake routine meter calibration and therefore does not have company specific meter under-registration figures. The current approach is that meters are only changed or replaced when customer contacts indicate that bills are incorrect or problems with meters have caused disruption to water supplies.

Scottish Water is currently reviewing its meter replacement policy.

A2.39-45 Sewage Volumes

A2.39 Unmeasured household volume (including exempt)

The unmeasured household volume has decreased from 687.27 Ml/d to 687.10 Ml/d. The slight decrease in the waste volume is a result of the reduction in population reported in the year. The confidence grade has remained at B3.

A2.40 Measured household volume

No significant change has occurred in the report year and the confidence grade remains at A2.

A2.41 Unmeasured non-household foul volume (including exempt)

The reduction of 34.42 Ml/d in the foul volume reported is a consequence of analysis carried out as part of the impact of the full business metering (FBM) project. It has identified, as expected, that the remaining unmeasured customers will draw less water than was previously estimated. This estimate is now based on use of actual data from the installed FBM meters to establish the volumes. For this reason the confidence grade remains at B3.

A2.42 Measured non-household foul volume

The total volume of foul waste from measured non-households has increased by 6.75% compared with the prior year, reflecting the introduction of the FBM meters as detailed above. The trend in the increase in volume of meter waste is expected to rise as more and more of the FBM meters acquire meter reads. The confidence grade has changed to B3, reflecting the change in the source of data being the CMA rather than internal.

A2.44 Total Volume

The confidence grade remains at B3.

A2.45 Volume septic tank waste

The volume of septic tank waste increased from 37.8Ml to 39.57Ml over the reporting period. A significant increase in private septic tank volumes was noted. This is due largely to improvements Scottish Water has introduced into the septic tank planning process and the introduction of IMS devices, from Autumn 2008. It is likely that there was a degree of under reporting last year on private septic tank volumes. Correspondingly a reduction in the volume of public septic tanks was observed. This is attributable to a combination of decreasing de-sludge frequencies, a 3% reduction in tankered sludge volumes and greater volumes discharged direct to sludge treatment centres.

A2.46-60 Sewage Load (BOD/yr)

A2.46 – 47 Unmeasured and measured household load

The household load reported is based on household occupancy multiplied by 60g per head per day. No significant change has occurred from the prior year and the confidence grade remains the same for both.

A2.48 – 49 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 A2.41 and A2.42. The reduction in the volumes reflects the water delivered in A2.14

and A2.15. No significant change in the process has occurred and the confidence grades remain the same as the prior year.

A2.50 Trade effluent load

The total BOD load discharged to the network has reduced from 32,042t to 28,889t. When comparing this with A1.38, some 1,977t was discharged to WWTWs which did not provide secondary treatment.

A2.52 – 54 Septic tank loads

An increase from 105.65t to 178.84t is being reported on line A2.52, this reflects the introduction of operational changes within Scottish Water. A higher volume of septic tank waste is being discharged to works inlets as an alternative to sludge treatment centres when compared to prior years.

The reported septic tank loads (lines A2.52 and A2.53) are derived by applying an assumed load of 6,543g/m^3 to the volumes removed from private and public septic tanks respectively. No significant change has occurred from the prior year and the confidence grade remains at B3.

A2.56 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.

A2.57 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.

A2.58 Equivalent population served (resident)

The figure in A2.58 is the total load divided by 60g, which equates to the equivalent population and has not significantly changed from the prior year. Any change in volume reflects the change in population. No significant change has occurred and the confidence grade remains the same as the prior year.

A2.59 Equivalent population served (resident)(numerical consents)

During the report year a number of studies have been undertaken to align sewered areas spatially. These updates reflect the change being allocated to PPP sites.

The figure in A2.59 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.

A2.60 Total load receiving treatment through PPP treatment works

In the report year a slight reduction from 73,070t to 70,657t has occurred due to the reduction in load from unmeasured non household as seen in A2.41 above. No significant change has occurred and the confidence grade remains the same as the prior year.

A2.61-62 Sewage Sludge Disposal

The reported mass of sewage sludge recycled was 121.791ttds in the report year, of which the majority came from the PPP/PFI works. This year all figures reported were actual data taken direct from the Gemini system, and no theoretical data from the model was utilised. No significant change has occurred and the confidence grade remains the same as the prior year.

The mass of sewage sludge recycled in the reporting year was 121.8ttds of which 100.4ttds was attributable to PPP/PFI and 21.4ttds was directly from Scottish Water Treatment Centres. Again all the figures used were from corporate systems and no theoretical data was utilised.

An increase in the volume of enhanced treated sludge was noted 1.17ttds, largely attributable to Kinneil Kerse. This Sludge Treatment Centre saw a large increase in tankered imports over the period, both Scottish Water sludge's and third party waste. Conversely conventional sludge production was reduced by 0.93ttds from the previous period. This was attributable to sludge being diverted from Cumnock to Girvan during the Cumnock digester maintenance period and to the closure of the Kelso digester.

No sludge was recycled to land restoration in the reporting period due to lack of land bank or other outlets.

A further, albeit small, reduction in sludge taken to landfill was noted 0.02 ttds.

B Tables

General Comments

Alignment with 2DBP:

The Annual Return 2008/09 return is based on an actual cut of data, as at 31 March 2009. The data used to forecast 2DBP outturn was based on a mix of data cut from both 31 March 08 (Annual Return 2007/08) and updated data available at September 2008. This was the best information available at that time. Therefore Annual Return 2008/09 and 2DBP numbers will not always align directly.

Table B1 Restrictions on Water Use

B1.1-1.3 Restrictions on Water Use

This year we continued to provide unconstrained services with 0% of the population affected by hosepipe bans.

Table B2 Pressure and Interruptions

General Comments

The overall number of low pressure properties has reduced by almost 50% from 5,907 in March 2008 to 2,974 in March 2009. Targeted investment and operational changes combined with operational changes, have improved pressure to 2,339 properties during 2008/09. There has also been a net reduction of 811 properties resulting from our field logging (1,648 removed and 837 properties added). It is likely that our field logging is identifying general improvements across the network from our operational improvements but, where we cannot assign a change to a known operational intervention, we record the change as better information. 217 properties were added as a result of asset deterioration and operational changes.

For interruptions, we report from our Corporate Data Repository (CDR) where all the information relating to interruptions is stored. Information is input to this system in two ways; direct from our hand-held devices or manually by contractors or Scottish Water staff using interruptions paper forms. Standard corporate reports, using Business Objects, are used for both corporate and regulatory reporting of interruptions figures. The CDR is the one source of data on interruptions and all reporting is derived directly from here with no extrapolation of data. As a result, a confidence grade of A is applied to the data.

A summary of the major incidents in the year i.e. those affecting more than 1,000 properties is given below:

		Interruption Banding				
Incident Location	**date**	**>3 <6 hrs**	**>6 <12 hrs**	**>12 <24 hrs**	**> 24 hrs**	**total**
35 FREELAND PLACE KIRKINTILLOCH GLASGOW G66 1NB	19/06/08	2797				2797
665 COATBRIDGE ROAD BAILLIESTON GLASGOW G69 7PH	06/07/08		5318			5318
86 WATERSIDE ROAD KIRKINTILLOCH GLASGOW G66 3HG	25/09/08		2700			2700
297 - COLTNESS ROAD - WISHAW ML2 7EX	29/10/08	6000				6000
MILL HOUSE CAMIS ESK HELENSBURGH G84 7LA	17/11/08			3884		3884
18 LIMESIDE AVENUE RUTHERGLEN GLASGOW G73 3PN	22/12/08	2600				2600
WELLINGTON CIRCLE ALTENS ABERDEEN AB12 3JG	30/03/09	1584				1584
		12981	8018	3884	0	24883

B2.1-10 Properties receiving pressure/flow below reference level

B2.1 The number of connected properties is taken from line A1.10.

During the financial year 2008/09, we rolled out a new low pressure strategic application to record and report the number of properties at risk of receiving low pressure. The spreadsheet previously used will be de-commissioned by December 2009. We have commissioned work to understand the number of properties on joint service pipes and those at risk of receiving pressure below the reference level. This work will continue during 2009-10.

B2.10 2,086 low pressure properties were excluded from line B2.9 as they fall into categories deemed to be an allowable exclusion.

1,216 properties were reported with low pressure but we determined that the problem was caused by apparatus within the customers' properties.

- 332 properties - low pressure private - resolved
- 6 properties - not Scottish Water responsibility
- 591 properties - low pressure private - no action taken
- 287 properties - low pressure not resolved - private issue

870 properties were reported with low pressure and we determined that the cause was a short-term operational action. These reports therefore did not lead to the properties being added to our low pressure register.

- 569 properties - operational activity
- 301 properties - low pressure one-off incident

B2.11-B2.25 Properties affected by planned and unplanned interruptions

B2.11-B2.14 Properties affected by planned interruptions

We continue to improve the planning of our work on the water network to minimise the disturbance to our customers. There has therefore been a substantial decrease in the number of properties affected by planned interruptions.

In our efforts to reduce overruns of planned interruptions, we have improved our working procedures. This has reduced the number of properties that are affected by isolations of sections of our network We have challenged the need for interruptions, performing work on live mains wherever possible, and provided network backfeeds where possible when we do isolate a main.

B2.15-B2.18 Properties affected by unplanned interruptions

The overall figure for properties affected by unplanned interruptions to supply >3 hours, >6 hours and >12 hours have increased compared with 2007/08 figures. However, the number of properties affected by unplanned interruptions >24 hours has decreased.

The majority of the increases in interruptions >6 hours and >12 hours are associated with a small number of large events. This year saw the failure of a 400mm HPPE trunk main which resulted in an extended interruption to the town of Helensburgh (3,884 properties >12 hours). The failure of trunk mains in Baillieston and Kirkintilloch resulted in 5,318 and 2,700 properties respectively suffering interruptions >6 hours.

A further two incidents in Ayrshire and Fife affected 449 properties and 503 properties respectively for periods greater than 12 hours. Both were caused by faulty workmanship and we have implemented action plans to prevent such incidents occurring again.

B2.19-B2.22 Interruptions caused by third parties

We recorded nine interruptions caused by third parties that lasted longer than three hours with three of these incidents making up the majority of the number of properties affected. These three incidents affected 100, 200 and 526 properties respectively.

B2.23-B2.25 Unplanned interruptions (overrun of planned interruptions)

Significant progress has been made with planned overrun performance. There were only 51 properties affected by overruns of planned work >6 hours throughout 2008/09, which is a performance improvement on 2007/08.

A 'Planned Interruptions Action Plan' was produced and implemented during early 2008/09. This included improved understanding of the definitions and the impact of 'planned overruns' on our customers. It also introduced improved planning procedures and performance management for contractors, consultants and Scottish Water staff.

Table B3 and B3a Sewage – Internal Flooding and External Flooding

General Comments

Our commitment to improve our service to customers, driven through the significance of sewer flooding indicators to the OPA has led to further reductions in our sewer flooding incidents and improvements in the corporate reporting of our performance compared with the previous year.

A reduction in all three categories of sewer flooding by other causes has resulted in the total incidents decreasing to 175 incidents from 184 last year. In the case of flooding due to overloaded sewers, although the number has increased from 44 to 56 we believe that 14 of these incidents were due to severe weather conditions.

As last year, a regional network analyst fully investigates each internal flooding incident and, on completion of an investigation form, reports to confirm that an internal flooding incident has taken place. There has been a greater emphasis placed on completion of resolution forms this year and, as a result, the small uplift that was applied to last year's figures is not necessary this year. This is reflected in the improved confidence grade from B3 to B2.

The IDR Business Reporting team continues to publish a series of corporate sewer flooding reports based on records in our Promise system. These reports are published on a scheduled date every month and are available to the whole business including being used for internal OPA reporting and regulatory reporting.

Monthly meetings also take place between representatives from Tactical Planning & Performance (TP^2) and IDR to review the figures and forecasts and agree on any necessary actions.

B3.1 Annual Flooding Summary

The number of connected properties is taken from line A1.21.

B3.2-B3.12 Annual Flooding – Overloaded Sewers and Other Causes

As mentioned above, a focused effort on completion of resolution forms has enabled the improvement in confidence grade.

B3.4 - The information used to report these figures has been supplied from The Met Office, CEH Wallingford and Farrer Consultants. The data used to determine the severe weather incidents (above 1 in 10 year return period) is from specific rain gauges during rainfall events and from Met Office radar rainfall information.

The majority of severe weather events were confirmed in the months between July and August in which intense storms were experienced.

Three incidents arose from the severe weather that occurred on the 3rd July 08 in the north of Glasgow with all locations 1.5 miles from each other. On the 3rd July, localised showers affected most parts of Scotland with showers generally travelling in a north-westerly direction and were very intense at times. Scottish Water commissioned the Centre for Ecology & Hydrology (CEH Wallingford) to provide rainfall return period analysis on this day using the Flood Estimation Handbook (FEH) methodology and Hydrad system using daily radar rainfall accumulations and actual tipping bucket rain gauge data. The conclusion of the analysis report confirmed that using the rain gauge and radar information the rainfall return period was in excess of a 1 in 30 year return event.

One incident of flooding arose from the severe weather that occurred on the 13th Aug 08 in the North Lanarkshire Area. Scottish Water commissioned Farrer Consultants to provide rainfall return period analysis on this day using the Flood Estimation Handbook (FEH) methodology in conjunction with daily radar rainfall accumulations supplied by the Met Office. The report is based on the exact grid co-ordinate where flooding was reported and the conclusion of the analysis report confirmed that the rainfall return period was in excess of a 1 in 20 year return event.

Seven incidents arose from the severe weather that occurred on the 14th August 08 in the south of Glasgow with all locations 1.5 miles from each other. Farrer Consultant's report confirmed that the maximum rainfall return period was a 1 in 48 year return event.

Two incidents arose from the severe weather that occurred on the 19th August 08 in the north of Glasgow with both locations within 2 miles from each other. Farrer Consultants report confirmed that the rainfall return period was in excess of a 1 in 50 year return event

One incident attributing from severe weather occurred on the 19th December 08 in the Paisley area. Scottish Water commissioned the Met Office to provide rainfall return period analysis on this day. The report is based on rainfall stations and radar rainfall at this location and the conclusion of the analysis report confirmed that the highest rainfall return period using all data was a 1 in 25 year return event.

B3.6-12 Annual Flooding – Other Causes

As in previous years, the figures reported here relate to flooding caused by blockages or failure of main sewers only. They do not include flooding caused by blockages or failure of lateral sewers.

Our systems and processes for capturing information about internal flooding due to other causes (IFOC) are identical to that for flooding from overloaded sewers (IFOS).

B3.7 – The figure of 17 reported in this line is taken from only two year's worth of data rather than ten as our corporate reports were not published prior to this. The data is also based only on the first point of contact and therefore does not capture repeat floods against the same incident at other addresses. The incidents in this total that apply to the report year 2007/08 were also those reported prior to the uplift factor as covered in last year's commentary.

For the above reasons a confidence grade of C5 has been applied to this line.

B3.13- B3.23 Properties on the "At Risk" register

The information used to report these figures is extracted from the Sewer Flooding Register corporate satellite application (CSA).

No changes have been made to the process or methodology used to report lines B3.13-28 since the previous reporting year.

The period from late July to mid August 2008 was notable by the number of days on which intense storms were experienced. There were a considerable number of flooding incidents over this short period but no single incident resulted in a significant number of additions to the At Risk Register.

We have continued our review of all properties and areas recorded on the CSA (using information gathered from customer surveys, drainage area studies, site investigations, historic data sources, customer contact records, etc) which we initiated during the 2006/07 report year. In the following two report years we have used this review to improve information recorded on the CSA and, in turn, reduce cost inefficiencies in the flood alleviation programme. Undertaking this review has contributed to the overall fall in figures reported in Lines B3.13-15 and B3a.11-14. The reduction is a result of the work we have done to solve flooding problems permanently.

The review has also had a positive impact, in conjunction with incidents that occurred in the report year, on the figures reported in Lines B3.22 and B3a.19. As part of our continuous improvement, this review is ongoing.

B3.24-27 Problem solving costs

These figures are derived by totalling the costs of flood alleviation projects undertaken in the report year and dividing this by the number of properties that benefited from these projects. The cost information is extracted from the Capital Investment Management System (CIMS).

B3.24 Average cost of permanent problem solved (Capex)

The Capex costs associated with permanent flood alleviation projects rose only slightly this year. It is expected that the increasing trend will continue; as estimated costs for projects currently at design stage indicate that the average cost will be above that incurred in previous years.

B3.25 Average cost of permanent problem solved (Opex)

Opex costs associated with permanent flood alleviation projects have remained low over recent years. There were no opex costs associated with the schemes undertaken this year,

B3.26 Average cost of temporary problem solving measures (Capex)

Capex costs associated with temporary flood alleviation measures have risen since the previous report year. This is due to undertaking temporary measures at a higher proportion of non-residential properties which require work on a more significant scale. It is expected that the residential/non-residential proportional split will return to a level in line with that experienced in previous years and that costs will therefore fall over the next report year.

B3.27 Average cost of temporary problem solving measures (Opex)

This figure is reported as zero as the costs of maintaining temporary problem solving measures are minimal and are therefore not quantified or recorded.

B3.28 ESL Funding

This figure is obtained directly from SW's Delivery Plan May 2006, Table 3.1, and is unchanged from last year.

Table B3a Sewage – External Flooding

No changes have been made to the process or methodology used to report lines B3a.11-25. However, the validation process for internal flooding that is described in the general comments for Table B3 is not presently carried out for external flooding. This is reflected in the confidence grade of B4 for the data in this table.

Movements in the At Risk property numbers are covered in the commentary for Table B3.

B3a.1 – We have assumed that each incident affects one area so this is the same as the total in line B3a.5.

B3a.6 – This is the number of instances where the field "severe weather" has been recorded on the choke form. As explained above these do not go through the same validation process as instances of internal flooding, hence the low reported confidence grade.

B3a.22-25 Problem solving costs

B3a.22-23 Average cost of permanent solutions to problems (capex/opex)

Costs associated with permanent flood alleviation projects are wholly associated with internal flooding reported in lines B3.24-25 in Table B3. Figures reported in these lines are therefore reported as zero and non-applicable.

B3a.24: Average cost of temporary problem solving measures (capex)

The figure reported in this category is zero as no such measures were undertaken in the year.

B3a.25: Average cost of temporary problem solving measures (opex)

The figure reported in this category is zero as no such measures were undertaken in the year.

Table B4 Customer Service

B4.1-7 Billing/Charging/Metering (BCM) enquiries

The figures in this section refer to Scottish Water's wholesale billing activities such as septic tank emptying, rechargeable work and standpipes.

The performance reported in this section is based on figures sourced from the corporate system, PeopleSoft. The number of enquiries has shown a small increase but remains consistent with the previous year's figures, with an improvement in response performance, with only one enquiry not being responded to within 5 working days.

B4.8-14 Change of Payment Method (CoPM) enquiries

As from 1st July 2008 our corporate system Peoplesoft was configured to allow us to offer a Direct Debit facility for metered domestic customers if these customers had this facility in Hi-Affinity (previous billing system).

All existing metered domestic customers who were previously on direct debit facility were contacted and offered this payment facility.

There have been no requests received outwith the metered domestic customer for change of payment method, therefore zero is being reported.

B4.15-21 New Written Complaints

There has been a concerted effort to ensure that all written complaints are captured by the Customer Relations Team; the performance reported in this section is based entirely on the written complaints that were dealt with by the Customer Relations Team.

There has been a 27% increase in the number of written complaints dealt with by the Customer Relations Team.

B4.15a/b Total number of written complaint correspondence

The number of written complaint correspondence has been taken as the number of new complaints plus the number of follow-up letters recorded. A follow-up complaint is taken to be when a customer has had to contact Scottish Water for an update or provided some additional information needed to resolve the case. Where new issues are raised, including the submitting of a claim form as a result of complaint, this is regarded as a new complaint.

B4.22-29 Telephone Contacts

This year there has been a 4% reduction in the number of telephone calls received which equates to approximately 23,000 customers not having to contact Scottish Water compared with the previous year.

Contacts have been analysed against previous years and this has identified that a drop in the number of customer contacts was evident over the last quarter of the year which could be attributed to a very mild February, with less frost damage and fewer frozen pipes.

There has also been an improvement in the number of calls answered within 30 seconds and the number of abandoned calls compared with the previous year.

B4.22-28 These lines are reported from our Contact Centre Six system, reported via Crystal Reports. This is combined with monthly data from the BT Messagelink service. This process is unchanged from previous year.

B4.29 The total telephone complaints reported are sourced from our corporate customer system Promise, via a Business Objects report. The same process and report was run, as the previous year.

B4.30-40 Private Septic Tank Emptying

The administration of the septic tank service has gone through major changes this year which has resulted in improvements being made to the planning of work and to the quality of data and performance reporting. Tanker workload is now planned on a daily basis one month in advance to allow resources to be allocated to meet customer demand. Workload is now submitted electronically to tanker drivers via IMS devices which allow drivers to close off jobs once the work is completed. The interface between Gemini (septic tank system) and Scottish Water's billing system which is now in place also allows daily invoicing to customers for work undertaken.

The improved scheduling and planning of work was introduced in October 2008.

Table B7 Customer Care – GMS Performance

General comments

Customer Service operates with a centralised team with the remit to monitor compliance with the Code of Practice in relation to Guaranteed Service Standards. Our Guaranteed Service Standards scheme covers the most important services to our customers.

If we fail to comply with any of the Guaranteed Service Standards set out in the Code of Practice, the customer may be entitled to a payment. The majority of the standards have automatic payments however, a small number require our customers to make a claim for payment.

Processes and procedures are in operation to strictly monitor performance on all Guaranteed Service Standards.

Each notified failure is fully investigated with the assistance of the relevant parties within Scottish Water and, if it is established that a failure has occurred, a payment will be issued to the customer.

In relation to internal sewer flooding, the F-Map process is used to ensure consistency in dealing with sewer flooding incidents. The regional network analyst fully investigates each internal flooding incident and, on completion of the investigation, they will confirm if the customer is due a GSS payment. This has improved the process and ensures that all customers who experience internal flooding where the cause has been with Scottish Water's infrastructure, will receive their entitled Guaranteed Services Standard payment.

Customer Service also operates with a centralised team with the remit to process ex-gratia claims received via a public liability claim against Scottish Water.

On receipt of a claim, the team fully investigates the details (with the assistance of the relevant parties in the regional areas) and, if established that a failure has occurred, an offer of ex-gratia will be given to the customer. This should not be considered as an admission of liability by Scottish Water and this does not affect the claimant's legal rights.

B7.1 – B7.17 – Interruptions to supply

There has been a significant decrease in payments for planned interruptions and unplanned interruptions compared with the previous financial year. Improved systems and processes have been introduced for recording details of interruptions enabling validation of claims from customers thereby improving accuracy. Non-notification is the reason behind the majority of GMS payments for planned interruptions.

Planned Interruptions payments–

- 3 relate to Business Customers (incidents within 2008/09),
- 6 relate to Domestic Customers (incidents within 2007/08); and
- 5 relate to Domestic Customers (incidents within 2008/09)

Unplanned Interruptions payments–

- 1 relates to Business Customers (incident within 2008/09) and
- 59 relate to Domestic Customers (incident within 2008/09)

B7.18 – B7.22 Sewer Flooding

Payments to non-domestic customers are made to Licensed Providers rather than directly to the business involved. The verification process, as explained in the general comments above, has resulted in an increase in the number of payments to domestic customers.

Of the domestic figures reported, 90 payments refer to incidents from previous years as follows:

- 85 relate to incidents within 2007/08
- 4 relate to incidents within 2006/07 and
- 1 relates to an incident within 2005/06

B7.23-27 Request to change method of payment enquiries

No customer who receives a bill from Scottish Water has asked to change his method of payment during the report year.

B7.28-32 Other Billing/Charging/Metering enquiries

The one failure recorded in Table B4 line 4 is reflected in the number of payments in these lines.

B7.33-37 Written Complaints

The achievement of 100% compliance against this standard meant there were no payments made.

B7.38-42 Telephone Complaints where written response is requested

No failures were recorded against this standard.

B7.43-50 Keeping Appointments

The reported compliance is based on 3 failures being recorded within the corporate report however, there have been 9 payments made against this standard as follows:

- 3 automatic payments,
- 4 claimed payments; and
- 2 payments relating to the previous year 2007/08

B7.51-52 Ex Gratia Payments Made

Of the reported incidents throughout the year the majority relate to vehicle incidents. The majority of these are due to the condition of the roadway before or after we have carried out excavation work i.e. either potholes or sunken reinstatement.

B7.55-B7.57 Water Ingress to Gas Mains.

There were no failures reported against this standard.

B7.58-B7.62 - Meter Applications

No automatic payments were made as a result of failures against this standard but we made one payment to a domestic customer as a result of a claim.

B7.63-B7.67 Pressure - (Investigation)

No automatic payments were made as a result of failures against this standard but we made one payment to a domestic customer as a result of a claim.

B7.68-B7.72 - Pressure (Instance)

There were five payments made with two payments relating to the previous financial year.

Currently the number of instances is a reflection of the number of payments for the current financial year. However we will shortly be bringing into commission a new suite of low pressure reports which will identify complaints of low pressure and keep track of their progress to resolution. It will also record all payments issued to a customer.

B7.73-B7.77 - Major Incident (Information)

There have been no major incidents where Scottish Water has not managed to provide information within the GMS Period.

B7.78-B7.82 - Major Incident (Alternative Supply)

There have been no major incidents where Scottish Water has not managed to provide alternative supplies within the GMS Period.

B7.83-B7.87 GMS Failure to make payments within 10 working days

There have been no failures against this standard.

Table B8 Other Service Indicators – Water and Sewerage Service

B8.1 Water Service – Distribution

The number of mains bursts per 1,000 kms is reported this year as 204. This is an increase on last year's number but we are still achieving the ministerial target of 204 bursts per 1,000kms.

The trend of reported bursts has increased in the last year by 7%. Unreported bursts have increased by 121% from last year as there has been a focus on Active Leakage Control (ALC) activity to reduce leakage.

The overall trend has shown an increase of 21% since last year, predominantly through the increase in ALC activity.

Last year the split of mains bursts was 87% reported /13% unreported; this year the split is 77% reported / 23% unreported. This is a positive trend in moving from reactive to proactive repairs of bursts.

B8.2-9 Water Service – Water Treatment Works (Turbidity)

The figures reported in lines B8.2 to B8.9 cover the 2008 calendar year and cover any Water Treatment Works that was operational at any time during that reporting period, (January 2008 to December 2008).
Two data sources are used in the compilation of these lines:

1. Table 2 of the DWQR Information Return for 2008. Analytical data for Turbidity monitored for regulatory purposes at water treatment works originates from the Scottish Water Laboratory Information Management System (LIMS). Regulatory data is extracted from LIMS using processes established to enable compliance with the requirements of the DWQR Information Direction. Compilation of these lines requires extraction of the appropriate information i.e. turbidity monitoring at treatment works from the defined regulatory dataset.

2. Distribution Input (DI) data from corporate spreadsheet. This details the volumes of water into supply from treatment works.

Processes and reports have been improved for this year resulting in a reduced requirement for manual intervention in the population of these lines.

The LIMS (analytical) data component of these lines is of high quality, originating from a robust set of processes and systems which are subject to extensive quality control and audit procedures. However, lines 8.3, 8.5, 8.7 are compiled using a combination of the LIMS data and Distribution Input data, so confidence grades for these lines are set on the basis of both sources. The confidence grade of the Distribution Input has improved from C3 to B3, as a consequence the confidence grade for lines 8.3, 8.5, 8.7 and 8.9 has also improved to B3. For the other lines in this section the confidence grade remains at A2.

A large amount of data is excluded due to the criteria set. Of the 297 Scottish Water assets reported, only 57 qualify for inclusion. This is because regulatory monitoring for turbidity at treatment works is based on the volume of water supplied. The higher the volume supplied by the works, the higher the sampling frequency. The 95% data in lines 8.2 to 8.5 therefore only relates to the larger volume treatment works.

B8.10-8.19 Sewerage Service

B8.10 – 11, 18 Sewer collapses

The method used for calculating collapse figures this year is the same as previous years. Essentially, a selection of Work Order Standard Job numbers from the Ellipse data are used to select a number of jobs done which are assumed to be for the purposes of repairing collapsed sewers. A query is run which groups together jobs by postcode and a time span of 21 days. If a number of jobs occur in the same postcode and are within 21 days then they are counted as one job.

The increase in the figures compared with last year are believed to be due to the severe weather experienced in July and August 2008 which would have adversely affected the load on sewers and the condition of the soil.

B8.10 As per the Annual Return 2007/08 query response 88, B8.10 definition excludes third party collapses and will not reconcile to line E7.14.

B8.12-14 Intermittent discharges

The UID studies completed during 2008/09 provided a more complete understanding of sewage overflows and improved the information in the intermittent discharge asset inventory. As with the Annual Return 2007/08, Surface Water Outfalls (SWOs) and dual manholes (DMs) were not included in the reported numbers for B8.12 and B8.13 enabling comparison. However, as they are in Scottish Water's Delivery Plan and will be included in line G8.12 (number of UIDs improved) and G9.10 (number of UIDs), they are included in the table below. CSO & Combined CSO & EO structure types are also detailed separately in the table below, as specified in the line definitions for B8.12 & B8.13.

2008/09	UIDs B8.12	IDs B8.13	% UID B8.14
CSO & Combined CSO & EO	658	3132	21.0%
CSO at WWTW, EO etc.	80	504	15.9%
SWO	40	Not reported	Not reported
Dual Manhole	36	Not reported	Not reported
2008/09 Total including SWO & DMs	**816**	**-**	**-**
2008/09 Total excluding SWO & DMs	**738**	**3636**	**20.3%**

The Number of UIDs reported in line B8.12 has decreased by 118 this year. Three UCSOs in the Q&SII UCSO completion programme and 109 UIDs in the 2006-10 UID programme were resolved. There were 146 additions (new needs) including 2 dual manhole areas identified in 2006-10 UID studies – 56 of these will be delivered in 2006-10 and 90 in 2014-18.

Two of the additions for delivery in 2014-18 were already included in the total number of UIDs, as they are completion projects from Q&SII, so the net addition is 144. Thirty IDs, which should not have been included in the 2006-10 UID programme, were identified and removed. One UID was moved from 2006-10 to 2010-14 this year and four were moved from 2006-10 to 2014-18. A net of six additional needs is forecast for the 2010-14 UID programme compared with the Annual Return 2007/08. These are due to the revision of the baseline 2010-14 Technical Expression and new UIDs identified in 2010-14 UID studies. All of these changes have been agreed with the Regulators (SEPA and the Commission) via the OMGWG. It is anticipated that further additions and removals will be identified until all the UID studies, both 2006-10 and 2010-14, are complete.

The small difference in B8.13 - Number of IDs between the Annual Return 2007/08 and Annual Return 2008/09 (60 IDs) is due to investment e.g. assets being abandoned or new ones built, or better information e.g. unrecorded assets being discovered or assets being shown to have never existed, or been previously abandoned.

The Scottish Water Combined Sewer Outfall (CSO) Corporate Satellite Application (CSA) was used as the source for the data on intermittent discharges for the 2009 Annual Return. This corporate application holds the most up to date and comprehensive data available. The system links to the corporate asset inventory held in Ellipse (our Work and Asset Management system). Records from the CSO CSA were matched to the output from the recent GIS Data Harmonisation exercise to confirm which intermittent discharges exist and are operational. Those confirmed as non-existent were excluded in the final figures. Intermittent discharge types not incorporated in Ellipse (dual manholes, surface water outfalls and recently discovered CSOs or EOs) were appended to the core data to provide the complete number of IDs for inclusion in the tables and commentary. The quality and quantity of the data is continually being improved by Drainage Area Studies (DAS), UID Studies, and Operations/Area Strategic Planner knowledge.

B8.15-16 Sewer blockages

In last year's report, the query run on our Promise application selected a single service request code which was "SS Sewer Backing up no Overflowing" and totalled all the query returns. The report therefore relied solely on the diagnosis made during the initial call between the customer and our contact centre. For this year's report, resolution codes relating to sewer flooding were also included. These codes are assigned by our field staff and may differ from the original diagnosis of the call agent. This change in methodology has resulted in the increase in the number reported in these lines but it has not enabled us to report an improved confidence grade as the process still requires to be trended over a longer period

B8.19 Equipment failures

We have recorded a 3.7% decrease in incidents of equipment failures (repaired) against Scottish Water sewerage equipment in our Works and Asset Management System during the reporting year compared with last year.

The improved reporting process put in place last year has been used again this year for consistency. We anticipate further improvements in our proactive maintenance at our assets as a result of the APAM (Achieving Planned Asset Maintenance) project.

Data covers all reactive work orders in the appropriate category. Not all of these may have resulted in a physical repair or replacement of equipment. A few work orders may have instigated an investigation and report only, whilst some may have resulted in a choke clearing or equipment re-setting rather than a repair.

B8.20 – 37 Sewage Treatment Works performance

It should be noted that these lines can be impacted by a number of factors out with Scottish Water's control. These include changes to the regulatory monitoring plan (i.e. inclusion/exclusion from the annual sampling programme or an increase/decrease in the frequency of sampling) and revisions/variations to the discharge licenses.

There has been a recognised improvement in serviceability performance. This can be attributed to improvements in operational practices and procedures, investment in assets through the capital programme (i.e. EC01 and WQ01 programmes) and capital maintenance.

The number of sites that have been included in the analysis this year has increased by 40%, compared to the previous year's return.

The confidence grade for the data has remained at A3. The SEPA extract is from their corporate system and is available as a public register of information. All the supporting Scottish Water data is corporately sourced.

Table B9 Security of Supply index (SOSI)

This is the third year of production of this table for Scottish Water. The SOSI is a standard UK methodology to provide an indication of the extent to which a water company is able to guarantee the provision of a planned level of service. From 2010 this indicator will be used as part of our Overall Performance Assessment (OPA) calculation.

The SOSI measure is used in England and Wales to assess a company's security of supply to its customers but also to track changes in the service offered to customers over time.

We made a number of changes to our methodology for determining the supply demand balance for our Water Resource Plan 2008 (WRP08) (and hence Annual Return 2007/08) where we standardised our target level of service at 1 in 40 years for all zones .

There have been no further major changes to methodology for 2008/09, but data has been continued to be updated and improved. The updates are:

- Yield data has been re-assessed for selected WRZs.
- Hysim-Aquator models have been re-run for selected WRZs.
- Further Outage Workshops have been held.

Our critical period SOSI score for the Annual Return 2008/09 is +17, implying that we have insufficient supply to meet full demand in all of our WRZs (SOSI score +100). Our analysis shows that 74% of the population is in surplus and therefore the implication is that 26% of the population is at risk of supply shortage.

Ongoing investment for leakage reduction, growth and water quality schemes is predicted to increase our average period SOSI score. This journey of improved SOSI scores is reported fully in our WRP09 and 2DBP.

Table B9.a (planned level of service) and Table B9.c (critical period level of service) have been completed and indicate an improvement to the forecast 2008/09 SOSI scores for both Tables compared with our Water Resource Plan 2009 submission, which was based on 2007/08 data, with projections for 2008/09.

This is essentially due to 2008/09 outturn D.I. figures being lower than projected in specific zones

Table B9a Security of Supply index - Planned level of service

In this Table, the overall SOSI score has been calculated at dry year annual average against a target drought resilience level of service of 1 in 40 years. Due to a combination of leakage reduction activities and data improvement activities, the SOSI score has improved from -28 in the first reporting year (2006/07) to -19 last year (2007/08) to +26 this year (2008/09).

However, it must be noted that this is the first year we have been able to report using the current year data (2008/09 Distribution Input and population data)

Table B9b Security of Supply index - Reference level of service

Table B9.b (reference level of service) has not been completed. A common reference Level of Service was adopted in England & Wales based on Ofwat Report: 1997 Reassessment of Water Company Yield. Whilst we have remodelled all our yield estimates over the last 2 years to reflect our standardised 1 in 40 year target level of service for drought resilience (the basis of the Table B9a), we have some reservations that this does not fully reflect the original definitions of the "Reference Level of Service" which includes modelling of hosepipe bans at a 1 in 10 yr frequency. We do not specifically model hosepipe bans in our yield models and our level of service statement for hosepipe bans is that ***"Hosepipe Bans will be imposed in a water resource zone once the process to apply for a Drought Order has been initiated"*** *This* is not the same as the Reference level of service definition.

We believe that the Table B9a results provide a reasonable comparison with the Reference level of service as they both use the 1 in 40 yr drought return period as the predominant factor in the calculation of Deployable Output.

Table B9c Security of Supply index - Critical period level of service

In this table, the overall SOSI score has been calculated at dry year critical period. Due to a combination of leakage reduction activities and data improvement activities, the SOSI score has improved from -51 in the first reporting year (2006/07) to -26 last year (2007/08) to +17 this year (2008/09). As for Table 9a, this has been calculated using 2008/09 D.I. data and population data.

We have not yet evaluated in detail the 2008/09 peak D.I data to take account of adjustments – bursts for example. We have therefore used the same zonal peak factors used for calculating the 2007/08 SOSI score. Limited sensitivity analysis demonstrates that a +/- 10% adjustment to the peak factor results in a maximum +/- 1 point change in the SOSI score.

D Tables

Base Information

Table D1 – D3 Workload Commissioned Assets

General comments

Tables D1-D3 record assets replaced or refurbished and new and enhanced assets commissioned in the Report Year 2008/09. These are based on Scottish Water's approved investment programme to meet requirements of legislative driven quality improvements, enhanced level of service, ministerial outputs and capital maintenance to ensure that the necessary level of service is maintained. The assets commissioned relate to projects from the Q&SII Conclusion and Q&SIII Programmes.

The asset data reported in D1 to D3 is directly input to the tables from aggregation of the project level data to the appropriate asset type, size band and financial fields.

Commissioned assets have been analysed and allocated to either 'asset replacement' or 'new and enhanced', as appropriate. Asset data on completed projects was obtained from Project Managers in Scottish Water Solutions and Capital Investment Delivery (CID). They provided details of the assets commissioned through an Asset Data Capture Form for Tables D1-D2. Support Services data was obtained on individual proforma appropriate to the asset type. Financial information on project capital expenditure has been reconciled with the corporate financial management system.

New mains and sewers adopted, through Customer Connections projects, are reported at the value advised by Customer Connections for each development site. Data was provided at development site level on the new mains and sewers. Five wastewater pumping stations have also been adopted and financial data is available for these assets.

Mains and sewer rehab lengths and size band diameters were provided with the associated financial costs in rehab proforma by (CID). The lengths reported are the lengths in the year although the projects may be continuing in 2009/10 and the financial investment associated relates to the lengths delivered in 2008/09.

Data on changes to assets, resulting from reactive work undertaken by Customer Operations, was provided by Finance. A report on capitalisation of reactive work drawn from our Works and Asset Management System (WAMS) and Peoplesoft has enabled a consistent approach to be taken across the eight operational regions. Work has progressed to improve the process for recording infrastructure reactive maintenance with fields to capture the length and diameter of all mains and sewer work progressed. However, there were capitalised costs associated with mains and sewer replacement which were not attached to specific lengths and we are working to ensure that fuller compliance is achieved in future years. As financial cost centres were captured, it was possible to attach Ellipse codes to the majority of water and wastewater treatment plants and to identify assets where there were a limited number attached to each cost centre or the narrative associated with the work order named the site. We are looking to ensure that the Ellipse code or Plant Number is captured for all non-infrastructure assets in future years.

Progress has been made to enable the work undertaken by Operations, as part of the Quick Hits programme, to be captured through the asset data proforma used by SWS and CID and completed by TPP. Rather than creating programmes of Quick Hits for each Operational Area, a number of individual projects were created in 2008/09 and this will continue for any additional work promoted in 2009/10, allowing greater accuracy in monitoring and reporting.

Further work is required to ensure that health and safety work, progressed by all parties, will be recorded consistently, in the manner currently demonstrated by our CID team.

Work to meet the requirements of the Security and Emergency Measures Direction has been reported as enhancement of the assets in Table D1.

The asset data on named projects being delivered by Scottish Water Solutions and Capital Investment Delivery was provided through proforma which used the current Ellipse data and are of similar quality to previous years.

Table D1: Workload Commissioned Assets – Water Service

D1.1-D1.21 Asset Replacement

D1.4-D1.11Water Treatment Works

D1.5 – D1.8 and D10 report a confidence grade of B2, compared with B3 last year, against the number of WTWs replaced or refurbished based on:

- improved data on the Quick Hits programme,
- reduced potential for double-counting sites reported where work has been progressed through more than one project on the same site,
- improved identification of sites with investment delivered by Customer Operations.
- the investment profile confidence grades have improved from B3 to B2 as Customer Operations costs are reported from Peoplesoft/WAMS report and the turbidity monitoring programme sites reported site specific costs.

D1.18 Water Mains – Mains (other)

Investment on air valves, which was not undertaken as part of the mains rehabilitation programme, is reported against line D1.18 in the replacement table in size band 1. The confidence grade for this data is reported as B2 as only air valves from the Reactive Operations programme have been included. Any other valves are included with manholes and chambers reported against D1.18 in size band 2. Investment in street furniture is reported in D1.18 in size band 3.

D1.19 Water Mains – Communication pipes (lead)

D1.19 reports B3 as against B2 in 2007/08. CID have advised that the number of lead communication pipes replaced may be understated as, although there has been a significant increase in the proportion of mains rehabilitation progressed in rural areas, there are a number of projects where no lead communication pipes have been reported but work progressed in areas where it would have been expected to have had lead pipes. A review of the “as built” documents is being progressed.

D1.31-D1.51 New and Enhanced Assets

D1.33 Water Resources – Raw Water Aqueducts

D1.33 reports B2 as against A1 in 2007/08 when there was no investment in new and enhanced aqueducts reported. The 40km and 20km lengths relate to cathodic protection of the Loch Turret to Longley and Balmore to Glenhove aqueducts. B2 is consistent with the confidence grade assigned to other new and enhanced assets in this category.

D1.47 Water Mains – Mains Potable(nominal bore)

D1.47 reports improved confidence grade of B2 due to the lengths of new main being reported as part of the maining out through the WQ programmes completed in 2008/09. However, the confidence grade for investment is reported as B3 as the value of the adopted mains has been taken as the contribution paid to the Developer plus Scottish Water fees.

D1.48 Water Mains – Mains (other)

Cathodic protection has been reported as an enhancement in D1.48 as it was not considered appropriate to claim the length against enhancement of potable main.

Last year, this line was reported as A1 as no length was reported against the Cathodic protection work undertaken. This year, a N confidence grade has been assigned due to the water mains definition not being applicable for Cathodic protection. The investment is reported as A1 as the project actual costs are from Peoplesoft.

Table D2: Workload Commissioned Assets – Wastewater Service

D2.1-D2.20 Asset Replacement

D2.7 – Last year the confidence grade was reported as A1 as there was no refurbishment or replacement of long sea outfalls. It has been reported as B2 in current year as a number of projects have been completed where allocation is considered to be within 5%.

D2.10-D2.14 Sewage Treatment Works

Lines D2.11 – D2.14 report a confidence grade of B2, compared with B3 last year, against the number of WWTWs replaced or refurbished based on:

- improved data on the Quick Hits programme,
- reduced potential for double-counting sites reported where work has been progressed through more than one project on the same site,
- improved identification of sites with investment delivered by Customer Operations.

Lines D2.11 – D2.12 report investment confidence grade of B2, compared with B3 as Customer Operations are reported from Peoplesoft/WAMS report and remaining sites are within named projects. The remainder in this section are reported at B3, due to programme lines split equally across all sites, so value by size band is of a lower confidence.

D2.15, D2.17-D2.20 Sludge Treatment Facilities

These lines are reported as AX as Scottish Water does not have any assets of these types.

D2.20 - Investment in manholes and chambers which were not associated with the sewer rehabilitation programme is reported in line D2.20 in size band 0 and street furniture is reported in size band 1.

D2.31-D1.50 New and Enhanced Assets

D2.38-D2.40, D2.44 Sewage Pumping Stations and Sewage Treatment Works

D2.38 – D2.40 and D2.43- D2.44 report an improved confidence grade of B2 due to improved size data associated with new and enhanced assets from the Delivery Partners.

D2.45-D2.50 Sludge Treatment Facilities

Lines, D2.45 and D2.47 – D2.50 are reported as AX as Scottish Water does not have any assets of these types.

Table D3: Workload Commissioned Assets – Support Services

General comments

D3.9 and D3.29 report on the telemetry outstations which have been commissioned through the telemetry programme and outstations specifically identified in the asset data returns from project managers. The total number of refurbished/replaced outstations has been assigned a confidence grade of B3, against the associated investment, which reflects the inclusion of the telemetry investment element within refurbishment of assets which have been included in Tables D1 and D2. A number of upgraded telemetry outstations will have been included within the upgrading of assets which have been included in Tables D1 and D2.

D3.1-D3.16 Asset Replacement

D3.10-D3.12 Information systems

We report confidence grades of A1 and A2 for line D3.12, maintaining consistency with other asset confidence grades.

D3.13- D3.16 Other Non-Operational Assets

D3.13 includes laboratory equipment and investment undertaken at tenanted houses, including upgrades to the private water supplies.

D3.14 – D3.16 have been reported as AX as no capital investment is being progressed against these asset types.

D3.21-D3.36 New and Enhanced Assets

D3.22 reports a confidence grade of A1 against investment, compared to A2 in 2007/08, as there has been no new or enhanced investment undertaken at Laboratories during 2008/09 (one new laboratory was commissioned in 2007/08).

D3.33- D3.36 Other Non-Operational Assets

D3.33 includes laboratory equipment and investment undertaken at tenanted houses, including upgrades to the private water supplies. D3.33 also includes work undertaken at a number of landfill sites to enable these to be de-commissioned.

D3.34 – D3.36 have been reported as AX as no capital investment is being progressed against these asset types.

Table D5: Activities – Water Service

D5.1-11 Mains – Asset Balance

Lines D5.1-D5.11 report the water mains asset balance at March 2009 and the number of communication pipes replaced in the Report Year.

The closing balance for water mains on line D5.8 is 52km higher than the opening value reported on line D5.1, which is consistent with the 47,215km reported in line H3.4 in 2008/09.

D5.2 and D5.3 Mains renewed and mains relined

The total length of mains renewed and relined is consistent with line D1.17 which reports the mains replaced as part of the Capital Investment Delivery Q&SIII Mains Rehabilitation Programme in 2008/09, lengths replaced by Reactive Operations capital maintenance lines, and lengths from named projects.

D5.4 Mains cleaned (total)

The 355.28km length reported has been derived from the length of flushing specified in 'cleansed' WAMS work orders of 88.56km plus 266.715km through the capital programme. This includes 67.852km relating to Camphill, 38km to Gairloch and 26.967km to Castlehill work packages. The increased lengths from the capital programme are due to work progressing to improve the level of iron and manganese as part of an agreed programme of work with DWQR. The B3 confidence grades reflect the robust processes used to derive these figures from our corporate systems.

D5.5 Distribution mains cleaned for quality

The length reported of 335.84km has been derived from the length of 69.12km reported against routine flushing and swabbing codes, as these works are carried out for water quality reasons, plus the 266.715km reported against capital programme work packages in D5.5 above. The B3 confidence grades reflect the robust processes used to derive these figures from our corporate systems.

D5.6 New mains

The length of new mains is taken from line D1.47. This is a combination of the lengths adopted by Developer Services for new developments and lengths delivered as part of Q&SII and Q&SIII projects where a number of WTW upgrades were delivered through maining out from adjacent WTWs including 35.7km at Barclye and Palnure, 14.3km at Langholm and 10.9km at Braes. The confidence grades remains B2, as in 2007/08.

D5.7 Mains abandoned

The length of mains abandoned reported equals the length of mains renewed taken from D5.2 above less reduction in total length reported from the mains rehabilitation programme. It does not include any impact of improved information which we have included in D5.7a.

D5.7a Other changes

The length reported is the balancing value to bring the total changes in the year in line with the closing balance reported in D5.8. This balancing includes a large change in length of abandoned main reported from GIS in 2008/09 of 297km with over 100km relating to previous years. This is offset by the update of "as built" water mains from Customer

Connections and the capital programme entered into GIS in the report year, together with backlog data from better information from the business. The GIS team continue to work closely with CID to monitor that the agreed process to ensure that the mains rehabilitation programme is updated on GIS timeously, is being delivered. The confidence grade remains B2 as in 2007/08.

D5.8 Total length of mains (closing balance)

The total length reported is consistent with line H3.4. The confidence grade of B2 reported reflects the source of this data and the processes utilised to produce the final value and in-line with 2007/08.

D5.9 Lead communication pipes replaced – quality

There is currently no programme of lead pipe replacement agreed with the Regulator for water quality improvements, although a total of 286 pipes replaced at customers' requests were recorded in the year to March 2009. All of these lead pipes replaced are included against line D5.10. The number of pipes replaced at customer request is being recorded internally on a monthly basis and the confidence grade reported in the Annual Return 2007/08 is maintained.

D5.10 Lead communication pipes replaced - maintenance or other

A further 588 lead communication pipes have been reported as replaced or refurbished through the Reactive Operations capital maintenance lines and CID Mains Rehabilitation Programme in addition to the Customer requested replacement total of 286. The number of communication pipes replaced is lower than previous years. Although there has been a significantly greater proportion of work progressed in more rural locations with fewer communication pipes (and excluding trunk mains) Scottish Water has less confidence in this data and so has commissioned a review of the project data received from contractors. The confidence grade assigned has been downgraded from B2 to B3 for this reason.

D5.11 Communication pipes replaced – other

2,238 communication pipes, of materials other than lead, have been replaced as part of the mains rehabilitation programme being progressed by Capital Investment Delivery and through work undertaken as part of the Reactive Operations capital maintenance lines. The confidence grade is unchanged.

D5.12-18 Water Resource Planning

The figures for the report year have been obtained from corporate reporting systems, principally Perform Spatial Plus. The confidence grades remain unchanged for lines D5.12 – D5.16.

147 additional district metered areas were created during the report year bringing the total to 2,773. An additional 38 DMAs are almost complete and will be delivered early in 2009/10. The increase in 2008/09 is lower than the expected additional 259 reported in last year's return; further DMA programme optimisation included removing 59 DMAs from the programme.

The number of district metered areas with valid DMAs, Category 1, has increased to 2,264.

The additional population covered by DMAs increased by only 0.7% during the report year, as most of the new DMAs which were created in 2008/09 were in rural parts of the North and have low property coverage.

D5.17 Percentage of total connections covered by valid DMAs

The percentage of total connections covered by valid district metered areas is derived information from our records of the total number of communication pipes. This derivation relies on extracts from the corporate address server (CAS), the works and asset management system (WAMS) and the Laboratory Information Management system (LIMS). The confidence grade of B4 reflects the level of uncertainty in the collation of the communication pipe datasets.

D5.18 Percentage of total network covered by valid DMAs

The total percentage of mains covered by valid district metered areas rose to 77.5% in the report year. The confidence grade has improved from A3 to A2 as a reconciliation of the DMAs to GIS data has indicated that there is only a 1.75% difference and a bulk upload will be progressed to address this.

Table D6 Activities – Waste water Service

D6.1-13 Critical/Non-Critical Sewers

The total reported length of critical sewer has increased by 45.66km. This has arisen through a combination of:

- re-classification of 25.78km of previously non-critical sewers to critical sewers, and
- b) better information from CCTV surveys and drainage model maintenance; the net length of non-critical sewers recorded has increased by 330.18km when compared to the 2007/08 reported value. The overall increase in total sewer length is 375.84km.

D6.1 Total length of sewers - opening balance

The opening balance is taken from the Annual Return 2007/08 line E7.8. The confidence grade reported on this line of B3 is consistent with line E7.8 for our 2008/09 submission.

D6.2 Total length of critical sewer - opening balance

The opening balance is taken directly from both Annual Return 2007/08 line E7.13 and Line D6.8 which reflects the closing balance from the previous reporting year. The confidence grade reported on this line of B2 is consistent with the noted lines from our Annual Return 2007/08 submission.

D6.3 New critical sewers added during the year

13.42km of new sewers were added this reporting year. This is consistent with the value reported in line D2.31. This comprises new sewers from Q&SIII wastewater UID quality and first time provision projects, Q&SIII flooding projects and Q&SIII Developer Services projects. The confidence grade is unchanged from 2007/08.

D6.4 Critical sewers inspected by CCTV or man entry during the year

204.2km of inspections were recorded in the report year. These are made up from 0.504km of man entry reported through WAMS, and 203.7km from CCTV sewer survey data undertaken by Operations and CID. The robust data sources utilised (IFOC CCTV project and the update from other project-driven CCTV databases) enables the confidence grade to be maintained.

D6.5 Critical sewers – renovated

0.11km of sewer renovations were reported as part of the Capital Investment Delivery sewer rehabilitation programme in this report year.

D6.6 Critical sewers – replaced

10.56km of sewer replacement is reported in line D2.1 from the CID Q&S3 infrastructure programme but the renovated sewers require to be deducted to give the total replacement length of 10.46km as shown in this line.

D6.7 Abandoned "critical" sewers

0.72km of abandoned sewer is reported from CID as part of the sewer rehabilitation programme in 2008/09 and 16.33km is reported from GIS teams due to operational activities. This gives a total value of 17.05km in this line.

D6.7a Other changes to "critical" sewers

This line reports the balance between the changes reported through the lines above to bring the total in line with the closing balance reported in D6.8 and in line with E7.13. This is partially due to a re-classification of 25.75km of sewers to “critical” due to better information from CCTV surveys and drainage model maintenance on depth and diameter and also to the update of GIS with “as-built drawings”. The confidence grade remains unchanged.

D6.9 New "non-critical" sewers

109.167km of new sewers are reported in line D2.32. These are principally new sewers through the Q&SIII Developer Services programme, WIC 16 and Q&SIII FTP projects and Q&SII and III wastewater quality and UID projects. The total figure of 131.643km reported on this line includes 22.476km of new pumping mains to comply with WIC guidance requirements which are reported in D2.33.

D6.10 "Non-critical" sewers – renovated

10.38km of sewer renovations are reported as part of the Capital Investment Delivery sewer rehabilitation programme in the report year.

D6.11 "Non-critical" sewers – replaced

The 46.02km of sewer replacement reported for this line has been delivered through the CID sewer rehabilitation programme, Reactive Operations sewer rehabilitation projects, and through wastewater quality projects. When the 10.38km reported as renovated is added, the total reflects the overall value of 56.4km reported on line D2.2 and D2.3. No change in confidence grade is being reported.

D6.12 Abandoned "non-critical" sewers

4.584km of abandoned sewer was reported by CID as part of the sewer rehabilitation programme in 2008/09 and 13.03km of abandoned sewer is reported from GIS.

D6.12a Other changes to "non-critical" sewers

This line reports the balance between the changes reported through the lines above with the closing balance reported in D6.13 and E7.8. These include the 25.78km re-classification to critical sewers, plus increase of 91km of lateral sewers, update of GIS with “as-built” drawings for lengths adopted through Customer Connections and new sewers and pumping mains built through the capital programme. The length of lateral sewers is a statistical calculation based on property types. Customer Connections “as built” drawings for future developments will include lateral sewers and the statistical calculation will be frozen until existing lateral sewers can be captured in GIS. The confidence grade is therefore now reported as B3.

D6.14-19 Studies

D6.14 Number of sewage drainage areas

The number of drainage areas has not altered from last year. Although additional areas have been created, these have yet to be uploaded to the corporate GIS. The confidence grade therefore remains unchanged.

D6.15 Total Drainage area studies identified for study in the current programme.

The number of drainage areas identified for study within the Q&SIIIa programme has reduced from the 68 reported last year to 51. This is, in most part, due to the removal of the flood prevention projects counted in previous returns. These flooding capital schemes currently only use the DAS as a design tool, carrying out no new studies or a maintenance function on old studies. For this report year, this line has been taken as the number of sewage drainage areas where a new study is being created or updated. The confidence grade has been raised to B2 to account for the increase in information related to model use now being collated and analysed.

D6.16 – D6.19
The confidence grade for these lines has been raised to B2 to account for the increase in information related to model use now being collated and analysed

D6.16 Drainage area studies ongoing in the current programme

Of the 51 studies reported in D6.15, 12 have been deferred to the next investment period due to a reduction of the model maintenance budget during this reporting period. Of the remaining 39 studies, 22 are currently ongoing.

D6.17 Drainage area studies complete

17 of the 39 studies are now considered complete.

D6.18 Percentage drainage area studies completed in current programme

The 17 studies currently complete amount to 44% of the 39 studies set for delivery in this investment period.

D6.19 Percentage properties covered by completed studies

The 17 studies cover 7% of the connected domestic & non domestic properties in Scotland.

Table D7 and D8 Capital Maintenance Expenditure

General comments

D7 reports capital maintenance investment on wastewater assets and D8 reports capital maintenance investment on water assets in the Report Year. With the exception of Management and General, the investment is reported against operational areas.

These tables have been completed to show the expenditure in each of the eight operational regions, as follows:

Region 1 – Ness
Region 2 – Don
Region 3 – Forth
Region 4 – Tay
Region 5 – Ayr
Region 6 – Clyde
Region 7 – Nith
Region 8 – Tweed

This is the second report year to use the eight operational regions which were introduced in 2006/07.

Each project is assigned to one of the eight operational regions and to a Unitary Authority in the Capital Investment Monitoring System. The Unitary Authorities map to the revised operational areas and each Unitary Authority is wholly contained within an operational area. Where projects are flagged as Scottish Water Wide as they span more than one operational area, they are reported proportionally according to the amount of work carried out in each relevant area. For projects where the detail is unavailable or would require a disproportionate amount of time and effort to ascertain, the cost of the project is spread evenly across the eight areas.

The financial values reported in D7 and D8 are based on the percentage of capital maintenance allocated to projects. A template was developed during the report year which enabled Project Managers to confirm existing information and to split projects according to WIC asset types and/or Operational Area. The template included a sub-category, created from WIC Guidance for D7 and D8, which contained more detail than the required categories. A look-up automatically populated the category field. This was used by Scottish Water Solutions and Capital Investment Delivery for all of their projects. It was also used by a number of the Project Managers in other areas of the business. The returned templates were collated and used to allocate the capital maintenance projects to the correct areas and maintenance categories.

D7.37 and D8.28 – Wastewater/Water Management and General

These lines include all support services. The telemetry outstations have been allocated to both water and wastewater where the projects are delivering both. The other non-operational assets have been allocated to water or wastewater. The investment on fleet, IT, and offices/depots/control centres have been split 50/50 for reporting in D7.37 and D8.28. The SWS Share Account has SM3 and WM3 drivers and therefore the (£8m) is split equally between D7.37 and D8.28.

The confidence grades reported are B3 as most of the information used is recorded at project level in the corporate database and was confirmed by Project Managers but there are areas where this confirmation was not available. The quality of the data has improved from 2007/08 but not to a level where the confidence grade can be improved on last year. It is recognised that there is further scope to ensure that all areas of the business provide a full split by Operational Area and Asset Type.

E Tables – Operating Costs and Efficiency

General Comments

Alignment with 2DBP:

The 2009 Annual Return is based on an actual cut of data, as at 31 March 2009. The data used to forecast 2DBP outturn was based on a mix of data cut from both 31 March 08 (Annual Return 2007/08) and updated data available at September 2008. This was the best information available at that time. Therefore Annual Return 2008/09 and 2DBP numbers will not always align directly.

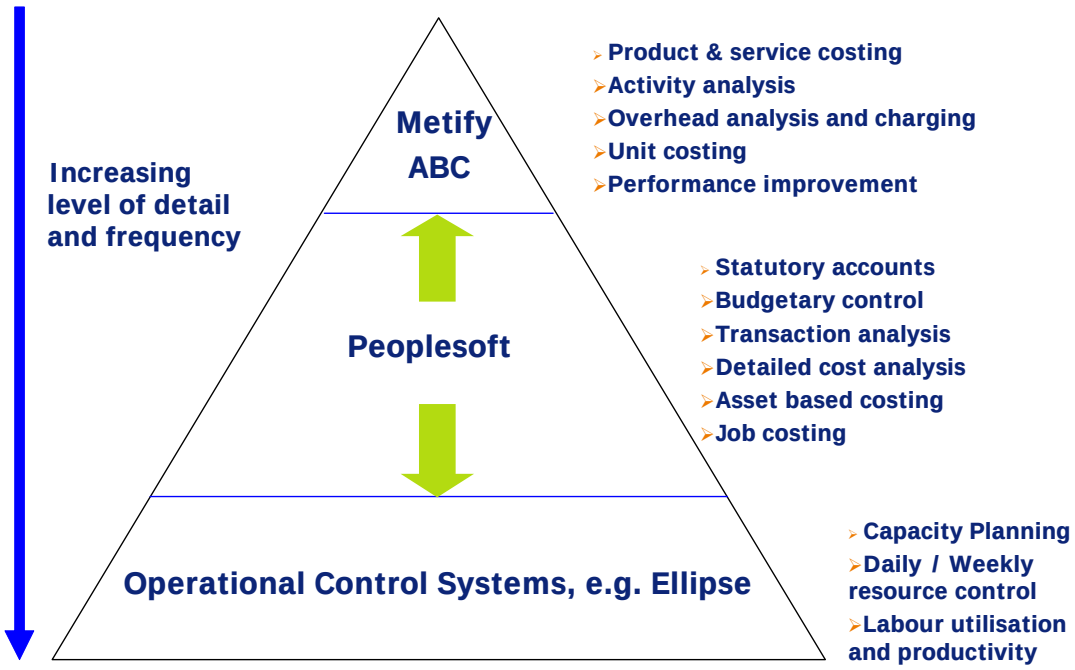
Methodology & Cost Allocation

Cost analysis in E Tables (E1, 2, 4, 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, either internally within Scottish Water, or to our external customers.

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

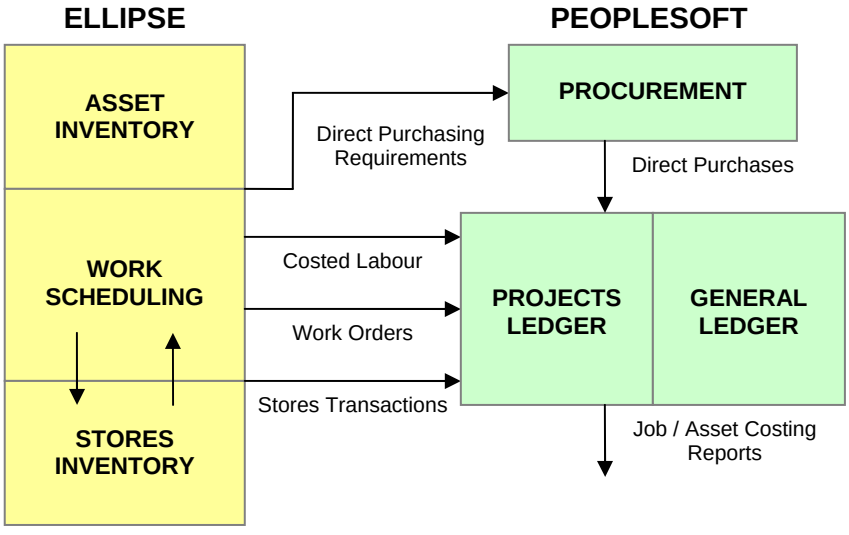
Activity Based Management data (financial and non financial) is captured in various corporate systems. The key systems which provide ABM analysis for E Tables are:



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 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 Business Stream from Scottish Water, and in turn Scottish Water Solutions and Scottish Water Horizons. 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 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.

Metify Activity Based Costing (ABC) System	Metify is an ABC system structured around Scottish Water's key (c.300) activities. ABC is run periodically (typically half-yearly) to cover all profit and loss expenditure. Peoplesoft feeds total expenditure directly into Metify. Where activity splits have already been captured, e.g. Ellipse effort by activity / asset, these are also fed directly into Metify. 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 Metify these drivers are used to allocate costs to services. Output from Metify provides analysis of the full cost of services. These services have been structured to match E & M Table activity classifications, and therefore Metify output directly feeds these tables. Non financial driver data is collected from a variety of corporate systems and input to Metify.
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. o Peoplesoft – Number of invoices, purchase orders, customer bills

Ellipse / Peoplesoft Integration



Cost Allocation

Costs are captured or allocated in line with Regulatory Accounting Rules.

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 Holdings Limited (SWHH) and Scottish Water Horizons Limited (SWH) were established and commenced trading on 1 April 2008. SWHH is the intermediate holding company and owns 100% of the shares in SWH which is the operating company. SWH is 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 were not taken over by Scottish Water Horizons, and 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. 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 Aquatrine, 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 half-yearly 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. Cost does not include any allocation of administrative or general overheads and specifically excludes abnormal costs relating to, for example, inefficiencies, wastage and costs associated with operational problems encountered after asset commissioning.

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. With specific reference to expenditure relating to reactive and leakage activities, specific definitions and examples are included in the capitalisation policy. In addition, specific controls are in place to review expenditure relating to reactive and leakage activities.

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 2008/09 93% 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.

Support Cost recharges for Fleet, IT and Property are transferred to teams on a regular basis, to reflect actual consumption of support costs.

ABC then calculates the fully allocated costs of wholesale activities, including all support activity costs.

Trading Results & Reconciliation

Scottish Water Business Stream Limited (Business Stream) is a fully owned subsidiary of Scottish Water. 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 and Scottish Water Horizons results.

SW Group Statutory Accounts

		£m	£m
Cost of Sales		632.7	
Admin Expenses		101.8	
SW Group Expenditure			**734.5**
Less	Business Stream		(22.0)
	FRS 17 adjustment		3.4
Total Expenditure (excluding Business Stream and FRS 17)			**715.9**
Represented by			
SW Regulated			687.9
SW Non Regulated			3.8
Horizons			24.2

E Tables include the costs of Scottish Water (Regulated) activities only.

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

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

(£m)	SW & SWH*	Diff Board - M18	M18W/WW Tables Total	Diff M18 - E1/2/3a	E Tables Total	E1	E2	E3a
Employment	**148.1**		**316.3**		**288.9**	168.9	120.1	0.0
Other	**170.2**							
Opex	**318.2**	**2.0**	**316.3**	**27.4**	**288.9**	**168.9**	**120.1**	**0.0**
PFI	**132.6**	**(3.4)**	**136.1**	**0.0**	**136.1**	0.0	0.0	136.1
IMC	**104.2**	**0.2**	**104.0**	**0.1**	**104.0**	76.5	27.5	0.0
Depreciation	**161.7**		**162.0**		**161.3**	74.0	87.3	0.0
Grant Amortisation	**(1.1)**	**(0.2)**	**(1.1)**	**0.6**	**(0.9)**	(0.7)	(0.2)	0.0
Amort PFI	**1.6**		**0.0**		**0.0**			
Gain on assets	**(1.5)**		**0.0**		**0.0**			
Expenditure	**715.9**	**(1.5)**	**717.3**	**28.0**	**689.4**	**318.8**	**234.5**	**136.1**
Explained by								
Charges to SWBS for support		1.5						

***** Excludes Business Stream & FRS 17

The line differences are table presentation differences explained as follows:

- £3.4m 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 (£2.8m), terminal pumping station costs pumping to PFI works (£0.5m) and support costs for the PFI team (£0.1m).
- £1.5m 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.
- £28.0m Non Regulated expenditure is included in M18 Tables but now excluded from E Tables.

Trading Results

From a Regulatory cost perspective, nominal operating costs (i.e. excluding depreciation, PFI charges, FRS 17 pension charges and costs associated with non regulated activities) increased by £31.2 million to £290.2 million (2007/08 - £259.0 million).

On a like-for-like basis Scottish Water's regulated operating costs increased by £7.5 million, a 2.9% nominal increase. The table below summarises this movement:

	2008/09 £m	2007/08 £m	(inc)/dec £m	%
Regulated Operating Costs (Scottish Water only)	**290.2**	**259.0**	**(31.2)**	
CMA start up / running costs	(0.6)	(2.0)	(1.4)	
Atypical bad debt credit in 2007/08	+8.1	+17.6	+9.5	
VR costs	(3.5)	(3.4)	+0.1	
Customer Service improvements / Leakage Reduction	(20.8)	(8.3)	+12.5	
New Opex	(3.0)		+3.0	
Like-for-like nominal costs	**270.4**	**262.9**	**(7.5)**	**(2.9%)**
Inflation (2.97%)		+7.8	+7.8	
Like-for-like nomical costs (real)	**270.4**	**270.7**	**+0.3**	**+0.1%**

Inflation applied is the average for the year

Like-for-like operating costs for 2008/09 of £270.4 million include the absorption of increased local authority rates and SEPA costs of £4.9 million. In real terms, like-for-like costs were £0.3m lower than in 2007/08.

The cost of the PFI schemes in the year was £132.6 million, £5.1 million higher than in 2007/08 due primarily to contract indexation which on one scheme was significantly impacted by increases in gas prices.

Depreciation, including infrastructure depreciation, increased by £14.9 million to £266.5 million. The main reason for the increase was a higher Infrastructure Maintenance Charge to reflect the level of underlying and long term forecast infrastructure investment. The gain on sale from asset disposals was £7.8 million lower than in 2007/08 at £1.5 million.

Non-regulated operating profits decreased by £2.2 million from 2007/8 to £0.8 million. This was due to many of the non-regulated activities now being carried out by Horizons.

E Table Commentary

Total operating expenditure (E1.20+E2.19-E1.17-E2.16), increased by £28.0m to £288.9m (as detailed below).

	2008/09 £m	2007/08 £m	Variance £m
Total operating costs – Water E1.20	168.855	142.819	(26.036)
Total operating costs – Waste E2.19	120.056	118.119	(1.937)
Exceptional costs – Water E1.17	0.000	0.000	+0.000
Exceptional costs – Waste E2.16	0.000	0.000	+0.000
	288.911	**260.938**	**(27.973)**

Scottish Water's reported regulated operating costs of £290.2m reconcile to the E Table total operating costs of £288.9m as detailed below:

Operating Expenditure	per Tables E1 & E2	**288.9**
Add	SW Opex allocated to PFI (Table E3a)	3.4
Less	SWBS Support charges	(1.5)
Less	Depreciation in Service Charges to Horizons	(0.6)
Regulated SW Operating Expenditure		**290.2**

In 2007/8 there was an atypical bad debt credit of £17.6m. The 2008/9 bad debt charge includes an atypical bad debt credit of £8.1m, a reduction of £9.5m from 2007/8.

Functional Expenditure

Total functional expenditure (lines E1.10 & E2.09) increased by £16.5m (9.4%) from 2007/08 (as detailed below).

Analysis of functional expenditure –

	2008/09	**2007/08**	**Variance**
	£m	£m	£m
Total functional costs – Water E1.10	109.506	91.845	(17.661)
Total functional costs – Waste E2.09	83.345	84.483	+1.138
	192.851	**176.328**	**(16.523)**

Direct employment costs (E1.1 & E2.1) increased by £2.4m (4.0%) from 2007/08 to £62.4m. Increases have been generated by inflationary and performance pay increases of £2.4m and pension contribution increases of £0.8m, partly offset by efficiency savings. The average headcount employed during the year was 3,583.

Direct power costs (E1.2 & E2.2) increased by £0.1m to £32.5m (0.3%). This was despite wholesale energy prices rising by over 21% year on year and was achieved by Scottish Water's pro-active management of the energy purchasing programme. In addition operating costs of £1.5m as a result of capital investment were absorbed during the year. Additional running costs were offset by reduced consumption which reduced from 476 GWh in 2007/08 to 470 GWh in 2008/09 due to leakage reduction and more efficient operations (£1.7m), partly offset by reduced renewable energy credits of £0.3m.

Hired and contracted costs (E1.3 & E2.3) have increased by £13.8m (66.5%) to £34.6m. Water Service costs increased by £14.6m due, in the main, to higher levels of network maintenance in order to improve customer service and leakage reduction, and additional operating costs as a result of capital investment. Sewerage service costs have decreased by £0.8m due to more efficient network maintenance activity £1.3m, partly offset by additional operating costs as a result of capital investment £0.5m .

Materials and consumables expenditure (E1.4 & E2.4) decreased by £2.7m (16.4%) to £13.6m. Chemical costs decreased by £0.6m due in the main to leakage reduction, cost-out initiatives and procurement efficiencies, partly offset by additional operating costs resulting from new investment £0.3m. Material costs decreased by £2.1m, this is due to reduced repair and maintenance activity, most notably on wastewater assets.

SEPA costs (E1.5 & E2.5) increased by £0.2m (1.8%) to £10.3m due mainly to inflationary increases.

Other direct costs (E1.7 & E2.6) reduced by £1.0m (20.1%) to £4.1m mainly due to a reduction in insurance claim costs reflecting reduced liabilities.

General and Support costs (E1.9 & E2.8) increased by £3.7m (11.6%) to £35.5m. The main increases were inflationary performance pay increases £0.5m; reduced recovery of fixed IT costs from SWS and Business Stream £1.8m, partly offset by IT cost reductions of £0.4m; increased VR costs £1.0m; and other support activity expenditure £0.8m.

Business activities

Total business activities expenditure (E1.14 & E2.13) has decreased by £0.3m from 2007/08 (as detailed below).

	2008/09	2007/08	Variance
	£m	£m	£m
Customer services (E1.11 & E2.10)	17.331	18.020	+0.689
Scientific services (E1.12 & E2.11)	11.560	10.826	(0.734)
Other business activities (E1.13 & E2.12)	7.847	8.234	+0.387
Total business activities (E1.14 & E2.13)	**36.738**	**37.080**	**+0.342**

Customer services costs have decreased by £0.7m due to a reduction in vacant property surveys from prior year £0.4m and reduced retail separation / market set-up activity £0.4m, partly offset by increases on the council billing and collection service £0.1m and additional internal billing activity £0.2m.

Scientific services regulated operating expenditure has increased by £0.7m due to an increase in Scientific Services direct costs £0.4m driven by inflation and an increase in the volume of regulatory samples (+6%). Also, in 2007/08 there was a shift in the mix of samples and tests from Opex to Capex for Q&S3 projects such as lead survey work. As this capital work has reduced in 2008/09 there has been a shift back from Capex to Opex of £0.3m.

Other Business Activities costs have decreased by £0.4m due to a decrease in CMA costs of £1.5m, which included set-up costs in 2007/08. This decrease was partly offset by increased WICS fees £0.7m and increased internal regulation activity of £0.4m to meet new regulatory requirements.

Rates

Local authority rates (E1.15 & E2.14) increased by £2.4m (8.2%) from 2007/08 due to inflationary increases £1.1m; and loss of transitional relief £1.7m; partly offset by an increase in allocation to rates on non regulated activity and therefore a reduction to core of £0.3m.

Doubtful debts

Total doubtful debt costs increased by £7.7m to £21.8m (54.6%), as detailed below.

	2008/09	2007/08	Variance
	£m	£m	
	Charge	Charge	
Regulated	21.222	12.015	(9.207)
Non Regulated	0.595	2.082	+1.487
Third Party	0.000	0.000	+0.000
	21.817	14.097	(7.720)

In 2007/08 there was an atypical release of household bad debt provision of £17.6m and £8.1m in 2008/09, which drives the increase of £9.2m on Regulated doubtful debt.

There has been a decrease in the bad debt provision on non regulated and regulated third party services of £1.5m. This is due to an improvement in sundry billing and credit management activities since the initial transfer of sundry billing from Business Stream to Scottish Water.

Third party costs

Since 2007/08 Non Regulated activity costs have been excluded from E tables.

Third party costs (E1.19 & E2.18) have been allocated between core and non core in accordance with Regulatory Accounting definitions.

Third party costs consist of:

	2008/09	2007/08	Variance
	£m	£m	£m
Non Regulated activities	0.000	0.000	+0.000
Core third party services	6.395	6.200	(0.195)
	6.395	**6.200**	**(0.195)**

Core Third Party services costs have increased by £0.2m. The main reasons for this movement are:-

- £1.5m of Scottish Water expenditure has been charged to Business Stream under Service Agreements. This cost has been netted off Scottish Water's expenditure for the purposes of group 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. This is split £1.0m operating expenditure and £0.5m capital maintenance. In 2007/08 the figure was £4.1m, split £2.6m operating cost, £1.5m capital maintenance. Core Third Party costs (Opex) have therefore decreased by £1.6m;
- £0.9m increase in the allocation of wholesale water costs to miscellaneous third party services (field troughs, standpipes and building water);
- £0.6m increase fire hydrant installation and maintenance costs;
- £0.3m increase in mains diversions costs.

Capital maintenance

Capital maintenance costs (E1.30 & E2.29) increased by £22.7m to £264.4m. The main reasons for the increase were a higher Infrastructure Maintenance Charge £14.0m to reflect the level of underlying and long term asset plan forecast investment; the Non-infrastructure Depreciation impact of increased capital investment £7.0m; and an increase in Business Activities depreciation £1.9m, due mainly to the commissioning of wholesale/retail interface assets.

Water/Wastewater Split of Costs

The proportion of functional expenditure to water activities has increased to 57% in 2008/09 from 52% in 2007/08, as detailed in the table below. This was primarily due to the significant increase in water network maintenance to improve customer service and reduce leakage.

	2008/09	2008/09	2007/08	2007/08
	£m	%	£m	%
Water E1.10	109.506	56.8%	91.845	52.1%
Wastewater E2.09	83.345	43.2%	84.483	47.9%
	192.851	100.0%	176.328	100.0%

Of the £16.5m increase in the year £17.7m was in Water. These increases occurred as detailed below:-

- £1.4m (4.2%) increase in employment costs from 2007/08 reflecting inflationary, performance pay and pension increases £1.8m, partly offset by improved efficiency;
- £0.3m (1.6%) reduction in power costs is primarily due to a reduction in consumption enabled by improved efficiency and leakage reduction £0.9m, which offset additional costs resulting from capital investment £0.6m;
- £14.6m (200.4%) increase in hired and contracted costs is due, in the main, to higher levels of network maintenance in order to improve customer service and leakage reduction, and additional operating costs as a result of capital investment;
- £1.2m (9.8%) reduction in materials and consumables is due to: chemical cost reductions through cost-out initiatives, procurement efficiencies and leakage reduction £0.9m, and reduced asset repair costs £0.6m, partly offset by new operating costs £0.3m;
- £0.3m (11.3%) decrease in other direct costs is primarily due to a reduction in insurance claim costs reflecting reduced liabilities;
- £3.3m (19.6%) increase in general and support costs was due to the overall increases in general and support: inflationary performance pay increases £0.5m; reduced recovery of fixed IT costs from SWS and Business Stream £1.8m, partly offset by IT cost reductions of £0.4m; increased VR costs £1.0m; and other increased support activity expenditure £0.8m; and the shift in support activity reflecting the overall core activity shift from wastewater to water.

Wastewater functional expenditure decreased by £1.1m from 2007/08 to £83.3m. Decreases occurred in wastewater as detailed below:-

- £1.0m (3.8%) increase in employment costs from 2007/08 due to inflationary, performance pay and pension increases £1.4m, partly offset by operational efficiencies;
- £0.4m (2.1%) increase in power costs is primarily due to new operating costs of £0.9m, partly offset by improved operating efficiencies;
- £0.8m (6.1%) decrease in hired & contracted costs is primarily due to more efficient network maintenance activity £1.3m, partly offset by additional operating costs as a result of capital investment £0.5m; .
- £1.5m (36.5%) decrease in materials and consumables mainly due to reduced repair and maintenance activity;
- £0.1m (1.5%) increase in SEPA Charges, mainly due to an inflationary increase;
- £0.7m (31.0%) decrease in other direct costs due to a reduction in insurance claim costs reflecting reduced liabilities;
- £0.4m (2.7%) increase in general and support costs due to overall increases in general and support costs described above, under the Water Services explanation; and the and the shift in support activity reflecting the overall core activity shift from wastewater to water.

Table E1 Activity Based Costing - Water Service

E1.0-10 Service Analysis - Water: Direct Costs

Table 1a

Water Resources & Treatment E1.10

	Total
Functional expenditure:	£m
2008/09	45.035
2007/08	45.271
	+0.236

Water resources and treatment costs decreased by £0.2m in 2008/09 compared with 2007/08. This increase occurred as follows:-

- £0.3m (2.6%) decrease in employment costs from 2007/08 due to operational efficiencies, partly offset by inflationary and performance pay increases £0.6m;
- £0.2m (2.1%) increase in power costs is primarily due to new operating costs £0.6m, partly offset by improved supply management and leakage reduction;
- £0.5m (28.2%) increase in hired and contracted costs is due to new operating costs £0.1m and movement of £0.4m water sludge disposal costs incorrectly allocated to Sludge Treatment and Disposal in 2007/08;
- £0.9m (9.0%) decrease in materials and consumables is mainly due to: chemical cost reductions through cost-out initiatives, procurement efficiencies and leakage reduction £0.9m and reduced asset repair costs £0.3m, partly offset by new operating costs £0.3m;
- £0.1m (2.6%) increase in SEPA charges mainly due to inflationary increases;
- £0.3m (20.2%) decrease in other direct costs due to insurance claims reduction;
- £0.6m (7.7%) increase in general and support costs due to inflationary increases and support activity allocation increases.

Water Distribution E1.10

	Total
Functional expenditure:	£m
2008/09	64.471
2007/08	46.574
	(17.897)

Water distribution costs increased by £17.9m (38.4%), from 2007/08. This is analysed as follows:-

- £1.8m (8.3%) increase in employment costs due to: inflation, performance pay and pension increases £1.1m; and additional customer service and leakage reduction activity £0.7m;
- £0.4m (6.2%) decrease in power costs mainly due to leakage reduction;
- £14.1m (261.4%) increase in hired and contracted costs due mainly to additional leakage detection and repair activity;
- £0.3m (13.8%) decrease in materials and consumables due mainly to reduced repairs and maintenance and activity;
- £2.7m general and support costs increase due to the overall increases in general and support for: inflationary performance pay increases; reduced recovery of fixed IT costs from SWS and Business Stream, partly offset by IT cost reductions; increased VR costs; and the shift in support activity reflecting the overall core activity shift from wastewater to water.

E1.11-20 Operating Expenditure

E1.11 - Customer Service costs allocated to water have reduced by £0.4m (4.4%) to £8.9m compared with 2007/08. Non household customer services costs decreased by £0.5m to £0.8m, due to: a reduction in vacant property surveys £0.4m; reduced retail separation / market set-up activity £0.2m, partly offset by additional internal billing activity £0.1m. Household customer services costs have increased by £0.1m to £8.1m mainly due to inflationary increases in the council billing and collection services.

E1.12 - Scientific services regulated operating expenditure allocated to water has increased by £0.8m (8.4%) to £10.2m. The split of samples and tests has remained relatively stable at around 90% water / 10% wastewater. However, overall there has been an increase in Scientific Services direct costs £0.4m driven by inflation and an increase in the volume of regulatory samples (+6%); and a shift in the mix of samples and tests from Capex to Opex £0.3m, mainly impacting water.

E1.13 - Other business activities allocated to water have remained at the same level as 2007/08 at £4.3m with CMA costs reducing by £0.6m, offset by increases in WICS fees and internal regulation activity.

E1.15 - Local Authority Rates for water increased by £2.7m (14.0%) to £22.2m compared to 2007/08. This was primarily due to: inflationary increases £0.9m; loss of transitional relief £1.6m; increased allocation rates to water support activity £0.2m.

E1.16 - Doubtful debts allocated to water increased by £4.4m to £10.2m. In 2007/08 there was an atypical release of household bad debt provision of £17.6m, and £8.1m in 2008/09, which drives the increase of £9.2m in total on Regulated doubtful debt, of which 48% is allocated to water.

E1.19 - Third party opex (Regulated) allocated to water increased by £0.8m to £3.5m. The main movements year on year are:

- £0.8m increase in the allocation of wholesale water costs to miscellaneous third party services (field troughs, standpipes and building water)
- £0.5m increase fire hydrant installation and maintenance costs
- £0.3m increase in mains diversions costs
- £0.8m reduction in recharge of operating costs to Business Stream

E1.21-22 Reactive and Planned Maintenance (included in Opex)

Water Reactive and Planned Maintenance (included in Opex) has increased by £16.7m (84.3%) to £36.4m on infrastructure due mainly to increased leakage detection and inflationary increases. Expenditure on non-infrastructure assets reduced by £1.4m (22.8%) to £4.6m, mainly due to less reactive repair work.

E1.23-30 Capital Maintenance

E1.23-30 - Depreciation is allocated between water and wastewater based on the asset information held in the fixed asset register. For other assets including IT, plant, machinery, vehicles and property, the total depreciation from the fixed asset register is allocated across all business activities (including other business activities) using ABM cost driver data, such as IT application users.

There has been an increase in the infrastructure maintenance charge (IMC) of £14.0m overall, of which £21.9m on water. The increase in the charge to £104.0m in 2008/09 reflects the long term asset plan forecasts which have been updated for the 2010 Strategic Review showing an increasing cost associated with maintaining the infrastructure asset base. The infrastructure charge for 2008/09 was £104.0m with £76.5m, 74%, being attributed to water and £27.5m, 26%, being attributed to wastewater.

There has been an increase in Non-Infrastructure depreciation charged to water of £3.2m reflecting the impact of newly commissioned assets.

There has been an increase in Business Activities depreciation £1.2m, due mainly to the commissioning of wholesale / retail interface assets.

There has been an increase in Third Party services depreciation chargeable to water of £0.5m. This was due to:

- £1.0m increase in the allocation of wholesale water costs to miscellaneous third party services (field troughs, standpipes and building water)
- £0.5m decrease in recharge of support activity to Business Stream under service agreements

Confidence Grades – Confidence grades on Table E1 remain consistent with 2007/08, with improvements on some lines (noted below).

Direct costs are, in the main, 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. Further improvements in IT cost driver data have been made but not sufficient to enable an upgrading from A2 to A1.

Table E2 Activity Based Costing - Waste Water Service

E2.0-9 Service Analysis - Waste Water : Direct Costs

Table 2a

Sewerage E2.9

	Total
Functional expenditure:	£m
2008/09	35.520
2007/08	37.266
	+1.746

Sewerage costs decreased by £1.7m as outlined below:-

- £0.8m (6.5%) increase in employment costs from 2007/08 due, in the main, to inflationary, performance pay and pension increases £0.6m and additional maintenance activity;
- £0.2m (3.9%) increase in power costs was primarily due to new operating costs;
- £1.1m (14.4%) decrease in hired & contracted costs due to more effective and efficient management network maintenance activities;
- £1.3m (67.1%) decrease in materials and consumables due again to cost reductions on network maintenance activity;
- £0.2m (18.4%) reduction in SEPA charges due to some back billing from SEPA in 2007/08;
- £0.4m (32%) reduction in other direct costs mainly due to reduced insurance claims costs; £0.2m (2.2%) increase in general and support costs mainly due to inflationary increases.

Sewage Treatment E2.9

	Total
Functional expenditure:	£m
2008/09	36.304
2007/08	36.642
	+0.338

Sewage treatment costs reduced by £0.3m from 2007/08 as outlined below:-

- £0.1m (0.6%) reduction in employment costs from 2007/08 due to £0.3m increase in allocation of costs from wastewater treatment to sludge treatment; improved efficiency £0.3m; partly offset by inflationary, performance pay and pension increases £0.5m;
- no change in power costs at £9.8m, although £0.8m new operating costs were offset by more efficient operations £0.7m and an increase in the allocation to sludge treatment £0.1m;
- £0.1m (8.2%) decrease in hired & contracted costs due to reduction in reactive maintenance £0.4m, partly offset by an increase in planned maintenance activity;
- £0.2m (13.6%) decrease in materials and consumables mainly due to reduced repair activity;

- £0.3m (4.5%) increase in SEPA costs mainly due to credits issued in 2007/08 £0.2m and inflationary increases £0.2m, partly offset by an increased allocation to sludge treatment of £0.1m;
- £0.3m (31%) decrease in other direct costs due to reduced insurance claims;
- £0.2m (2.7%) increase in general and support costs reflecting the overall increases in general and support costs, partly offset by a shift in the allocation of support activity to water.

Sludge Treatment E2.9

	Total
Functional expenditure:	£m
2008/09	11.521
2007/08	10.575
	(0.946)

Sludge treatment costs have increased by £0.9m from 2007/08 as outlined below:-

- £0.2m (9.7%) increase in employment costs due to inflation and increased allocation from wastewater treatment;
- £0.2m (10.5%) increase in power mainly due to an increased allocation from wastewater treatment;
- £0.4m (8.7%) increase in hired & contracted costs due to inflationary increases in landfill tax and contractor fees £0.3m, and new operating costs £0.3m, offset by £0.2m water sludge disposal costs incorrectly allocated to Sludge Treatment and Disposal in 2007/08;
- £0.1m increase in SEPA costs due to an increased allocation from wastewater treatment;
- £0.1m (4.2%) increase in general and support costs mainly due to inflationary increases.

E2.10-19 Operating Expenditure

E2.10 - Customer Service costs allocated to wastewater have reduced by £0.3m to £8.5m compared with 2007/08. Non household customer services costs decreased by £0.4m to £0.6m due to: a reduction in vacant property surveys £0.4m; reduced retail separation / market set up activity £0.2m; partly offset by additional internal billing activity. Household customer services costs have increased by £0.1m to £7.8m mainly due to inflationary increases in the council billing and collection services.

E2.11 - Scientific services regulated operating expenditure allocated to wastewater decreased slightly by £0.1m (3.6%) to £1.4m. There has been a slight reduction in the proportion of wastewater samples compared to total samples, which has resulted in a reduced allocation to wastewater.

E2.12 - Other business activities allocated to wastewater have decreased by £0.4m (10.1%) to £3.5m compared to 2007/08. This was mainly due to a shift in some of the cost allocation drivers from wastewater to water.

E2.14 - Local Authority rates for wastewater operational assets were captured directly at asset level in the general ledger. Costs charged to wastewater decreased by £0.3m (3.4%) to £9.5m. This was mainly due to an increase in allocation to rates on non regulated and

water activity £0.6m, offset by inflationary increases of £0.2m and £0.1m due to loss of transitional relief.

E2.15 - Doubtful debts allocated to wastewater increased by £4.8m to £11.0m. In 2007/08 there was an atypical release of household bad debt provision of £17.6m, and £8.1m in 2008/09, which drives the increase of £9.2m in total on Regulated doubtful debt, of which 52% is allocated to wastewater.

E2.18 - Third party opex (Regulated) allocated to wastewater decreased by £0.6m to £2.9m due, in the main, to a £0.7m reduction in recharge of operating costs to Business Stream.

E2.20-21 Reactive and Planned Maintenance (included in Opex)

Wastewater Reactive and Planned Maintenance (included in Opex) on Infrastructure has decreased by £3.1m (20%) to £12.3m, due to more effective and efficient management of network maintenance activities.

Wastewater Reactive and Planned Maintenance (included in Opex) on Non Infrastructure assets has decreased by £1.7m (19.4%) to £7.2m, due to reduced reactive maintenance activity.

E2.22-29 Capital Maintenance

E2.22-29 - Depreciation is allocated between water and wastewater based on the asset information held in the fixed asset register. For other assets including IT, plant, machinery, vehicles and property, the total depreciation from the fixed asset register is allocated across all business activities (including other business activities) using ABM cost driver data, e.g. IT application cost split by users and their activities.

There has been an increase in the infrastructure maintenance charge (IMC) of £14.0m overall, with a £7.9m reduction on wastewater. The reduction in 2008/09 reflects the long term asset plan forecasts which have been updated for the 2010 Strategic Review showing a reduced cost associated with maintaining the wastewater infrastructure asset base. The infrastructure charge for 2008/09 was £104.0m with £76.5m, 74%, being attributed to water and £27.5m, 26%, being attributed to wastewater.

There has been an increase in Non-Infrastructure depreciation charged to wastewater of £3.8m reflecting the impact of capital investment projects going live.

There has been increase an in Business Activities depreciation £0.7m, due mainly to wholesale / retail interface assets commissioned.

There has been a reduction in Third Party services depreciation chargeable to wastewater of £0.6m. This was mainly due to a decrease in recharge of support activity to Business Stream under service agreements.

Confidence Grades – Confidence grades on Table E2 remain consistent with 2007/08, with improvements on some lines (noted below).

Direct costs are, in the main, 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. Further improvements in IT cost driver data have been made but not sufficient to enable an upgrading from A2 to A1.

Table E3 & 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.

E3.0-6 Project data

E3.1-3.3 Project Data

E3.1 Annual average resident connected population

The annual average resident connected population increased by 24,466 (1.2%) to 2,092,457.

Two factors contributed to this increase:

- The general increase in the population of the country
- The ongoing work to improve the coverage of sewered areas across the country

The work to improve the sewered area coverage has meant that all sewage treatment works (STW) have an associated spatial object. This has obviated the need to make an

assessment of population for a large number of STWs, leading to more accurate figures being derived.

The confidence grade remains at B3 as we have yet to complete the sewered area work.

E3.2 Annual average non-resident connected population

The annual average non-resident connected population increased by 3,175 (10%) to 34,955.

This is possibly due to the following:

- A reflection of the general downturn in the economy leading to more UK residents choosing to holiday in Scotland rather than travel abroad.
- The ongoing sewered area work leading to more tourist properties being included in each catchment.

The confidence grade remains at B3 which is unchanged from the Annual Return 2007/08.

E3.3 Population equivalent of total load received

The population equivalent of total load received decreased by 110,203 (3.3%) to 3,226,353.

This drop is due to a reduction in the trade effluent load reported as being received at these STW.

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 STW sludge
- Imported WTW sludge
- Sludge return liquors

Population (64.86% of total load)
The population load increased by 24,248 p.e (0.8%). The reasons for the change in this figure are discussed in the commentary for Table E3 line 1.

Tourist (1.08% of total load)
The tourist load increased by 3,175 p.e (10%). The reasons for the change in this figure are discussed in the commentary for Table E3 line 2.

Non-domestic load (13.54% of total load)
The non-domestic load decreased by 6,513 p.e (1.5%).

Trade effluent (20.29% of total load)
The trade effluent load decreased by 130,892 p.e (16.7%). Due to the opening of the retail market to competition in April 2008, the source of this data is now the Central Market Agency. The changes in trade effluent are covered in more detail in the P Tables commentary.

Imported private septic tanks (0.03% of total load)
The imported private septic tanks load increased by 526 p.e (102.3%). This rise is due to improvements we have made to our septic tank emptying process.

Imported public septic tanks (<0.01% of total load)
The imported public septic tanks load decreased by 836 p.e (88.4%). This change is due to a combination of reducing de-sludge frequencies, a management initiative to reduce tankered sludge movements (leading to a 3% reduction this year) and greater volumes being discharged directly to Sludge Treatment Centres.

Imported other
No imported other loads were treated at PPP treatment works.

Imported STW sludge (0.38% of total load)
The imported STW sludge load increased by 6,412 p.e (110.6%). We now track all sludge movements electronically in our Gemini system. This has led to a more accurate figure being used this year.
Imported WTW sludge (0.15% of total load)
The imported WTW sludge load decreased by 6,371 p.e (93.2%). More of our WTW sludge is now being taken to Shieldhall rather than to PPP works.

Sludge return liquors (0.06% of total load)
The sludge return liquor load increased by 48 p.e (2.7%).

The confidence grade remains at B3 which is unchanged from 2007/08.

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. This includes 9 pumping stations that were connected to Nigg in July 08.
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 (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 for a limited period.

East Calder	Sludge dewatering, exported as cake
Persley, Peterhead, Fraserburgh	Due to lack of process capacity at Nigg during Apr 08 and May 08 dewatered sludge was exported as cake.

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).

At Nigg an interstage pumping station was mistakenly reported as a terminal pumping station in previous years.

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.

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 CAR

E3.12 Ammonia consent – all CAR

E3.13 Phosphate consent – all CAR, 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 2008 has been taken as the definitive data source, provided by our Regulator, and as such a Confidence Grade of A1 has been assigned.

Failures:

Site	Parameter	Date of Failure	Comment
Nigg	BOD	20/1/08 E	Failure during period of high risk due to carrying out work to improve BAFF & problems with operation of the lamella processes.
	COD	20/1/08 E, 1/7/08 E	
Persley	TSS	8/9/08 F	Failure of belt press led to build up of sludge within process which was washed out during a rainstorm.
	BOD	8/9/08 E	
Lossiemouth	COD	20/2/08	Slight exceedance, which did not match with PPP Co results, but appeal to SEPA was unsuccessful.

Newbridge	BOD	4/12/08 E	Result (16mg/l BOD against a consent limit of 15mg/l) challenged by Operator as contractual sample was compliant (6mg/l). Challenge sits with SEPA, pending consideration – likely outcome is that result will stand.
	Ammonia	9/1/08 E	Ammonia reducing bacteria were inhibited by a suspected trade or illegal discharge. Addressed through close co-ordination with SW TEQ team and close operational scrutiny.
Blackburn	Ammonia	29/9/08 E	Linked with operational activities at filter beds. Weeding of filter beds carried out whilst filter arms stationary, resulting in short circuiting of flow and inadequate ammonia treatment.
Whitburn	Ammonia	9/4/08 E	Failure associated with operational overloading of nitrifying trickling filters with high strength ammonia liquor from a sludge holding tank.
Dalmuir	BOD	12/2/08 F, 27/8/08 E, 15/9/08 F, 1/10/08 E, 9/10/08 E, 29/10/08 F, 13/11/08 F	Failures due to process trials to purge system of effects of chemical dosing
	COD	12/2/08 E, 15/9/08 E, 29/10/08 E, 13/11/08 E	

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.
Fraserburgh	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, Scottish Water GIS system, as built drawings, SEPA consents.

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

Scottish Water GIS will be updated to include as built records of new sewer constructed by PPP 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.

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.

Nigg - 9 pumping stations were connected in July 08 (Backies , Cowie (3), Slughead, Bridge of Muchalls, and Cammachmore).

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) – connected in Jul 08
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
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

Backies and Cowie were connected to Nigg in Jul 08.

Seafield - Dalkeith Stormwater works (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 6 mm screen), 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. Last year this was reported in Table E10 as per the WIC request in query AR134 (4 August 2008).

Table E3a

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 Daldowie (Rates only), MSI and AVSE 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.

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 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

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

These are based on SEPA charges for 07/08 provided by the PPP Companies.

Confidence grade for total charges for each site is A2, but because SEPA fees have to be split to take account of the sewerage, treatment and sludge elements the following confidence grades have been assigned:

	E3a.3	**E3a.10**	**E3a.18**	
Site	**N**	**T**	**S**	**Comment**
Fort William	A2	A2	N	Split provided by PPP Co, no sludge centre at works
Inverness	A2	A2	A2	Split provided by PPP Co
Hatton	A2	A2	A2	Split provided by PPP Co
Nigg	B2	A2	A2	Split provided by PPP Co, includes estimate for some missing network costs
Persley	N	A2	N	Split provided by PPP Co, no sludge centre at works
Peterhead	N	A2	N	Split provided by PPP Co, no sludge centre at works
Fraserburgh	A2	A2	N	Split provided by PPP Co, no sludge centre at works
Lossiemouth	A2	A2	A2	Split provided by PPP Co
Buckie	A2	A2	N	Split provided by PPP Co, no sludge centre at works
Banff MacDuff	A2	A2	N	Split provided by PPP Co, no sludge centre at works
Seafield	N	B3	A2	Costs provided by PPP Co, no split was provided between sewerage and sewage treatment
Newbridge	N	B3	A2	Costs provided by PPP Co, no split was provided between sewerage and sewage treatment
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	Split provided by PPP Co
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 PPP 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.

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 deals with PPP schemes 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 PPP 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:

	E3a.5	E3a.12	E3a.20	
Site	**N**	**T**	**S**	**Comment**
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 cost against sludge as no sludge centre
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	N	No sewerage and no sludge centre at works
Daldowie	C4	N	C4	No sewage treatment at works
Meadowhead	N	C4	C4	No sewerage
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.

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

E3a.15 Estimated terminal pumping cost – Reported costs are as per the costs incurred for the Scottish Water 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 have to be split across all sites a confidence grade of C4 has been allocated.

Site	08/09	07/08	Variance	Comment
Ft William	0.034	0.023	0.011	higher legal/consultants costs £0.01m
Inverness	0.554	0.434	0.120	higher sludge costs £0.12m (07/08 did not include sludge disposal costs £0.09m)
Hatton	0.384	0.376	0.008	07/08 incl Consultants cost £0.06m;

				08/09 incl Consultants cost £0.03m and additional Management costs £0.02m, increased sludge costs £0.04m and reduced terminal pumping costs -£0.03m
Nigg	1.041	0.942	0.099	07/08 incl legal/consultants fees £0.19m, compensation payments £0.08m; 08/09 includes legal fees £0.01m, and electricity £0.25m and other Authority operating costs £0.02m, additional Management costs £0.02m, increased sludge costs £0.04m
Persley	0.014	0.029	-0.015	07/08 includes WRc site audit £0.02m
Peterhead	0.070	0.041	0.029	07/08 includes WRc site audit £0.03m, and increased terminal pumping costs £0.05m
Fraserburgh	0.009	0.038	-0.029	07/08 includes WRc site audit £0.03m
Lossiemouth	0.266	0.331	-0.065	07/08 includes additional Authority operating costs relating to Moycroft £0.09m, and increased terminal pumping costs £0.01m
Buckie	0.026	0.027	-0.001	
Banff/Macduff	0.032	0.026	0.006	
Seafield	0.399	0.437	-0.038	07/08 includes additional consultants fees £0.08m, 08/09 includes additional Management costs £0.02m, and increased terminal pumping costs £0.02m
Newbridge	0.023	0.017	0.006	
East Calder	0.009	0.007	0.002	
Blackburn	0.005	0.004	0.001	
Whitburn	0.006	0.004	0.002	
Levenmouth	0.076	0.101	-0.025	07/08 additional legal fees £0.04m, 08/09 includes additional Management costs £0.01m
Dalmuir	0.443	0.567	-0.124	07/08 includes additional legal/consultants £0.03m, 08/09 includes reduction in insurance costs £0.1m,
Daldowie	1.678	1.631	0.047	07/08 incl additional ops re-charge £0.13m, additional legal/consultants fees £0.08m, 08/09 includes additional Management costs £0.02m, and increased sludge costs £0.24m
Meadowhead	0.738	0.488	0.250	07/08 additional legal/consultants fees £0.03m, 08/09 includes increased SEPA costs £0.18m, and increased terminal pumping costs £0.09m
Stevenston	0.222	0.195	0.027	07/08 additional legal/consultants fees £0.06m, 08/09 includes increased SEPA costs £0.09m
Inverclyde	0.122	0.112	0.010	07/08 additional legal/consultants fees £0.04m, 08/09 includes increased SEPA costs £0.01m, and increased terminal pumping costs £0.04m
TOTAL	**6.151**	**5.830**	**0.321**	

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	08/09	07/08	Variance	Comment
Ft William	3.047	2.941	0.106	mostly inflation
Inverness	5.935	6.040	-0.105	08/09 lower flows
Hatton	19.704	19.480	0.224	08/09 higher flows and inflation £0.16m, lower costs during the pea season £0.05m, accrual reversals £0.11m
Nigg	12.208	12.778	-0.570	08/09 higher flows and inflation £0.37m plus Variation Availability Payment from Jul 08 £1.58m, claims and other variations £ 0.78m, increased rates rebate £0.02m, accrual reversals £0.05m, 07/08 includes Cambi upgrade £0.16m, Baff Plant £0.1m, additional variation costs £3.02m, Tankering Re-charge -£0.06m,
Persley	2.206	2.265	-0.059	08/09 lower flows
Peterhead	1.878	2.736	-0.858	08/09 lower flows/loads £0.49m, lower fishing season cost £0.29m, accrual reversals £0.08m
Fraserburgh	1.854	2.205	-0.351	08/09 lower flows £0.17m, 07/08 incl Tankering of sludge liquid £0.16m
Lossiemouth	3.952	3.137	0.815	08/09 lower flows £0.17m, 07/08 includes release of accrual £0.97m
Buckie	2.903	2.922	-0.019	08/09 lower flows £0.39m, 07/08 includes release of accrual £0.37m
Banff/Macduff	3.114	2.800	0.314	08/09 lower flows £0.27m, 07/08 includes release of accrual £0.590m
Seafield	16.513	15.970	0.543	08/09 increased compliance with the contract £0.74m, higher sludge rebate £0.01m, reduced rates £0.01m, release of accrual £0.01m (AVSE total)
Newbridge	2.321	2.265	0.056	
East Calder	1.346	1.300	0.046	
Blackburn	0.687	0.652	0.035	
Whitburn	0.871	0.831	0.040	
Levenmouth	11.880	9.132	2.748	08/09 higher fees due to very high inflation (gas price) £2.64m, NC - SEPA change COPA to CAR £0.07m, sludge tankering £0.04m
Dalmuir	7.932	7.559	0.373	08/09 higher flows, rates, rebates and inflation £0.18m, additional provisions £0.2m
Daldowie	16.588	15.193	1.395	08/09 higher sludge volumes £1m, claims/contributions -£0.32m, lower release of accruals £0.7m
Meadowhead	7.939	7.209	0.730	08/09 includes inflation £0.12m, PPP Co share of PADR cost and potable water -£0.04m, Landfill Tax & Gas cost £0.39m, UPM NC £0.11m, lower Oxygen dosing

Site	08/09	07/08	Variance	Comment
				cost -£0.24m, remove screenings £0.69m, 07/08 includes claims/contributions -£0.29m
Stevenston	3.867	3.901	-0.034	08/09 lower flows and inflation £0.3m, DSM NC costs £0.71, accrual reversals -£0.12m, 07/08 includes provision for DSM claim -£0.66m
Inverclyde	3.169	3.177	-0.008	08/09 inflation £0.06m, accrual reversals -£0.04m, 07/08 includes provision for screenings claim -£0.03m
TOTAL	**129.914**	**124.493**	**5.421**	

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 2001/02 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

E4.1-4.12 Source Types

E4.1-4.5

The number of sources decreased by 13 (3.5%) to 358. Changes to the number of sources used this year are detailed in the below table:

Source Type	2007/08	2008/09	Net Change
Impounding reservoirs	117	116	-1
Lochs	46	47	+1
River and burn abstractions	115	105	-10
Boreholes	93	90	-3
Total	**371**	**358**	**-13**

This reduction has arisen principally because a number of previously reported sources supplied water treatment works (WTW) were closed during 2007/08, as detailed in the below table:

2007/08 No. of sources	*371*
Reductions due to WTW closures	-16
Additions due to WTW openings	+3
2008/09 No. of sources	**358**

Distribution input (DI) reduced by 127.5 Ml/d (5.6%) to 2143.7 Ml/d. The cause of this drop is explained in the Table A2 commentary.

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

Source Type	2007/08	2008/09	Net Change
	Ml/d		
Impounding reservoirs	1,592.8	1,534.6	-58.2
Lochs	38.8	38.4	-0.4
River and burn abstractions	570.1	501.4	-68.7
Boreholes	69.5	69.3	-0.2
Total	**2,271.2**	**2,143.7**	**-127.5**

As last year, we have completed columns 110–180 by assuming that, where multiple sources feed a WTW, the total average daily output comes only from the primary source, where DI is consistent with that reported in Table A2. The primary source is therefore allocated 100% of the DI and all other sources are allocated 0.

The confidence grade in the number of sources is B2 because this number is extracted from our asset inventory, which does not identify whether a source is a direct or indirect supply. The confidence grade for columns 110-180 (the average daily output of these sources) has increased from C3 to B3, reflecting the work carried out for the water balance project.

E4.6-4.7 Bulk water exports & imports

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

E4.8-4.12 Proportion of own source output

There were only minor changes to the source type proportions of total distribution input (DI) this year, as detailed in the below table.

Source Type	2007/08	2008/09	Net Change
	Proportion (%) of Total DI		
Impounding reservoirs	70.1	71.6	+1.5
Lochs	1.7	1.8	+0.1
River and burn abstractions	25.1	23.4	-1.7
Boreholes	3.1	3.2	+0.1

E4.13-4.14 Peak Demand and Pumping Head

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 was 2004/05. In that year, A was 2377.9 Ml/d and B was 2438.5 Ml/d. The peak to average ratio is therefore 1.025.

The figure is based on weekly reported distribution input (DI) and the confidence grade assigned to it is therefore based on the confidence grade of the DI in the peak year. The confidence grade therefore remains at C4.

E4.14 Average pumping head – resources and treatment

The average pumping head decreased by 2.0m (7.3%) to 25.3m.

This drop was primarily due to a reduction in the volume of water pumped, as a result of operational changes.

Changes in the average pumping head and the number of pumps this year are detailed in the table below:

	Ave. Pumping head (m)	No. of Pumps
2007/08	*27.24*	*141*
Removed pumps	0.01	4
Added pumps	0.06	25
Flow and lift data gathered this year that supersedes previous data	-2.03	
2008/09	**25.26**	**162**

Flow and lift data was available for 72% of the pumps this year. This represents 92% of pumping carried out; the 8% balance of the data was estimated.

We acknowledge the clarity, provided in the Commission's definition, for the inclusion into the overall pumping head calculation, of pumping undertaken as part of the treatment process and the pumping of process water. As for last year, we are unable to include this element of pumping in the calculation this year because we have insufficient data.

The confidence grade is driven principally by the confidence grade of the distribution input, which is an inherent part of the calculation of pumping head, and remains at C3.

E4.15-19 Functional costs by operational area

Overall movements are explained in table Water Resources and Treatment E1.10 earlier in this commentary.

Water resources and treatment costs are analysed by region:-

	Ness	Don	Forth	Tay	Ayr	Clyde	Nith	Tweed	TOTAL
Total treatment works	£m	£m	£m					£m	£m
2008/09	7.080	7.153	7.044	4.003	5.715	4.729	4.480	4.831	**45.035**
2007/08	7.499	6.792	6.523	4.400	5.809	4.968	4.718	4.562	**45.271**
	+0.419	**(0.361)**	**(0.521)**	**+0.397**	**+0.094**	**+0.239**	**+0.238**	**(0.269)**	**+0.236**

Movements in individual works explain the increases and decreases by region. Some of the larger movements are:

- Increase in Clyde due to full year operation of new Milngavie works £0.4m offset by reduced operation at Balmore works £0.5m;
- Misallocation of power in 2007/08 meant Ness was overstated by £0.4m and Tweed was understated by £0.4m;
- Increase in Don due to water supply problems at South Hoy works requiring significant tankering operations (including hire of ferry) £0.2m;
- Increase in Forth due to additional sludge tankering because of sludge press problems at Carron Valley £0.25m;
- Decrease in Tay due to better risk management of Glenfarg works and consequential reduction in pumping at River Earn RWPS £0.2m.

Analysis of water treatment works costs process type:-

Process Type	2008/09 £m	2007/08 £m	£m
SD : Simple Disinfection	2.378	1.895	(0.483)
W1 : SD plus simple physical or chemical treatment	0.733	0.276	(0.457)
W2 : Single stage complex physical or chemical treatment	10.061	5.341	(4.720)
W3 : Multiple stage complex treatment, excluding W4	25.786	31.178	+5.392
W4 : Very high cost treatment Process	6.077	6.581	+0.504
	45.035	**45.271**	**+0.236**

Changes to the numbers of WTW by process type have arisen as a result of operational changes and process re-classifications in WTW in 2008/09. Re-stating 2007/08 figures on like-for-like basis shows the following variations:-

Process Type	2008/09 £m	2007/08 £m	£m
SD : Simple Disinfection	2.378	1.901	(0.477)
W1 : SD plus simple physical or chemical treatment	0.733	0.608	(0.125)
W2 : Single stage complex physical or chemical treatment	10.061	9.915	(0.146)
W3 : Multiple stage complex treatment, excluding W4	25.786	26.682	+0.896
W4 : Very high cost treatment Process	6.077	6.165	+0.088
	45.035	**45.271**	**+0.236**

Movements in individual works explain the increases and decreases by category. Some of the larger movements are:

- Increase in Simple Disinfection due to misallocation source costs at Knowehead borehole and Newton of Lathrisk borehole in prior year £0.25m;
- Increase in W2 due to full year operation of new Milngavie works £0.4m offset by deceases due to abandoned works £0.1m;
- Decrease in W3 due to Balmore works reduced production £0.5m.

Analysis of water treatment works costs by size band:-

Size band	2008/09 £m	2007/08 £m	£m
<=1 Ml/d	6.430	6.231	(0.199)
>1 to <=2.5 Ml/d	2.216	2.451	+0.235
>2.5 to <=5 Ml/d	4.243	3.500	(0.743)
>5 to <=10 Ml/d	3.991	3.995	+0.004
>10 to <=25 Ml/d	8.302	8.572	+0.270
>25 to <=50 Ml/d	7.015	7.067	+0.052
>50 to <=100 Ml/d	5.203	5.969	+0.766
>100 to <=175 Ml/d	4.003	3.641	(0.362)
>175 Ml/d	3.632	3.845	+0.213
	45.035	**45.271**	**+0.236**

Movements in individual works explain the increases and decreases by size band. Some of the larger movements are:

- Increase in >2.5 to <=5 Ml/d band due to water supply problems at South Hoy works requiring significant tankering operations (including hire of ferry) £0.2m, and misallocation source costs at Knowehead borehole and Newton of Lathrisk borehole in prior year £0.25m;

- Decrease in >50 to <=100 Ml/d band due to better risk management of Glenfarg works and consequential reduction in pumping at River Earn RWPS £0.2m, and reduced operation at Invercannie works during upgrade £0.2m;
- Increase in >100 to <=175 Ml/d band due to additional sludge tankering because of sludge press problems at Carron Valley £0.25m;
- Increase in >175 Ml/d band due to full year operation of new Milngavie works £0.4m offset by reduced operation at Balmore works £0.5m.

Costs which are directly attributable to abstraction and treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, or Ellipse timesheets or work orders. Of the £45.0m (E1.10) total resource and treatment costs, £38.7m of costs or 85.9% (£41.8m less £3.1m 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 doing.

Confidence Grades – Confidence grades on Table E4 are consistent with grades in E1 and related commentary.

Direct costs are, in the main, 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.

E4.20-4.26 Water Treatment Works by Process Type

The number of water treatment works (WTW) reduced by 14 (4.5%) to 299; the total distribution input (DI) reduced by 127.5 Ml/d (5.6%) to 2143.7 Ml/d.

Changes to the number of WTW in use, the DI (Ml/d) and proportions (%) of total DI this year are broken down by WTW process type in the table below:

Process Type	2007/08			2008/09			Net Change		
	No.	*Ml/d*	*%*	*No.*	*Ml/d*	*%*	*No.*	*Ml/d*	*%*
Simple Disinfection	62	48.4	2.1	60	46.7	2.2	-2	-1.7	+0.1
W1	15	3.6	0.2	13	13.6	0.6	-2	+10	+0.4
W2	33	274	12.1	42	706.4	33	+9	+432.4	+20.9
W3	149	1,534.5	67.6	134	1,037.6	48.4	-15	-496.9	-19.2
W4	54	410.7	18.1	50	339.4	15.8	-4	-71.3	-2.3
Total	**313**	**2,271.2**		**299**	**2,143.7**		**-14**	**-127.5**	

The constituents of the 299 WTW reported in Table E4 line 25 with the 281 WTW reported in Table H2 lines 1-8 is detailed in the table below:

Total WTW reported in Table H2, excluding redundant and decommissioned	**281**
WTW closed during the year	+18
Total WTW reported in Table E4 line 25	**299**

Note: Table H reports operational status as at 31st March 2009, whereas Table E reports all WTW that provided water into supply at any time during the year.

Table E guidance has been adopted for completing Table H (and allocated all W4 assets into category SW3 or GW3 for Table H). Changes to the numbers of WTW by process type have arisen as a result of operational changes this year.

The confidence grade in the number of WTW remains at B2. The confidence grade for total DI has increased from C3 to B3 as a result of the work carried out for the water balance project. Please refer to A2.10 commentary.

E4.28-4.39 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 below table:

Size Band	2007/08		2008/09		Net Change	
	No.	%	No.	% (1)	No.	% (2)
<= 1 Ml/d	186	1.2	174	1.2	-12	0
>1, <= 2.5 Ml/d	25	1.3	25	1.3	0	0
>2.5, <= 5 Ml/d	30	3.2	30	3.3	0	+0.1
>5, <= 10 Ml/d	20	4.1	19	4.1	-1	0
>10, <= 25 Ml/d	23	11.3	23	11.4	0	+0.1
>25, <= 50 Ml/d	13	15.7	13	16.1	0	+0.4
>50, <= 100 Ml/d	9	22.6	9	22.1	0	-0.5
>100, <= 175 Ml/d	4	17.8	4	17.1	0	-0.7
>175 Ml/d	3	22.8	2	23.3	-1	+0.5
Total	**313**		**299**		**-14**	

Notes: (1) Does not tally to 100% due to rounding; (2) Does not balance due to aforementioned rounding.

Of the WTWs that were closed during the year, 2 were Glenconvinth WTW and Milngavie WTW, both of which were replaced with new WTW during 2007/08.

The confidence grade in the number of WTW remains at B2. The confidence grade for proportion of total DI remains at C3 which is unchanged from 2007/08.

Table E6 Water Distribution

E6.1-6.6 Area Data

E6.1 Annual average resident connected population

The annual average resident connected population increased by 23,102 (0.5%) to 5,001,656. This figure is consistent with the figure reported in A2.1.

Our methodology for allocating the population to the eight operational regions is the same as last year. We used population figures provided by the unitary authorities (UA) and projected GROS population estimates. Most UA are contained wholly within a single operational

region. Three UA areas (Argyll & Bute, Falkirk and Moray), however, are covered by more than one operational region. For these UA areas, we overlaid Ordnance Survey address points located within the UA boundaries on our operational region boundaries to assign address points to an operational region. Populations were then assigned to operational regions based on the split of address points.

The confidence grade remains at A2, reflecting the quality of data supplied for the WIC4 report.

E6.2 Total connected properties

The total number of connected properties increased by 57,662 (2.3%) to 2,561,653. This figure is consistent with the figure reported in Table A1 line 10.

Please refer to the commentary for Table A1 line 9 for details of the changes to the number of connected properties.

For unmeasured household properties, we used the methodology described in the commentary for Table E6 line 1 to allocate households from unitary authorities to the eight operational regions. For all other property types, data from the corporate system (Wholesale datamart), which lists all supply points related to the retail market, was allocated a spatial reference and then assigned to operational regions.

The confidence grade is now B2 in line with A1.10.

E6.3 Volume of water delivered to households

The volume of water delivered to households increased by 19 Ml/d (2.2%) to 882.5 Ml/d. This figure is consistent with the sum of the figures reported in Table A2 lines 12 and 13.

The confidence grade has increased from C4 to B2 as a result of the use of our Per Capita Consumption (PCC) monitor.

E6.4 Volume of water delivered to non-households

The volume of water reported as delivered to non-households decreased by 63.0 Ml/d (11.9%) to 466.1 Ml/d. This figure is consistent with the sum of the figures reported in Table A2 lines 14 and 15.

Our methodology for regional allocation of the volume of water delivered to measured non-household properties is the same as last year.

As the measured non-household data has been sourced from our Wholesale system, the data has been spatially referenced to postcode level by mapping the corporate address point file to the addresses held. Postcode boundaries together with water operational area boundaries taken from the corporate GIS enabled the derivation of the number and associated water volumes delivered to non-household properties.

The volume of water delivered to unmeasured non-household properties was allocated to the eight operational regions by taking the volume reported in Table A2 line 15 and assigning that volume in the same proportions as last year's unmeasured volumes.

Please refer to the commentaries for Table A2 lines 14 and 15 for details of the changes we have made to our methodology for deriving the consumption of unmeasured non-domestic properties.

The confidence grade has decreased from A3 to B4 as a result of the change in the confidence grades reported in Table A2 lines 14 and 15.

E6.5 Area

The area remains the same at 79,761km^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 15 (4.4%) to 329.

This year, a process of review led to adjustments of the water supply arrangements, which brought about a rationalisation of the Water Quality Regulation Zones. This drop in the number of zones continues the declining trend, which started in 2003/04 when 394 zones were reported.

This year rationalisation was mainly concentrated in the North West (Ness operational region) and south (Nith operational region) of the country.

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

Overall movements are explained in table Water Distribution E1.10 earlier in this commentary.

Water distribution costs are analysed by region:-

Water Distribution	**Ness**	**Don**	**Forth**	**Tay**	**Ayr**	**Clyde**	**Nith**	**Tweed**	**TOTAL**
Functional Cost	£m	£m	£m	£m	£m	£m	£m	£m	£m
2008/09	6.777	8.781	7.006	7.681	6.561	7.369	10.877	9.419	**64.471**
2007/08	5.517	6.556	4.820	6.082	4.307	6.025	7.334	5.933	**46.574**
	(1.260)	**(2.225)**	**(2.186)**	**(1.599)**	**(2.254)**	**(1.344)**	**(3.543)**	**(3.486)**	**(17.897)**

Some of the larger (power) movements are:

- Reclassification of Gowanbank from Forth region £0.2m to Tweed Region £0.2m so that power costs and pumping head are aligned;
- Reduced pumping required from Balmore works £0.3m due to operation of new Milngavie works.

Confidence Grades – Confidence grades on Table E6 are consistent with grades in E1 and related commentary.

Direct costs are, in the main, 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.

E6.12-6.21 Water Main Data

E6.12-6.16 Potable mains

There were no significant changes in the figures of Bands 1-4 or total length of mains.

The assessment is based on our GIS inventory, which is derived from Table H3 line 4. The inventory is reported from our corporate GIS, where the diameter field is populated to 99.3% leaving only 335km of mains not populated with diameter. The default value used to infill is DN150, falling into Band 1, which is the largest band.

Bands coincide with nominal size bands for newer materials, which are based on external diameter and coincide with Table H3 size bands.

The confidence grade remains at B2.

E6.17 Total length of unlined iron mains

The total length of unlined iron mains decreased by 207.1km (1.5%) to 13,905km.

Progress on our GIS register this year has led to a reduction of 18km in the Q&SI backlog assessment, resulting in a 9km adjustment. This fall is expected to continue as the Q&SIIIa programme comes to completion.

The report relies on population of the material and lining attributes in the inventory.

206.7km of GIS potable main was populated by the Infill material model and is defaulted to unlined spun iron, constituting less than 1.5% of reported value. Off inventory adjustment is less than 1.2%.

The information available for pipe lining is not fully complete, with 40% of ferrous inventory having null or unknown lining attribute. GIS lining attribute signified as bitumen and unknown is included as unlined iron main. Ductile iron is the assumed cement lining where the lining material is unknown and totals 1,851km.

The confidence grade remains at B2.

E6.18 Total length of mains >300mm diameter

The total length of mains greater than 300mm diameter decreased by 0.3km (<0.1%) to 3821.7km.

The assessment is based on our GIS inventory, which is derived from Table H3 line 4. The inventory is reported from our corporate GIS, where the diameter field is populated to 99.3% leaving only 335km of mains not populated with diameter. As the default value used to infill is DN150, with no adjustment for statistical spread, the length of mains greater than 300mm diameter may be marginally under-reported.

This size band coincides with Table H.

The confidence grade remains at B2.

E6.19 Water mains bursts

The number of water mains bursts increased by 1,671 (21%) to 9,629.

Changes in the number of bursts across the eight operational regions are detailed in the table below:

Operational Region	2007/08	2008/09	Net Change
Ness	1,071	1,087	+16
Don	652	755	+103
Forth	767	1,077	+310
Tay	821	802	-19
Ayr	1,051	1,394	+343
Clyde	1,154	1,563	+409
Nith	1,673	1,885	+212
Tweed	769	1,066	+297
Total	**7,958**	**9,629**	**+1,671**

A decreasing trend in the number of reported bursts had been experienced over recent years, however this year saw a 7% increase. The increasing trend in unreported bursts continued this year, with a 121% increase, primarily through greater ALC activity to address leakage.

It is anticipated that the overall trend of an increase in the number of bursts will continue due to the ongoing activities to address leakage and improving data collection.

The confidence grade remains at B3.

E6.20 Leakage level

The reported leakage level decreased by 54.9 Ml/d (5.9%) to 869.1 Ml/d. This figure includes an allowance for field troughs, which is not included in the figure reported in Table A2 line 30.

Changes in leakage level across the eight operational regions are detailed in the table below:

Operational Region	2007/08	2008/09	Net Change
	Ml/d		
Ness	48.57	51.18	+2.61
Don	55.87	55.65	-0.22
Forth	101.06	117.88	+16.82
Tay	77.49	74.67	-2.82
Ayr	170.85	150.19	-20.66
Clyde	175.58	188.91	+13.33
Nith	174.66	143.97	-30.69
Tweed	119.94	86.64	-33.30
Total	**924.01**	**869.09**	**-54.93**

Please refer to the water balance section of the A Table commentaries for a description of these changes.

The confidence grade has increased from C3 to B3 as a result of the work carried out for the water balance project.

E6.21 Properties reported for low pressure

The number of properties reported for low pressure decreased by 2,933 (49.7%) to 2,974.

Changes in the numbers of properties reported for low pressure across the eight operational regions are detailed in the table below:

Operational Region	2007/08	2008/09	Net Change
Ness	539	361	-178
Don	2,210	1,052	-1,158
Forth	291	219	-72
Tay	1,175	510	-665
Ayr	299	76	-223
Clyde	400	157	-243
Nith	691	282	-409
Tweed	302	317	+15
Total	**5,907**	**2,974**	**-2,933**

This reduction has primarily been achieved through operational and asset improvements that were introduced throughout the year.

Please refer to the commentary for Table B2 for further detail.

The confidence grade remains at B3.

E6.22-25 Pumping Stations

E6.22 Total number of pumping stations

The total number of pumping stations increased by 12 (2.3%) to 532. This increase is as a result of site surveys, changes to the method of supply and the GIS harmonisation project. The table below shows the change in the number of stations recorded in the corporate asset inventory as being operational during this year:

2007/08 No. of pumping stations	*520*
Stations removed	9
Stations added	21
2008/09 No. of pumping stations	**532**

The confidence grade remains at B2.

E6.23 Total capacity of pumping stations

The total capacity of pumping stations decreased by 1,071,483 m^3/d (54.3%) to 901,811 m^3/d.

This reduction in reported capacity is due to the removal of 9 stations (accounting for 672,509 m^3/d), the data held in the corporate system and the methodology used to estimate the design capacity where it is not recorded in the corporate system.

Our corporate system holds the design capacity (in m^3/d) for only 170 stations, however for 29 of these the recorded design capacity is less than the actual average flow so the latter is used instead. It is suspected that a number of recorded design capacities have been assigned the wrong units, being Ml/d rather than m^3/d. The remaining 362 stations have their design capacity estimated, based on the average of stations with design capacities, and since the recorded design capacity is lower then the values used to fill the gap are lower.

The breakdown of design capacity figures (in m^3/d) are detailed in the below table:

	2007/08		2008/09	
	Design Capacity	**No. of Stations**	**Design Capacity**	**No. of Stations**
Recorded in corporate system	807,926	176	135,881	170
Assumed design capacity where the average flow is greater than recorded design capacity	759,916	*54	745,102	*29
Replaced design capacity	-125,455		-83,382	
Estimated design capacity for sites not recorded	530,907	344	104,210	362
Total	**1,973,294**	**520**	**901,811**	**532**

*The number of stations are included in the line above.

The figures used to estimate design capacity (in m^3/d) where none was recorded are detailed in the below table:

Table H Size Band (based on kW)	Design Capacity		No. of Stations	
	2007/08	**2008/09**	**2007/08**	**2008/09**
0	340	291	44	59
1	106	202	98	100
2	4,470	285	104	104
3	741	933	69	71
4	2,004	2,165	19	18
5	41,334	38,879	10	10
Total			**344**	**362**

The confidence grade has decreased from C3 to C4, reflecting the level of extrapolation used to derive the figure.

E6.24 Total capacity of booster pumping stations

The total capacity of booster pumping stations decreased by 1090.4 kw (3.5%) to 29,835.3 kW.

Our methodology for determining the design capacity (in kW) of stations is the same as last year. The reduction is a result of the change in assets over the two years. Site surveys have had an impact on the coverage of known capacities.

The confidence grade remains at C3 which is unchanged from 2007/08.

E6.25 Average pumping head

The average pumping head increased by 0.88m (3.1%) to 29.72m. This rise is due to the following:

- Changes in the flow and lift data gathered this year
- Change in the number of pumping stations
- Changes to the electricity consumption at pumping stations

The calculation of average pumping head utilises flow and lift data collected from site surveys and/or measured values for this year. This represents 84% of the total data set,

which includes flow, lift and power output. There has been no change to the methodology used to fill gaps in data.

We have used the work done last year on site surveys and measured data, which demonstrated the strong correlation between Work Done (i.e. pumping x distribution input) and the electricity consumed at pumping stations. We have therefore used, with reasonable confidence, the electricity consumption to estimate pumping head at the stations where we currently have no measured lift or flow.

No inter-stage pumping has been included in the calculation of the figure in this line.

The confidence grade remains at C3, reflecting the confidence grade of the distribution input and the level of estimation.

E6.26-27 Service Reservoirs

The total number of service reservoirs decreased by 18 (1.2%) to 1,445. Although, on balance, there are fewer service reservoirs this year, 5 new service reservoirs were commissioned and 6 service reservoirs were re-commissioned during the year.

The total capacity of service reservoirs increased by 159.8 Ml (4.4%) to 3797.9 Ml.

The confidence grade remains at B2.

E6.28-29 Water Towers

The total number of water towers decreased by 1 (4%) to 24.

This reduction was due to the closure of one tower. This had only a minor effect on the total capacity of water towers, which decreased by 0.1 Ml (0.3%) to 39.56 Ml.

The confidence grades remain at B2.

Table E7 Wastewater Explanatory Factors – Sewerage & Sewage Treatment by Area

E7.1-7.7 Area Data

E7.1 Annual average resident connected population

The annual average resident connected population increased by 18,071 (0.4%) to 4,726,750.

The confidence grade remains at B2 which is unchanged from 2007/08.

E7.2 Annual average non-resident connected population

The annual average non-resident connected population increased by 6,111 (6.2%) to 104,224.

Tourist population this year has been determined on the basis of average bed spaces multiplied by a monthly occupancy factor as for 2007/08.

Improvements have been made to the sewered areas held in our corporate GIS. Updated sewered areas, which cover a larger part of the country, were used in determining whether a

tourist type of property was connected to the wastewater network. The updated boundaries led to an increase in the number of tourist properties that were assumed to be connected.

The confidence grade remains at C4 which is unchanged from 2007/08.

E7.3 Volume of sewage collected (daily average)

The daily average volume of sewage collected decreased by 1171.7 Ml/d (25.6%) to 3409.4 Ml/d. This reduction was as a result of the following:

- Ongoing review of the boundaries held within our corporate GIS, to determine the storm flow component of the volume of sewage generated
- Less rainfall during the year
- Use of a larger set of flow survey data, to determine the dry weather flow component, which resulted in a drop of the per capita contribution from 0.62 m^3/h/day to 0.39 m^3/h/day

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 which is unchanged from 2007/08.

E7.4 Total connected properties

The total number of connected properties figure increased by 40,592 (1.7%) to 2,434,132.

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

The confidence grade remains at B2 which is unchanged from 2007/08.

E7.5 Area of sewerage district

The area of sewerage district remains the same at 79,761km^2.

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

E7.6 Drained area

The drained area increased by 98km^2 (5.1%) to 2,017km^2. This rise is as a result of a reassessment of the sewered areas. An ongoing project has meant that approximately half of the sewered areas are now recorded on our corporate GIS. The remainder of the sewered areas are due to be recorded by late summer 2009.

The confidence grade remains at B2 which is unchanged from 2007/08.

E7.7 Annual precipitation

Precipitation decreased by 173mm (10.5%) to 1,476mm.

During the reporting year we experienced less rainfall than the previous year. There were some notable periods of low rainfall, with the former Highland River Protection Board area receiving 24% of the long term average rainfall in May 2008.

The confidence grade remains at B3 which is unchanged from 2007/08.

E7.8-7.14 Sewerage Data

E7.8 Total length of sewer

The total length of sewer increased by 376km (0.8%) to 50,139km. This rise is comprised of: 238km of main sewer; 91km of lateral sewer; 47km of rising main.

The assessment of IFOC investigation data continues to add main sewers and lateral sewers onto our GIS inventory.

New data on customer type has refined the lateral sewer calculation, reducing the rise in inventory from the increase in number of properties connected to the wastewater network.

The information comes from Table H4 reporting. It comprises our GIS inventory (32,736km), an off-inventory addition of missing sewers (1,000km) and a statistical calculation of lateral sewer length from unit length connections by dwelling (16,403km).

This figure is carried to Table B8 for sewer and choke incidence, Table D6 as part of the sewer asset balance.

The confidence grade is C4 which is consistent with H1.6.

E7.9 Total length of lateral sewer

The total length of lateral sewer has increased by 91km (0.6%) to 16,403km. 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.

The number of connected properties reported has increased by 1.7%, leading to the resultant change in the calculated asset stock. This rise has been moderated by utilising the billed customer flag as developed by the Wholesale Revenue team.

Unit lengths of lateral sewer are derived from a 2004 survey and checked for validity in 2006 by a GIS desktop study. Billing information on the domestic / commercial split has resulted in the adjustment of the ratio of properties allocated a particular unit lateral length. 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.

As the figures are derived from estimates of connected properties from Unitary Authority records, the confidence grade remains C4.

E7.10 Length of combined sewer

The length of combined sewer increased by 47km (0.3%) to 17,391km.

The IFOC investigations resulted in the addition of surveyed sewer data to the GIS inventory this year, some of which is legacy data associated with combined sewers. The input of backlog Drainage Area Study record data began in February 2008 and is ongoing.

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. As the off-inventory estimate is based on development backlogs of the 1960's, no off-inventory allowance is made for combined sewers.

The confidence grade remains at B2.

E7.11 Length of separate storm sewer

The length of separate storm sewer increased by 92km (1.1%) to 8,218km. The update of development inventory onto the asset stock has increased the reported figure. This rise is in line with gradual growth of inventory before the backlog programmes, suggesting a reversion to a natural rise in inventory from development.

The figure is derived from a record inventory with known gaps in asset stock, however sewer usage is populated to high levels. A 500km off-inventory adjustment is included in the reported figure from the off-inventory figure.

The confidence grade remains at B2.

E7.12 Length of sewer >1000mm diameter

The length of sewer greater than 1000mm diameter increased by 21km (2.6%) to 830km. Continuing asset record activity is resulting in a consistent rise in this figure.

The figure is derived from a record inventory with known gaps in asset size attribute. Infill rule bases or missing inventory adjustments do not influence this size band.

The confidence grade remains at B2.

E7.13 Length of critical sewer

The length of critical sewer increased by 46km (0.4%) to 11,502km. This rise is as a result of improved depth attribute data from loading legacy Drainage Area Study record data and a natural rise from development.

The figure is derived from Table H4 analysis of a record inventory with known gaps in asset stock. An off-inventory adjustment of 50km is included in the reported figure.

The classification of critical sewers uses the WRc methodology for asset size, material, depth and proximity to particular features. A revised proximity analysis was deferred until missing inventory is present to maximise value from the analysis.

The confidence grade remains at B3.

E7.14 Sewer collapses

The number of sewer collapses increased by 839 (35.4%) to 3,212.

Changes in the number of collapses across the eight operational regions are detailed in the table below:

Operational Region	2007/08	2008/09	Net Change
Ness	138	396	+258
Don	139	352	+213
Forth	320	255	-65
Tay	227	896	+669
Ayr	382	256	-126
Clyde	212	162	-50
Nith	558	533	-25
Tweed	397	362	-35
Total	**2,373**	**3,212**	**+839**

The number of collapses that occurred in the period from 2006 to 2008 was in the region of 2,400 to 2,700, however this year saw a significant rise in the reported figure. An increase in the number of repairs undertaken may account for a proportion of the rise.

Sewer collapses with indistinct location have risen to 200 (6.2%) and are allocated by proportion as previously. This increase is as a result of the introduction of a new process to record collapses on sewer laterals which still requires some additional user training.

The confidence grade remains at A2.

E7.15-7.23 Pumping Stations

E7.15 Total number of pumping stations

The total number of pumping stations increased by 72 (3.8%) to 1,968.

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.

Changes in the number of pumping stations recorded in the corporate asset inventory as being operational during the year are detailed in the below table:

2007/08 No. of pumping stations	*1,896*
Decommissioned	10
Additions	82
2008/09 No. of pumping stations	**1,968**

The confidence grade remains at B3 which is unchanged from 2007/08.

E7.16 Total capacity of pumping stations (m^3/d)

The total capacity of pumping stations decreased by 20,196 m^3/d (0.2%) to 12,089,035 m^3/d.

This figure is based on extrapolation from the 19% of stations that 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.

E7.16a Total capacity of pumping stations (kW)

The total capacity of pumping stations increased by 218 kW (0.3%) to 74,421 kW.

Our methodology for determining the design capacity (in kW) of stations is the same as last year. This year 237 (12%) of the stations did not have a recorded kW rating.

The confidence grade remains at C4.

E7.17 Average pumping head

The average pumping head increased by 8m (41.5%) to 27.3m. The dynamic pumping head (i.e. includes friction loss) has been reported, in line with the definition provided by the Commission.

This rise is due to the following changes:

- A reduction in the value of flow used as the denominator in the pumping head calculation
- A 6% increase in the power used at pumping stations, which has been directly related to an increase in work done (flow x lift)

The calculation of average pumping head utilises the total volume of sewage collected as the denominator of the pumping head formula.

The confidence grade remains at C4, reflecting the level of confidence in the data collected, the volume of data collected and the fact that the denominator in the formula is the volume of sewage collected, which has a confidence grade of C4.

E7.18 Total number of combined pumping stations

The total number of combined pumping stations remains the same at 1,065.

Changes in the number of stations recorded in the corporate asset inventory as being operational during the year are detailed in the table below:

2007/08 No. of combined pumping stations	*1,065*
Decommissioned	3
Additions	3
2008/09 No. of combined pumping stations	**1,065**

The confidence grade remains at B3 which is unchanged from 2007/08.

E7.19 Total capacity of combined pumping stations

The total capacity of combined pumping stations increased by 2,581 m^3/d (<0.1%) to 8,413,367 m^3/d.

This rise is due to the change in the corporate asset inventory (Ellipse) and changes to the size bands (based on kW) where the design capacity (in m^3/d) has not been recorded. The three decommissioned stations had a cumulative design capacity of 2,297 m^3/d and the three added stations have a cumulative design capacity of 4,624 m^3/d.

Our methodology for determining the design capacity of stations is the same as last year. This year, 23% of the combined pumping stations had their design capacities recorded in Ellipse.

The confidence grade remains at C4 which is unchanged from 2007/08.

E7.20 Total number of stormwater pumping stations

The total number of stormwater pumping stations remains at 38.

Our methodology for determining the number of stations is the same as last year. The figure is based on the number of stations recorded in the corporate asset inventory (Ellipse) as being operational during the year. Ellipse shows there was no change in these stations.

The confidence grade remains at B3 which is unchanged from 2007/08.

E7.21 Total capacity of stormwater pumping stations

The total capacity of stormwater pumping stations increased by 6 m^3/d (<0.1%) to 547,907 m^3/d.

Our methodology for determining the design capacity of stations is the same as last year and the confidence grade remains at C4 which is unchanged from 2007/08. This year 29% of the stormwater pumping stations had their design capacities recorded in the corporate asset inventory.

E7.22 Number of combined sewer overflows

The number of combined sewer overflows (CSOs) decreased by 159 (4.5%) to 3,343.

Work on unsatisfactory intermittent discharge initiatives continued this year, leading to many assets, which had previously been incorrectly recorded as CSOs, being reclassified as bifurcation chambers (i.e. sewer to sewer overflows). This has led to a drop in inventory reported in Table H4 line 4 and, in turn, Table E7.

This is a consistently improving inventory record, though the confidence grade remains at A3.

E7.23 Number of combined sewer overflows (screened)

The number of combined sewer overflows (CSOs) with screening in place increased by 10 (1.4%) to 706. Screened CSOs constitute 21.1% of the total number of CSOs reported in line 22 above.

The confidence grade remains at A3 which is unchanged from 2007/08.

E7.24-7.25 Sewage Treatment Works

E7.24 Number of sewage treatment works

The number of sewage treatment works (STW) increased by 60 (3.2%) to 1,935. This rise is due to the discovery that unscreened sea outfalls had been inadvertently omitted from the reported figure last year.

There is a general decreasing trend in the number of STW (from 1,963 reported in 2006/07), which is a reflection of the investment in STWs during our current investment period.

The confidence grade remains at B3 which is unchanged from 2007/08.

E7.25 Total load

The total load decreased by 2,868 kg BOD/day (1.2%) to 230,870 kg BOD/day. This reduction reflects the net change in the constituent components of the works loads and corresponds to a reduction in the sludge production seen in Table E10 line 2.

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 STW sludge
- Imported WTW sludge
- Sludge return liquors

Population (68.46% of total load)
The population load decreased by 278 kg BOD/day (0.2%). Some of the changes to individual STW will be down to the ongoing work to improve the sewered areas, which will have more of an effect on the smaller STW. In the past these STW would be more likely to not have had a sewered area and an assessment of the population would have been undertaken. We now have sewered areas for all of the STW (half from our corporate GIS and the rest created as part of the Annual Return process), which has led to an improvement in the population attribution this year. The reduction in population load is due to STW, in general, having more accurate populations attributed to them.

Tourist (1.80% of total load)
The tourist load increased by 197 kg BOD/day (5.0%). This change is due to the ongoing sewered areas work leading to more tourist properties being included as well as the general downturn in the economy leading to more UK residents choosing to holiday in Scotland rather than travel abroad.

Non-domestic load (9.46% of total load)
The non-domestic load decreased by 4,648 kg BOD/day (17.6%). This reduction is a reflection of the general downturn in the economy and the ongoing sewered area work leading to more non-domestic properties being located in the correct catchment.

Trade effluent (17.27% of total load)
The trade effluent load decreased by 784 kg BOD/day (1.9%). 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. The changes to trade effluent are more fully covered in the commentary for the P Tables.

Imported private septic tanks (0.19% of total load)
The imported private septic tanks load increased by 147 kg BOD/day (52.5%). This rise is due to improvements we have made to our septic tank emptying process and the introduction of IMS devices part way through the year. With less manual processing of information it is likely that a more accurate figure has been used this year.

Imported public septic tanks (0.09% of total load)
The imported public septic tanks load decreased by 93.6 kg BOD/day (30.6%). This reduction is attributable to a combination of decreasing de-sludge frequencies, an effort to reduce tankered sludge volumes and greater volumes being discharged direct to sludge treatment centres.

Imported other loads (0.14% of total load)
The imported other load decreased by 41.4 kg BOD/day (11.7%). This reduction is a reflection of the general downturn in the economy.

Imported STW sludge (1.68% of total load)
The imported STW sludge load increased by 987 kg BOD/day (34.1%). We now track all sludge movements electronically in our Gemini system. This has led to a more accurate figure being used this year.

Imported WTW sludge (0.77% of total load)
The imported WTW sludge load increased by 1,624 kg BOD/day (1040%). A reassessment of the WTW sludge imports had led to a large increase in the amount of sludge imported to Shieldhall STW.

Sludge return liquors (0.14% of total load)
The sludge return liquor load increased by 21 kg BOD/day (6.8%). This is consistent with the increase in volume being discharged to sludge treatment centres.
The confidence grade remains at B3 which is unchanged from 2007/08.

Table E8 Wastewater Explanatory Factors – Sewage Treatment Works

E8.1-10 Numbers

E8.1-8.8 Sewage treatment works size bands

The total number of sewage treatment works (STW) decreased by 34 (1.7%) to 1,935. Changes to the number of STW this year are broken down by size band and treatment category in the tables below:

Size Band	2007/08	2008/09	Net Change
0	1,195	1,165	-30
1	256	239	-17
2	127	157	+30
3	197	191	-6
4	131	126	-5
5	41	33	-8
6	22	24	+2

Treatment Category	2007/08	2008/09	Net Change
Septic Tanks	1,220	1,206	-14
Primary	63	64	+1
Sec Activated Sludge	185	183	-2
Sec Biological	287	292	+5
Tertiary A1	21	21	0
Tertiary A2	8	8	0
Tertiary B1	49	49	0
Tertiary B2	14	14	0
Sea Preliminary	16	10	-6
Sea Screened	10	8	-2
Sea Unscreened	96	80	-16

The spread of STW in different size bands has changed, reflecting the ongoing work to create sewered areas for all STW, leading to more accurate load estimates being prepared.

The reduction in the number of septic tanks is as a result of investment in the current period, which has led to rationalisation of some small septic tanks.

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 remains at 56 and 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 increased by 1 (2.1%) to 48. The confidence grade remains at A1.

E8.11-8.20 Loading (average daily load)

E8.11-8.18

The total average daily load, excluding septic tanks, decreased by 1,440 kg BOD/day (0.6%) to 225,103 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	2007/08	2008/09	Net Change
	Excluding septic tanks		
0	369	579	+210
1	1,124	1,268	+144
2	1,699	2,367	+668
3	10,279	11,374	+1,095
4	37,340	37,245	-95
5	36,409	28,794	-7,615
6	139,323	143,476	+4,153

Treatment Category	2007/08	2008/09	Net Change
Septic Tanks	7,191	5,771	-1420
Primary	6,451	6,377	-74
Sec Activated Sludge	154,749	154,712	-37
Sec Biological	25,163	25,941	+778
Tertiary A1	21,252	20,735	-517
Tertiary A2	1,925	1,676	-249
Tertiary B1	5,903	5,876	-27
Tertiary B2	1,123	1,011	-112
Sea Preliminary	5,080	1,351	-3,729
Sea Screened	2,927	1,719	-1,208
Sea Unscreened	1,970	5,705	+3,734

These changes are primarily a result of the ongoing work to create sewered areas for all STW, leading to more accurate load estimates being prepared. The decline in the total average daily load at Sea Preliminary STW has also been significantly affected by the reduction in the number of this type of STW.

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 683 kg BOD/day (8.3%) to 8,903 kg BOD/day.

In general, the ongoing work to create sewered areas for all STW has had a greater effect on the smaller STW. These STW were previously less likely to have defined sewered areas, which led to the total average daily load being underestimated for some of these STW.

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 533 kg BOD/day (5.3%) to 10,669 kg BOD/day

In general, the ongoing work to create sewered areas for all STW has had a greater effect on the smaller STW. These STW were previously less likely to have defined sewered areas, which led to the total average daily load being underestimated for some of these STW.

The confidence grade remains at B3.

E8.21-8.30 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. STW 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 2008/09.

Where the cells in this section are listed as 0 and AX confidence grade, this means that no STW in that treatment category and size band have been sampled.

E8.21-8.28

The average compliance has been maintained or improved at all STW treatment categories with the exception of Sea Preliminary.

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 that underwent sampling this year, with the exception of Tertiary B1 STW.

The confidence grade remains at B2.

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 that underwent sampling this year.

The confidence grade remains at B2.

E8.31-42 Costs

Overall movements are explained in table Sewage Treatment E2.9 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:-

	Septic tanks	Primary	Secondary	Tertiary	Sea Outfalls	Total
Small treatment works	£m	£m	£m	£m	£m	£m
2008/09	2.269	1.548	18.049	3.940	0.498	**26.304**
2007/08	2.708	1.356	17.803	3.879	0.676	**26.422**
	+0.439	**(0.192)**	**(0.246)**	**(0.061)**	**+0.178**	**+0.118**

	Septic tanks	Primary	Secondary	Tertiary	Sea Outfalls	Total
Large treatment works	£m	£m	£m	£m	£m	£m
2008/09	0.000	0.000	9.063	0.892	0.045	**10.000**
2007/08	0.000	0.000	9.218	0.843	0.159	**10.220**
	+0.000	**+0.000**	**+0.155**	**(0.049)**	**+0.114**	**+0.220**

	Septic tanks	Primary	Secondary	Tertiary	Sea Outfalls	Total
Total treatment works	£m	£m	£m	£m	£m	£m
2008/09	2.269	1.548	27.112	4.832	0.543	**36.304**
2007/08	2.708	1.356	27.021	4.722	0.835	**36.642**
	+0.439	**(0.192)**	**(0.091)**	**(0.110)**	**+0.292**	**+0.338**

Movements in individual works and switches between process types explain the increases and decreases by category. Movements which do not follow the profile of the overall movements are explained as follows:

- Galashiels has moved from small tertiary to large tertiary £0.2m;
- Iron Mill Bay has moved from small secondary to large secondary £0.1m;
- West Barns large sea outfall £0.1m has been replaced by Dunbar large secondary £0.2m;

Costs which are directly attributable to treatment are charged to the specific asset cost code in Peoplesoft, either via direct charging, or Ellipse timesheets or work orders. Of the £36.3m (E2.9) total wastewater treatment costs, £34.8m of costs or 95.9% (£39.0m less £5.9m sludge costs plus £1.7m 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 – Confidence grades on Table E8 are consistent with grades in E2 and related commentary.

Direct costs are, in the main, 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

E9.0-9.1 Works Size

E9.0a Name of operational area

The number of large non-PPP STW has increased by 2 (9.5%) to 23

This number has changed primarily due to the ongoing work to create sewered areas for all STW and changes to the load components. West Barns STW has been replaced by a new STW, Dunbar, and the STW at Galashiels and Iron Mill Bay now meet the large STW classification.

For operational reasons, Bo'ness, Daldowie and Kinneil Kerse STWs are now reported in the Tweed, Nith and Tweed Regions respectively.

Large STW 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 decreased by 16,621 (0.7%) to 2,322,239.

Changes to the population equivalent of each large STW are detailed in the below table:

STW	2007/08	2008/09	Net Change
Allers	56,643	49,376	-7,267
Alloa	41,838	41,031	-807
Ardoch	70,063	71,262	+1,199
Bo'Ness	26,453	27,443	+990
Carbarns	46,865	47,012	+147
Dalderse	97,414	91,922	-5,492
Daldowie	281,871	278,596	-3,275
Dalmarnock	307,616	296,162	-11,454
Dunbar	30,475	26,951	-3,524
Dunfermline	87,071	37,163	-49,908
Dunnswood	33,302	30,723	-2,579
Erskine	81,061	75,285	-5,776
Galashiels	25,088	26,534	+1,446
Hamilton	66,501	62,109	-4,392
Iron Mill Bay	19,112	42,418	+23,306
Kinneil Kerse	43,095	48,528	+5,433
Kirkcaldy	60,315	62,019	+1,704
Laighpark (Paisley)	186,274	214,347	+28,073
Perth	101,520	98,371	-3,149
Philipshill	63,762	60,490	-3,272
Shieldhall	490,313	513,949	+23,636
Stirling	74,481	72,222	-2,259
Troqueer	47,727	48,326	+599
Total	**2,338,860**	**2,322,239**	**-16,623**

The large change at Dunfermline and Iron Mill Bay STWs are due to the ongoing changes in the sewered areas. This has led to population being re-assigned from Dunfermline to Iron

Mill Bay. We intend to have the sewered areas complete in our corporate GIS by late summer 2009. As part of the QA process for these objects, Asset Planners will be asked to confirm that the objects are correct.

The change at Laighpark (Paisley) STW is due to a large increase in the trade effluent arriving at this STW. As was stated earlier in the commentary, we now receive this data from the Central Market Agency.

The change at Shieldhall is due to operational reasons whereby WTW sludge has been re-directed to the inlet at Shieldhall works.

The confidence grade remains at B3.

E9.2-7 Compliance

Consent data was taken from our corporate consents database. The most onerous of CAR or UWWT parameter was reported. Last year we inadvertently reported only the CAR consents for a number of the STW.

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

E9.2 Suspended solids content

The consents standards for Bo'ness and Kirkcaldy STWs were incorrectly reported last year.

All consents standards remained the same.

E9.3 BOD consent

The CAR consents were reported for the below works last year:
- Alloa; Ardoch; Bo'ness; Dunfermline; Erskine; Kinneil Kerse; Kirkcaldy; Perth; Stirling;

All other STW consents standards remained the same.

E9.4 COD consent

There have been no changes to the COD consent standards.

E9.5 Ammonia consent

There have been no changes to the ammonia consent standards.

E9.6 Phosphate consent

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

E9.7 Compliance with effluent consent standard

Allers, Carbarns, Daldowie, Hamilton, Laighpark (Paisley), Perth and Stirling STWs marginally increased their compliance.

Compliance at Ardoch and Dunnswood STWs show a marginal decrease.

Sample results for Dalderse were unavailable last year.

E9.8-9.14 Treatment Works Category

This information is held in the corporate asset inventory. We are reporting 23 large STWs in Table E9, though 24 large STW are reported in Table E8 line 7. The STW that is reported in Table E8 line 7, but not in Table E9, is the Meadowhead outfall, which takes a trade effluent flow from a pharmaceuticals company factory.

E9.15-19 Works cost

Analysis of functional costs for large sewage treatment works:-

	2008/09	2007/08	Variance
	£m	£m	£m
Daldowie	0.741	0.843	+0.102
Galashiels	0.151	n/a	(0.151)
Tertiary treatment	**0.892**	**0.843**	**(0.049)**
Allers	0.259	0.255	(0.004)
Alloa	0.299	0.288	(0.011)
Ardoch	0.494	0.427	(0.067)
Bo'ness	0.199	0.176	(0.023)
Carbarns	0.302	0.271	(0.031)
Dalderse	0.419	0.501	+0.082
Dalmarnock	0.881	0.885	+0.004
Dunbar	0.230	n/a	(0.230)
Dunfermline	0.167	0.159	(0.008)
Dunnswood	0.332	0.235	(0.097)
Erskine	0.358	0.366	+0.008
Hamilton	0.478	0.470	(0.008)
Iron Mill Bay	0.136	n/a	(0.136)
Kinneil Kerse	0.322	0.392	+0.070
Kirkcaldy	0.384	0.471	+0.087
Laighpark (Paisley)	0.753	0.748	(0.005)
Perth	0.201	0.251	+0.050
Philipshill	0.362	0.240	(0.122)
Shieldhall	1.892	2.351	+0.459
Stirling	0.403	0.527	+0.124
Troqueer	0.192	0.205	+0.013
Secondary treatment	**9.063**	**9.218**	**+0.155**
West Barns	n/a	0.125	+0.125
Preliminary treatment	**n/a**	**0.125**	**+0.125**
Total large treatment works	**9.955**	**10.186**	**+0.231**

The number of treatment plants classified as large works has increased since 2007/08, with Galashiels and Iron Mill Bay all being classified from small to large. West Barns has been replaced by new Dunbar works.

- Decrease in Shieldhall works due to re-banding of SEPA consent and decrease in works power, including an increased to sludge for the pipeline transfer to Daldowie PPP works £0.5m.

Confidence Grades – Confidence grades on Table E9 are consistent with grades in E2 & 8 and related commentary.

Direct costs are, in the main, 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. 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 Sludge Treatment and Disposal

Scottish Water incurs costs associated with the transportation of sludge from its own sewage treatment works to PPP sludge treatment centres (£2.8m). These costs have been reported within E3a.20 with the corresponding sludge loads in reported in E3.

E10.1-10.2 Sludge Volumes

E10.1 Resident population served

The total resident population served decreased by 80,125 (3%) to 2,587,679. This change is primarily due to the work undertaken on creating sewered areas on our corporate GIS rather than any movement of the population. The work to create sewered areas, which underpins this line, is ongoing with approximately half of our STWs having had their catchment boundaries defined with the remaining STWs expected to be completed by late summer 2009. The population numbers for this line were derived using draft boundary data. Although draft boundaries were used, we believe that, in general, this has resulted in more accurate populations being attributed to each STW.

We again reported the population treated at Scottish Water operated STW that have their sludge treated at PPP sludge treatment centres. This accounts for the anomaly in reporting a population going to the 'incineration' and 'other' routes but no Scottish Water sludge volumes being recycled through these routes.

The confidence grade remains at C3.

E10.2 Amount of sewage sludge

The total amount of sewage sludge decreased by 2.4 ttds (10.1%) to 21.4 ttds. Part of this reduction is due to our reporting the Inverness sludge in the PPP section of Table E. If the change from 2006/07 to 2008/09 is examined the sludge production has fallen by 0.4 ttds (1.8%), which corresponds to a 4% fall in the total load reported in Table E7 for the same period.

GEMINI was used again this year as the source of all the sludge data. The loss of the land bank available for land reclamation is apparent in the data, with increases in other recycling routes to compensate.

The increase in the Farmland Advanced route is largely attributable to Kinneil Kerse. The imports to this Sludge Treatment Centre (both Scottish Water and third party) increased this

year. The fall in the Farmland Conventional route is due to the diverting of sludge to Girvan during the maintenance of the digester at Cumnock and the closure of the Kelso digester.

The confidence grade remains at B3.

E10.3-10.9 Sludge Treatment and Disposal Costs

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:-

	2008/09	**2007/08**	**Variance**
	£m	£m	£m
Farmland:			
Untreated	0.000	0.000	+0.000
Conventional	3.216	2.807	(0.409)
Advanced	6.197	5.792	(0.405)
Incineration	0.000	0.000	+0.000
Landfill	0.927	0.849	(0.078)
Composted	1.181	0.129	(1.052)
Land reclamation	0.000	0.998	+0.998
Other	0.000	0.000	+0.000
Total	**11.521**	**10.575**	**(0.946)**

Sludge treatment costs increased by £0.9m from 2007/08. The change in costs by route has been affected by the following main factors:

- Lack of outlets available for disposal to land reclamation £1.0m, which has been replaced by composting for Troqueer site £1.0m.
- Farmland Conventional and Advanced costs have increased due, in part, to improved identification of sludge treatment costs previously charged to sewage treatment. This improved identification has led to movement of £1.1m between sludge treatment and disposal for Farmland Advanced;
- Overall, unit costs have increased. This is due, in part, to the improved identification of sludge treatment costs and partly due to increased route costs.

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.

Table E11 Management and General

E11.1-4 Employee Numbers

The employee numbers reported in E11 exclude FTE's associated with capital work, third party services and PPP. This ensures consistency with the costs reported in tables E1b and E2b.

The following reconciles E11 staff numbers to the annual accounts for 2008/09 and 2007/08:

	2008/09 FTE's	**2007/08** FTE's	**Variance** FTE's
Direct operations	1,086	1,095	(9)
Indirect operations (General and support)	617	563	+55
Other (incl hired and contracted)	636	657	(21)
Total employee numbers per E11	**2,340**	**2,315**	**+25**
Staff involved in capital & transformation projects	937	849	+87
Staff associated with PFI	9	8	+2
Statutory waste and wastewater services	**3,286**	**3,172**	**+114**
Staff associated with third party activities	206	221	(16)
Staff seconded to Scottish Water Solutions	92	163	(72)
Total FTE's per Statutory Accounts ex SWBS	**3,583**	**3,557**	**+26**

The average total number of employees during the year increased by 26 from 3,557 to 3,583. However, the number of employees in total at March 2009 (3,572) reduced by 11 from the March 2008 figure (3,583).

Confidence Grades – Employee numbers are taken directly from the payroll system. Confidence grade for absolute employee numbers is A1. However, in Table E11, employee numbers must be split by activity and direct / indirect. These classifications are not held in the payroll system. Employee numbers are split against these classifications on the basis of ABM employment cost analysis. Confidence grades are assessed as B2, consistent with 2007/08.

E11.5-20 Management and General Assets

Our methodology for categorising assets into water and wastewater is the same as last year. Please refer to the commentary for Table H6 for further details on these lines.

The confidence grades are consistent with those reported in Table H6.

Miscellaneous E1&2 Commentary

E table guidance requests commentary on the following 2 items:

Pension Contributions

Scottish Water is a participating employer in three Local Government Pension Schemes (LGPS) - Strathclyde Pension Fund, the Aberdeen Pension Fund and the Lothian Pension Fund. These funds are administered by Glasgow City Council, Aberdeen City Council and Edinburgh City Council respectively.

The administering authority for each scheme is required to conduct a triennial valuation of the assets and liabilities of each scheme in line with LGPS regulations. The purpose of the valuation is to review the financial position of the fund and specify the employer contribution rates for the next 3 years. A valuation was carried out as at 31 March 2008 and Scottish Water have been advised of the contribution rate for the three years from financial year 2009/10.

The contribution rate for each fund is based on the current service cost and the funding position of each fund at the valuation date. The average funding level of the 3 schemes at 31/3/08 was 92%. Therefore, the Employer contribution rates shown below include an element to reduce the deficit on each fund.

	2006/07	**2007/08**	**2008/09**
Contribution %			
Aberdeen	16.40	16.93	17.85
Edinburgh	19.47	20.63	21.50
Glasgow	14.84	16.52	18.20
Average Number of Members			
Aberdeen	957	960	949
Edinburgh	997	1,034	1,094
Glasgow	1,393	1,358	1,312

The average contribution rate has increased from 16.72% 2006/07 to 17.84% 2007/08, and 19.21% in 2008/09. In Tables E1 & 2, the increase in contributions has caused a £0.8m increase in pension costs, excluding the effect of salary inflation.

Charitable Donations

There have been no donations to charitable trusts or other funds assisting customers with payment difficulties in the year.

G Tables

Base Information

Tables G1 – 6: General comments

Tables G1 – 6 present Scottish Water's Q&SII and Q&SIII investment programmes showing the prior years' expenditure, the actual expenditure in the report year and forecasts for future years. Scottish Water successfully delivered £686.5m of investment ahead of the revised forecast £670.2m profile approved by the Board in March 2008.

The Q&SII programme delivered £25.0m of investment. The gross forecast outturn is £2,242.1m and the net forecast outturn is £2,236.3m including the completion value of £346.8m net of £5.8m contributions. This is the current view of investment required to deliver the Q&SII service and legislative objectives. The main focus of investment in 2008/09 has been legislative-driven quality improvements.

£661.5m of investment has been delivered this year on the Q&SIII programme, including completion projects. Expenditure in 2008/09 delivered a number of water and wastewater quality projects and over 82% of the programme is now under construction or beyond. There has been considerable progress on the UID and Water Resources strategic studies, feasibility, design and progression to construction on water and wastewater quality projects. Capital maintenance investment on infrastructure, non-infrastructure and management and general accounts for 35% of the total.

The total forecast expenditure, including the Q&SII Conclusion Programme, is within the range of +/- £40m of the 2006-10 final determination allowance, after including the additional funding. The table below shows the current position.

Programme funding (£m)	**Q4 2008/09 CIR**
Regulatory funding	
Q&SIII (excluding Retail £8.3m), less funding from other sources	2,163.3
Q&SIIIa Start Early (pre April 2006)	24.3
Q&SII completion	274.6
Indexation allowance from revenue	35.0
Subtotal	**2,497.2**
Funding from other sources	
Capital receipts	17.9
Grants	5.2
Customer contributions Q&SII	5.8
Customer contributions Q&SIIIa	4.4
Infrastructure income available for Part 3 investment	17.4
Subtotal	**50.7**
Total funding	**2,547.9**

The Q&SII Completion Programme is based on Version 3.6.3 of the WIC 18 Baseline Programme submitted to the Water Industry Commission for Scotland (WICS) in September

2006 and is reported at project level in G5. The main focus of investment in 2008/09 has been legislative-driven quality improvements. All Q&SIII Development costs and the Q&SIII funded element of the Q&SII Completion projects are reported in G6 in line with WIC requirements and the quarterly Capital Investment Returns.

The Q&SIII Programme is based on the Table K submission with disaggregation of projects from programme funding lines for capital maintenance and enhanced level of service.

All Q&SII projects are reported in G5 and all Q&SIII projects reported in G6. Changes to the percentage allocation of drivers for Q&SIII and output codes for Q&SII have resulted in changes to the summary level data feeding through in 2006/07 and 2007/08 columns in the Annual Return 2008/09.

Changes to the approved value for Opex impact will also result in changes to the Opex impact reported in 2006-08.

The forecast investment for 2008/09 in the Annual Return 2007/08 was based on the monitored forecasts. The outturn investment in 2008/09 does not align with the original forecasts. Investment in 2008/09 was ahead of Scottish Water's target with acceleration of investment on a number of projects as well as increased investment costs on a number of projects. A number of projects are reporting the gross costs of delivery as, contributions previously credited, have now been removed. No adjustment was made to the Q&SII Programme future forecasts in Q4 2008/09 CIR.

The Q&SII Completion Programme forecast post March 2010 has increased by £10m, to £38.1m, largely due to increased investment on Dunoon and Kenmore. The Q&SIII Programme investment post March 2010 has increased to £149.3m from £74.0m in the Annual Return 2007/08. This relates to increased completion forecasts for the Water Quality programme, UID programme and Water Resources programme. This forecast does not include any further increase above the funded limit for both Strategic UIDs and Strategic Water Resource Study outcomes. Should additional investment or further re-profiling of investment be required, these will increase the forecast investment or the post March 2010 completion costs respectively.

Within the Q&SIII programme, the forecast investment in the wastewater programme reported in the Annual Return 2007/08 was £9.3m lower than the actual investment outturn with the majority of the reduction against the quality and non-customer connections growth programmes. The water programme outturned £35.8m above Annual Return 2007/08 forecast with further acceleration of the capital maintenance programme.

A capital maintenance adjustment of £53.72m has been applied to the 2009/10 forecast and a £7m adjustment to the completion investment forecasts in G6 to bring the investment forecasts down within funding. Further prioritisation of capital maintenance will be progressed.

The MEAV project, which re-assessed the value of Scottish Water's asset stock on a modern equivalent basis, was completed towards the end of 2007/08. However, further work is required to establish the methodology for assessing the impact of Q&SIII projects on Scottish Water's gross MEAV and this is expected to be incorporated into AR10. The current return is based on the original Table K methodology of including the investment on quality and growth and the methodology used for the 2nd Draft Business Plan.

As there was less than £100 allocated to CS2 projects in the Q&SII programme and there has been no investment on CS1 projects, no detail is provided in this return on the nature of the investment or customer service benefits it has brought, as required by the Table G

Guidance. The Q&SII Spend to Save and Transformation programmes were completed in 2005/06 and therefore no detail of the programme is included in this year's return. There is no equivalent programme for Q&SIII.

A new Share Account project was created for Q&SII in 2008/09 and reports an £8m contribution from Scottish Water Solutions (SWS) to reflect the current forecast inefficiency position on the Q&SII contract. This is split equally between WM3 and SM3. The provision arises as SWS have a liability, in accordance with the contractual terms of the joint venture Service Agreement with Scottish Water, which reflects the sharing of risk and reward.

Within Table G6, WSI, WSNI, WWI and WWNI have been used as drivers for support services for vehicles, plant, offices, depots, laboratories, estates (non-operational sites), telemetry (non-operational sites projects), Q&S3A and Q&S3B development, Health & Safety and Property maintenance, Network Modelling and IT investment. The SS capital maintenance output has been used for these projects with the gross MEAV assumed to be the investment reported by each project.

Opex impact is calculated from the date of beneficial use (Q&SII) or acceptance (Q&SIII) with a proportion within the first year and the balance in the second year. Any Opex impact takes the actual Opex released by Finance or the latest Capex approved Opex impact. Where projects have still to achieve Capex 2 approval, the baseline Table K value is brought through. During 2008/09, the Opex impact being included in Capex approval submissions required confirmation that Customer Operations agreed the value being reported. Where a project has achieved beneficial use or acceptance and Finance have not released actual Opex, the impact of the capital programme projects' have been absorbed within the overall operating expenditure.

As required by the Section G Guidance, impounding reservoirs with WSI driver and Support Services projects with WSI, WWNI, WWI and WWNI drivers have been reported against SS output. The programme types are shown in tabular form below with details of the projects reported in G6 Appendix 1 within the Data Tables folder.

Project Type	Driver	Output	Output Unit
Impounding reservoirs	WSI	Throughput of works subject to maintenance	Ml/d
Asset Intelligence Health & Safety M&G Maint IT Logistics Property – Facilities Property – Estates Property – M&G Maint Scientific Telemetry Network Modelling – Water & Wastewater Q&SIII Devt Costs Q&SIIIB Further Devt Costs	WSI, WSNI, WWI, WWNI	Gross MEAV of assets subject to maintenance work	£

Table G1 Summary Water Service

Where no line comment is given, the data is derived from Tables G3a and G4a or calculated from the drivers in G5 and G6.

As there was less than £100 allocated to CS2 projects in the Q&SII programme, no detail is provided at project level.

G1.1-1.6 Base Service Provision/Capital Maintenance

G1.1 – Base operating expenditure

This is calculated from the total operating expenditure (Table E1.20 water Opex for the Annual Return 2008/09) by deducting new Opex resulting from capital investment to reflect the total Opex, had the investment not progressed. We have stated all operational expenditure against Q&SIII and have entered a confidence grade of B2 as a result. Future years' base operating expenditure is not yet known and is reported as DX. The base operating expenditure value for 2007/08 was re-stated in Table E and results in a change to the Total Operating Expenditure value in G1.

G1.2 - Infrastructure Renewals expenditure (net)
This line is reporting the gross investment as, contributions which had been credited to projects have been removed, in 2008/09 and are reported against the Grants and Capital Contributions in G1.15 – G1.19.

G1.3 - Maintenance non-infrastructure (gross of grants and contributions)

This is the gross value calculated from G5 and G6.

G1.4 - Maintenance non-infrastructure - grants and contributions.

No grants or contributions to Q&SII or Q&SIII capital maintenance projects were received in the Report Year. No forecasts are shown for future years as there are no confirmed grants or contributions.

G1.5 - Maintenance non-infrastructure (net of grants and contributions)

This is calculated from G1.3 and G1.4 and equals the gross value for both Q&SII and Q&SIII as contributions are not credited to projects.

G1.7-1.8 Quality Enhancements

G1.8 – Quality 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. The value in the report year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the acceptance date falls. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G1.9-1.10 Enhanced Service Levels

G1.10 - Enhanced service 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. The value in the report year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in a split at project level across two years. For Q&SII, Opex impact from the SEMD projects is reported against Enhanced Level of Service, although the projects are reported with capital maintenance drivers, as there is no place to report Opex from capital maintenance projects. For Q&SIII, any Opex impact from capital maintenance projects is also reported against Enhanced Level of Service. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G1.11-1.12 Growth (Supply/Demand Expenditure)

G1.12 Growth additional operating expenditure

Additional operating expenditure is calculated through analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth. The value in the report year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the acceptance date falls. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G1.13-1.14 New outputs/obligations since the final determination

Three water quality projects are considered as new obligations and are included against these lines. Two projects, relating to reservoirs which were subject to flood studies, and one Competition project have been added in 2008/09. Confirmation of the value of these projects has or will be determined at Capex 3 and confirmed through the logging process with WICS. The Opex impact is calculated and split proportionately across two years depending on where the acceptance date falls. The 6 projects included in the New Obligations are:

- 37306 Langholm WTW – Upgrade,
- 31595 Ullapool WTW – Upgrade,
- 36453 Blairnmarrow WTW - Quality Enhancement,
- 36653 Tighnabruich No1 Reservoir-Freeboard Improvements,
- 37427 DIR. FEH Flood Studies - Resultant Design Work, and
- 37673 Wholesale Development to secure expected Scottish Water Revenue and meet Code Compliance.

Project number 31094 Torrin WTW – Upgrade has been removed from this line in the Annual Return 2008/09.

G1.15-1.19 Grants and Capital Contributions

Five customer contributions received in 2008/09 are reported against the Q&SII Programme. 76 NRSWA contributions totalling £2.592m are included in the 2008/09 total for Q&SIII with contribution to business meter installation, and a water growth infrastructure project also received. The infrastructure charge income is reported as contribution against the Q&SIII programme. No future grants or contributions are reported as these are not confirmed and as such, future year forecasts are given a confidence grade of DX to reflect this. The contributions value reported in years 2006-08 has been amended as contributions previously credited to infrastructure projects, have been removed and the projects reported as gross.

G1.20 Adopted Assets, Nil Cost Assets

Three water assets adopted in the Ness Area in 2008/09 are reported. The confidence grade for the report year is shown as C3 as the estimated asset value of the water mains adopted after deducting the reasonable cost contributions payable to the developer is not available for 2008/09. Confidence grades for Q&SIII for future years are given a confidence of grade of DX as there is no information available on any future adopted or nil cost assets. It is not expected that there will be any future adopted or nil costs assets from the Q&SII programme.

Table G2 Summary – Wastewater Service

Where no line comment is given, the data is derived from Tables G3b and G4b or calculated from the drivers in G5 and G6. DX confidence grades have been applied as per G1.

G2.1-2.6 Base Service Provision/Capital Maintenance

G2.1 – Base operating expenditure

This is calculated from the total operating expenditure (Table E2.19 wastewater Opex for AR09) by deducting new opex resulting from capital investment to reflect the total Opex had the investment not progressed. We have stated all operational expenditure against Q&SIII.

G2.2 – Infrastructure Renewals Expenditure (net)

Infrastructure Renewals expenditure (net) is reporting the gross investment, as contributions which had been credited to projects have been removed in 2008/09, and are reported against the Grants and Capital Contributions in G2.15 – G2.19.

G2.3 - Maintenance non-infrastructure (gross of grants and contributions)

This is calculated from G5 and G6 as any contributions received have not been credited to the projects.

G2.4 - Maintenance non-infrastructure – grants and contributions

No contributions were received for maintenance projects in Q&SII or Q&SIII in the report year. No forecasts are shown for future years as there are no confirmed grants or contributions.

G2.5 - Maintenance non-infrastructure (net of grants and contributions)

This is the gross value as there were no grants or contributions.

G2.7–2.8 Quality Enhancements

G2.8 – Quality 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. The value in the report year and future years is calculated from the acceptance (beneficial use) date resulting in expenditure being split proportionately across two years depending on where the beneficial use date falls. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G2.9-2.10 Enhanced Service Levels

G2.10 - Enhanced service 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. The value in the report year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in expenditure being split at project level across two years. For Q&SII, the Opex impact from the DSEAR Programme is reported against Enhanced Level of Service although the Capex investment is reported against capital maintenance drivers as there is no place to report Opex from capital maintenance projects. Opex impact from Q&SIII capital maintenance projects is also reported against Enhanced Service Levels. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G2.11-2.12 Growth (Supply/Demand Expenditure)

Additional operating expenditure is calculated through the analysis of the proportion of capital spend allocated to quality, enhanced level of service or growth. The value in the report year and future years is calculated from the actual or forecast acceptance (beneficial use) date resulting in expenditure being split at project level across two years. Where there have been changes to the driver allocation, the Opex impact value reported against quality is amended in prior years.

G2.13-2.14 New Outputs/Obligations since the final determination

A total of 8 projects are reported against line G2.13. Five additional EC11 landfill projects were added to the programme in 2008/09:

- 36388 Upperside Quarry, Rosebery,
- 36389 Elfhill Quarry
- 36390 Loch Craigs Quarry
- 36391 Killiecrankie WTW
- 36392 Craggans Hill
- 36023 SR10 Flow & Load Investigation at WWTWs with SR10 Quality Enhancement
- 30240 Dunnswood acceleration of Q&S3b upgrade
- 34970 Customer Charging – Area Based Drainage Banding (Phase 1) Investigation (carried forward from the Annual Return 2007/08).

The two first-time provision projects reported in 2007/08 have been removed. Opex impact reported relates to Dunnswood STW Upgrade.

G2.15-2.19 Grants and Capital Contributions

Four customer contributions, received in 2008/09, are reported against the Q&SII quality or growth projects and one contribution was received towards a Q&SII flooding project.

The Q&SIII programme is reporting NRSWA contributions totalling £1.112m, a contribution from Scottish Government of £0.015m towards Development of South Dalmarnock SUDs plus two customer contributions. The infrastructure charge income is reported as contribution against the Q&SIII programme. No future grants or contributions are reported as these are not confirmed.

The contributions value reported in 2006-08 have been amended as contributions previously credited to infrastructure projects have been removed and the projects reported gross.

G2.20 Adopted Assets, Nil Cost Assets

No assets are reported as having been adopted at nil cost in 2008/09. The confidence grade for the report year is reported as C3 as the estimated asset value of the sewers adopted, after deducting the reasonable cost contributions payable to the developer, is not available for 2008/09. Confidence grades for Q&SIII for future years are given a confidence grade of DX as there is no information available on any future adopted or nil cost assets. It is not expected that there will be any future adopted or nil costs assets from the Q&SII programme.

Table G3a Q & S II Delivery – Water Service

General comments

All cells are calculated from the outputs reported in G5. There is a negative value reported against G3a.5 due to provision for claims liability and reinstatement remedial works having been reduced in the report year. The negative value reported against G3a.7 is due to the application of a £4m credit against WM3 output which relates to the pain/gain share account with Scottish Water Solutions (SWS) in 2008/09 recognising inefficiencies in delivery of the Q&S2 programme. The share account is reported as 50% water and 50% wastewater.

Table G3b Q & S II Delivery – Wastewater Service

General comments

All cells are calculated from the outputs reported in G5. The negative total is reported against G3b.4 is due to the application of a £4m credit against WM3 output which relates to the pain/gain share account with Scottish Water Solutions (SWS) in 2008/09 recognising inefficiencies in delivery of the Q&S2 programme. The share account is reported as 50% water and 50% wastewater. There is a small negative in G3b.18 due to finalisation of costs on eleven CSO projects which are reporting negative value in 2008/09.

Table G4a Q & S III Drivers – Water Service

G4a.1 Base operating expenditure

This is calculated from Water Opex reported in Table E1.20 with the value reported in G1.1. The value of £166.42m is lower than the E1.20 value of £168.89m as the Opex impact of £2.47m from Q&SII and Q&SIII projects within 2008/09 is added in G1 to achieve the E1.20 figure. DX confidence grades have been added to the forecasts as explained in G1.

G4a.2 – G4a.42 These lines are all calculated from the drivers against the projects reported in table G6.

G4a.28 Reservoirs operate with agreed best practice [WR2]

The studies relating to reservoirs operated with agreed best practice [WR2] includes any work required for WR3 and WR4.

G4a.39b Introduction to Competition [CS13]

The investment against this line has been to enable the development and implementation of business separation between Scottish Water and Business Stream, to support full market opening, including interfacing with the CMA, and to continue to support the wholesale function.

G4a.45 – G4a.46 New outputs/obligations since the final determination

Three water quality projects, Ullapool, Blairnamarrow and Langholm are considered as new obligations and are included against these lines. Torrin was reported against this line in the Annual Return 2007/08 but has now been removed from the new obligations list. Two reservoir projects have been added in 2008/09:

- Tighnabruich No1 Reservoir-Freeboard Improvements and
- DIR. FEH Flood Studies - Resultant Design Work

This follows a DWQR requirement to progress remedial work identified through the flood studies at 7 sites. The estimated cost of delivering upgrades to the 6 sites included within the resultant design work is not currently included in the forecasts.

One further project, Wholesale Development to secure expected Scottish Water Revenue and meet Code Compliance, has been added in the Annual Return 2008/09.

Confirmation of the value of these projects will be determined at Capex 3 and/or confirmed through the logging process with the WICS. The Opex impact is calculated and split proportionately across two years depending on when the acceptance date falls.

Table G4b Q & S III Drivers – Wastewater Service

G4b.1 Base operating expenditure

This is calculated from Wastewater Opex reported in Table E2.19 with value reported in G2.1. DX confidence grades have been added to the forecasts as explained in G2. The value of £117.56m is lower than the E2.19 value of £120.02m as the Opex impact of £2.46m from Q&SII and Q&SIII projects within 2008/09 is added in G1 to achieve the E2.19 figure.

G4b.2 – G4b.48 are calculated from the drivers against projects in G6.

G4b.49 – G4b.50 New outputs/obligations since the final determination

The two first time provision projects – 'Tobermory Ledaig' and Investigation of 'Potential FTP Provision at Lochawe, Connel/Nth Connel, Newtonhill, Carlogie & Clayholes' reported in Annual Return 2007/08 are no longer included in the new obligations list. The Customer Charging - Area Based Drainage Banding, requested by Scottish Government, was reported in 2007/08 and is included in this return together with the 5 additional EC11 landfill projects added to the programme, as described in G2.13-2.14 commentary, plus Dunnswood STW – Upgrade and SR10-Flow & Load Investigation at WWTWs with SR10 Quality Enhancement are reported against these lines. Confirmation of the value of these projects will be confirmed through the logging process with the WICS. Opex impact is reported against Dunnswood STW Upgrade.

Table G5 Project Analysis Q & S II – Actuals & Forecast – Water & Wastewater
Commentary on G5 is Column by Column.

Column 1 - Project Number
This is the unique number which identifies the project within the capital investment programme and CIMS.

Column 2 – Project Name

This is the title defined by Scottish Water and is taken directly from the capital investment programme and CIMS. The only exceptions are the projects which have been rolled to programme groups for reporting and begin with '400' numbers.

Column 3 – Water/Wastewater
All projects are shown as water or wastewater except seven which are classed as general. These include the Solution Share Account and Scottish Water Overheads.

Columns 4 & 5 – Quality and Regulatory Output Sign-off Required
All projects identified as having quality drivers and requiring DWQR or SEPA sign-off for quality outputs are shown in these columns.

Column 6 – Accountability
All projects are identified as being delivered by Scottish Water, Scottish Water Solutions as part of the Allocated programme or by Scottish Water Solutions as part of the Managed programme.

Columns 7 & 8 – Programme Group and Funding Category
These are reported as held in CIMS.

Column 9 – Q&SI Project
This column reports projects which were part of the Q&SI planned carry-over to Q&SII and excludes projects which were not included in the original WIC 18 programme.

Columns 10 – 14 and 16 – 18 Actual Expenditure
The actual expenditure by year is held in CIMS and is reconciled with the corporate financial system. There are a number of projects reporting negative investment for the following reasons:

- SWS credit of £8m received into the new Share Account
- Scottish Water overheads transferred to the Q&SIII programme to better reflect the allocation of overheads across the programmes
- reduced provision for claims and NRSWA reinstatement liability
- settlement of final accounts
- correction of over-accruals in 2007/08

Column 15 – Q&SII Period Expenditure
This is the sum of the expenditure from 2002-06 from Columns 11 – 14.

Column 19 – 09-10 Forecast expenditure
Future forecasts for 2009/10 are held within CIMS and shown here.

Column 20 – Post 05-06 Expenditure Total
This is the sum of the actual expenditure in the three years to 2008/09 plus the forecast expenditure for 2009/10 calculated in WIC Reporting Database.

Column 20a – Post 09-10 Expenditure (£m)
This reports the forecast spend beyond March 2010 to complete investment on Q&SII projects. The majority of the forecasted spend relates to Campbeltown, Dunoon and Kenmore which have all been delayed due to land, planning and consents issues.

Column 21 – Q&SII Project Total
This is the sum of the pre 2002/03 investment, the 2002-06 investment, post 2005/06 investment including the forecast for 2009/10 and the investment continuing beyond March 2010. Although the definitions indicate that this should report investment since commencement of the Q&SII period (April 2002), the fields indicated for calculation include

pre-2002/03 investment. The total investment forecast from April 2002 until completion for the Q&S2 programme is £2556.55m

Projects, excluding the Share Account and Q&S2 Reservoir Security Contract Adjustment, that are reporting negative total investment are being reviewed.

Columns 22 – 24 – WIC 18 Data
This data is held within the WIC Reporting Database and is as reported in the Q4 Capital Investment Return.

Columns 25 and 26 – Grants and Contributions Infrastructure and Non-Infrastructure
This reports the actual or forecast values of grants and contributions received in the Q&SII programme. These reconcile with the grants and contributions recorded as received in Peoplesoft. No further grants or contributions are expected in future years.

Column 27 – Total Changes in Operating Costs
The information on changes in operating costs has been derived from a number of sources. These include Opex costs of existing assets, operational experience and use of manufacturers' data where Scottish Water has limited or no experience of operating certain treatment processes. The impact of new investment takes account of changes in staffing levels, rent and rates, power costs, chemicals and other consumables, monitoring and sampling costs. A number of projects are reporting the actual Opex which has been released and others are based on the most recent Capex approved value from Capex 4, Capex 3 or Capex 2 approvals. Where the project Opex had been revised as part of the Business Planning process in 2005/06, it has retained that value unless there has been subsequent Capex approval or further review as part of the development of the 2nd Draft Business Plan.

Column 28 – CIMS Status Code
The project status code is taken from the pre-determined set of codes which reflect the current stage of the project. Progress on projects is updated monthly through CIMS and status codes are adjusted to indicate the milestones which have been achieved. S12 is used where SEPA or DWQR regulatory sign-off of outputs on quality projects has been received but the project has not yet achieved Capex 5. As agreed, S4 has been used to identify projects which were stopped prior to construction or were not able to progress to beneficial use. Projects which had a regulatory output in Version 3.6.3 of the WIC 18 Baseline Programme which are now being delivered through a different project are not shown as S4 but as S10, S12 or S13. A number of projects have been confirmed as having received Capex 5 or 6 approval but were not reported as S13 in Q4 CIR. These are included with their actual dates in Column 32 and the status code has updated to S13.

Columns 29 – 32 – Capex Stages
A number of projects did not receive Capex 2 approval as they went straight from Capex 1 to Capex 3. Where projects pre-date the introduction of Capex 5 and have a handover date, the handover date has been reported against Capex 5 dates. A number of projects have received Capex 6 approval without Capex 5 and these are reported with the Capex 6 approval date. Planning approval is only shown where a project has, or requires to obtain, planning approval.

Columns 33 – 52 - Drivers and Driver % Allocation
The Q&SII Purpose codes from Appendix A of the Table G Guidance documentation are reported against these columns. The proportional allocation between purpose codes is in line with the methodology used in previous years. The output measures were considered first and a percentage split allocated on the basis of the number of outputs. However, where better information was available on the split between outputs, this has been reflected in G5.

Investment to meet SEMD and DSEAR requirements are reported against WM2 and SM2 respectively.

Columns 53 – 72 - Output and Output % Allocation
The Q&SII output codes from Appendix A of the Table G Guidance documentation are reported against these columns. Each output has received a % allocation in line with the total number of outputs. Where better information was available on the split between outputs, this has been reflected in G5, for example, a small proportion has been applied to recognise sewer or mains rehabilitation and growth within projects. These have also been updated to include any changes resulting from the output from the analysis of projects reviewed as part of the commission to Berkeley Consultants and from Capex approvals in the report year.

Table G6 Project Analysis Q & S III – Actuals & Forecast – Water & Wastewater
Commentary on G6 is column by column.

Column 1 - Project Number
This is the unique number which identifies the project within the capital investment programme and CIMS. Programme holding lines and Programme Risk lines start with "400".

Column 2 – Project Name
This is the title defined by Scottish Water and is taken directly from the capital investment programme and CIMS. Programme holding lines and Programme Risk lines have been added to CIMS during the Report Year.

Column 3 – Water/Wastewater
All projects which can be identified as water or wastewater are shown in this column. A number of Management and General projects are reported as General and show the split between water and wastewater in the driver columns.

Column 4 – Technical Expression
Projects which form part of the DWQR, SEPA, Scottish Government or WIC technical expressions are flagged in this column.

Column 5 – Accountability
All projects are identified as being delivered by Scottish Water or Scottish Water Solutions. Projects which form part of the Design and Manage Programme are reported against SWS – Managed with the projects delivered as part of the Solutions contract reported as SWS-Allocated.

Column 6 – Programme Group
Each project reports the group held in CIMS.

Columns 7 & 8 – Project Classification
The first column reports the primary classification as quality, growth, enhanced or base. The second column reports Non Infra, Non IRE or Infra IRE for projects where the total project forecast is less than £100k. Projects reporting zero investment have been left blank.

Columns 9 – 11 – Infra IRE, Non-IRE and Non-Infra Proportions of Projects
The forecast reported against Infra IRE is the proportion of the project based on the allocation to infrastructure maintenance drivers. The forecast against Non-IRE is the proportion of the project allocated to infrastructure, excluding capital maintenance. The forecast against Non-Infra is the proportion of the project allocated to Non-infrastructure drivers. Projects with investment less than £100k are blank in line with Table G Definitions.

Column 12 – Current Project Status Code

The project status code is taken from the predetermined set of codes which reflect the current stage of the project. Progress on projects is updated monthly through CIMS and status codes are adjusted to indicate the milestones which have been achieved. S12 is used where SEPA or DWQR regulatory sign-off of outputs on quality projects has been received on Q&SII Completion Projects and Q&SIII projects. S10 has been used where acceptance has been achieved. Where there is a regulatory output, acceptance will trigger preparation and submission of the output to the Quality Regulators for sign-off. Projects which have achieved Capex 5 are reported as S13. Projects requiring regulatory sign-off will not receive Capex 5 approval until confirmation of the output(s) sign-off has been obtained. As agreed, S4 has been used to identify projects which were stopped prior to construction or were not able to progress to beneficial use. Status code S5 has been used where projects have been deferred from the Q&SIIIa programme. A number of projects are reporting a different status code from the Q4 CIR. The majority relate to a processing issue which failed to fully pick up S4 and S5 codes, correction of S13 to S12 where projects have regulator sign-off but have still to achieve Capex 5 approval, update to S13 where projects have Capex 6 approval but are not recording a Capex 5 date and a number of approvals relating to 2008/09 which were updated in CIMS in early April.

Columns 13 – 16 – Milestone Dates
These are reported from CIMS from March 2009 monitoring. Until the UID strategic and water body studies are complete, the requirement for planning approval cannot be assessed and forecast dates will be added, where applicable, once the individual projects are promoted. As projects requiring sign-off from the Quality Regulators will not be approved at Capex 5 until confirmation of sign-off has been received, the actual or forecast date will normally be after the sign-off, actual or forecast, reported in Q4 CIR. A number of projects have not allowed 3 months for sign-off and have Capex 5 forecasts prior to the sign-off forecasts.

Column 17 – Local Authority
These are reported from CIMS. Projects covering more than one local authority area are reported as Scottish Water Wide. Projects which are included in G6 as they have a Table K budget, but have not been promoted for delivery, are not reporting a local authority.

Columns 18 – 25 – Financial Profiles
The actual expenditure pre 2006/07 and in 2006-09 is held in CIMS and has been reconciled with the corporate financial system. Forecast expenditure on individual projects is held in CIMS. The Water Resources holding line holds the balance of funding which has still to be disaggregated and the UID holding line reports a negative adjustment of £42.232m to bring the UID programme in line with the Final Determination Funding value. Two adjustment lines for capital maintenance have also been included where further prioritisation of the capital maintenance programme will be undertaken to identify projects to be stopped or deferred to keep investment within the funding allocation. A Scottish Water Solutions programme line is reporting a negative total but this will be corrected to zero in 2009-10. A number of projects with small negative totals are being reviewed.

Column 26 –Table K Budget Allocation
This data is held within the WIC Reporting Database and is as reported in the Q4 Capital Investment Return. Table K budgets are updated from Capex 3, Capex 4 and Capex 5 approvals.

Columns 27 – 30 – Grants and Contributions Infrastructure and Non-infrastructure
The Infrastructure Charge income received is reported against Infrastructure contributions in the report year. No future infrastructure charge income is reported as the values are not yet known. However, the total value expected is the region of £38m. Contributions received in 2006-09 are reported against the individual projects.

Columns 31 – 32 - Impact of Project on Scottish Water Gross MEAV
The values reported in the current return are based on the original Table K methodology of including the investment on quality, enhancement and growth and in line with the methodology used for the 2nd Draft Business Plan. The application has been based on methodology applied in Table K pending the MEAV project being applied to capital projects in future years. Projects which have been stopped or deferred are reporting zero impact.

Column 32 - Impact of Project on Opex
The reported Opex is the actual Opex released by Finance or the latest Capex 3/4 approved values, Capex 2 approved values or the baseline Opex identified in Table K where projects have still to achieve Capex 2 approval, incorporating the business review undertaken during preparation of the 2nd Draft Business Plan. Projects which are not progressing have been reduced to zero.

Column 33 – 36 – Proportion of Capital Maintenance Element
The values reported are based on the percentage allocation against capital maintenance for all projects.

Column 37 – Population/population Equivalent Released from Development Constraints
Values are only reported against projects where the strategic capacity outputs population has been claimed or are forecast at project level. The balance for Water and Wastewater strategic capacity is reported against 30202 and 30203 respectively.

Column 38 - Regulatory Sign-off Required
Projects identified within Q&SIII Database as requiring sign-off are shown in these columns. The total number is different from the numbers reported in G8.50 and Q4 CIR as the rolling programme of quarterly or monthly outputs sub-projects are not included.

Columns 39 – 58 - Drivers and Driver % Allocation
The Q&SIII Driver codes from Appendix B of the Table G Guidance documentation are reported against these columns. The proportional allocation between driver codes is in line with the methodology used in Table K, updated with better information available on the split between drivers as projects have progressed through the Capex approvals process.

Columns 59 – 88 - Output and Output % Allocation
The Q&SIII output codes from Appendix B of the Table G Guidance documentation are reported against these columns. The Drinking Water Quality outputs are reported as population equivalent and EC11 is reported as number of sites made compliant with standards, as per Table K submission.

Table G7 Q&SII Output Delivery

G7.1-7.9 Progress with Q&S II Outputs

The Scottish Water target for March 2009 was to deliver 99.55% of the Q&SII programme. This was achieved and a delivery target of 99.8% set for 2009/10.

The delivery of the outputs is summarised in the table below.

Outputs	Output Description	Unit	Delivered at March 2009	Revised Targets as at March 2009	% Delivered
DW-FT	Properties receiving first time provision of water	Nr	408	408	100%
DW-P	Removal of Properties from the Poor Pressure Register	Nr	1391	1391	100%
DW-WQ	Drinking water drivers addressed	Nr	583	592	98.5%
WM-R	Mains Rehabilitated	Km	3051	3051	100%
WW-C	Continuous Discharges Removed	Nr	574	582	98.6%
WW-FR	Removal of Properties from 'at risk' Flooding Register	Nr	829	829	100%
WW-FT	Properties receiving First Time Provision of Sewerage	Nr	667	667	100%
WW-R	Sewers Rehabilitated	Km	409	409	100%
WW-UCSO	Unsatisfactory Combined Sewer Overflow	Nr	423	428	98.8%
					99.55%

• The target for DW_WQ has been adjusted to account for the removal of the outputs associated with Shieldaig. This was reported in 2007/08as a likely occurrence.

• The target for WW_C has been reduced from 585 to 582 to account for the removal / deferral of the following projects. Blackridge, Cairndow and Lochgair.

• The target for WW-uCSOs has been reduced by 1 to 428 to account for the removal of Edderton ST SWO, which will be delivered by the QS3 growth programme.

• Scottish Water has still to deliver the outstanding flooding projects at Creetown and Campbeltown, from the original flooding programme, which will deliver a further 26 outputs. However, as reported in the Annual Return 2007/08, two projects with 24 outputs were accelerated to deliver in 2006/07 to ensure the target was achieved with a total of 830 properties removed from the Flooding Register against the target of 829.

A total of 22 outputs remain to be delivered (excluding WIC 16), 16 of which are forecast to deliver in 2009/10, a further 4 in 2010/11 and the remaining 2 in 2011/12. Those projects forecast for delivery after March 2011 are Cowdenbeath and Dunoon Sewerage Schemes.

Improved confidence grades for the 2009/10 quarterly targets and post 2009/10 targets for the remaining outputs are reported due to the better information on the remaining projects.

G7.10-7.12 WIC 16 in progress

Of the 53 WIC 16 projects, 2 remain to be delivered and are forecast for delivery in 2009/10. These are Lismore and Stralloch. The confidence grade for the number of WIC 16 projects has been upgraded to A1 as the programme is not expected to change.

G7.13-7.17 Progress with Quality and Standards II sign-off

Of the 1,161 projects requiring regulatory sign off a total of 1,144 projects have been completed. Of these, 1,125 have been submitted and 1,039 signed off. These figures do not include WIC16 projects.

There are nine backlog quality projects awaiting submission to the Regulators; five of these require remedial works which are being addressed via new projects and will be submitted upon completion of the new projects. The remaining four projects are legacy projects for which information has been difficult to collate.

The submission of the delivered projects is assumed to be 3 months after the Beneficial Use date. Regardless of submission of regulatory sign-off forms, final approval remains dependent on SEPA and DWQR agreeing the outputs have been delivered and the regulatory approval profile can only be estimated. The confidence grade of B2 reflects this.

Table G8: Q&S 3 Ministerial Objectives and other outputs - Quality

G8.1 Customer Service

G8.1 Number of works where odour problem is addressed

Scottish Water delivered 10 outputs to March 2009 which was in line with the revised target approved by OMG. All outputs require to be approved by the Environmental Health Officer of the appropriate Unitary Authority before Scottish Odour Steering Group sign-off can be obtained. The target for 2009/10 is 13 with slippage on the output at Perth to 2010-11 due to a necessary re-design of the odour control system in the sludge storage building.

G8.2-8.11 Water Quality

G8.2-8.3 Improve drinking water quality for 1.5m people and Improve disinfection control for 4m people

The outputs relating to the Drinking Water Quality and Disinfection projects are based on the revised methodology agreed with DWQR to reflect the population benefiting from work being undertaken to improve disinfection control or drinking water quality. The Actual Target for 2008/09 was 2.49m (2.499m delivered) for Water Quality and 2.54m (2.543m delivered) for Improved Disinfection Control. The target for Disinfection for 2009/10 of 3.8m and overhang value of 4.31m takes account of the expectation that Glencorse, Blackpark and Killylour will not be completed until 2010/11.

G8.4 Number of lead pipes removed as a result of customer requests

No annual targets were set as this is a reactive programme of work dependent on customer requests. We have reported the actual number of outputs delivered during 2008/09. The values reported against the quarterly targets for 2009/10 are indicative of the estimated numbers that that may be removed. As a result we have applied a confidence grade of C3 to future years.

G8.5 Number of water resource zones with reduced abstraction

We delivered 45 cumulative outputs to 2008/09 (24 in-year), outperforming the target of 40 cumulative outputs and we have already received 42 sign-off's from SEPA putting us ahead of the 2008/09 target.

A revised output profile for the 78 outputs has been approved by the Scottish Water Board giving us a target of 64 cumulative outputs to be delivered by March 2010.

The delivery of the remaining 14 zones (post 2009/10) will be over subsequent years. For reporting purposes, we have estimated that the output profile should be 72 for March 2011 and 78 for March 2012. This is a controlled programme from the Strategic Studies undertaken which has been discussed with WICS.

G8.6 – Number of water sources provided with flow monitoring and recording

During 2008/09, installation of the necessary flow monitoring and recording equipment has been undertaken to cover a further 234 sources, bringing the cumulative total at March 2009 to 521. This represents full coverage of our sources, as agreed with SEPA, and marks the end of this programme. All outputs have been submitted to SEPA and we have received sign-off for 421 outputs (i.e. all claims up to the end of Dec 08) which is on track for Regulatory Sign-offs.

G8.7 Number of flood studies undertaken

The total number of flood studies has been increased from 29 to 30 with 23 studies signed off.

Following submission of the flood studies for sign-off, DWQR advised that remedial work identified at seven sites should be progressed before sign-off could be obtained. It was agreed with the Outputs Monitoring Group that the costs of the remedial work should be assessed and construction will be subject to the logging process.

G8.8 Number of backflow preventions devices installed

A total of 235 backflow prevention devices were installed by the end of March 2009 achieving the target within the first 3 years of the investment programme. The outputs delivered in 2008/09 have been submitted to DWQR for sign-off.

G8.9 Number of cross-connections made redundant

The total target included for cross connections is 5,500. A total of 4,937 connections had been completed by the end of March 2009 against a target of 4,500. The outputs delivered in 2008/09 have been submitted to DWQR for sign-off.

G8.10 Number of sites with increased security

The target of 898 sites by March 2009 has been achieved with an actual number of 901 sites delivered. Output sign-off is slightly behind target with 777 outputs achieving sign-off by March 2009. The remaining 20 outputs delivered in December have been submitted and are agreed with the DWQR.

G8.11 % of population covered with water safety plans

47.54% of the population has been covered by Water Safety Plans against a target of 46%. The methodology is defined within the Drinking Water Safety Plan Guidance Manual. As the plans have been developed, there have been minor modifications made to this manual and to the format of the plans.

Most of the data contained within the plan has come from corporate data sources, expanded with assessment of specific risks which are identified through audits and workshops.

G8.12-8.17 Waste-water Quality

G8.12 Number of unsatisfactory intermittent discharges improved

This year has seen a significant outperformance against the target set in Scottish Water's 2008/09 Action Plan, with an in-year total of 108 UIDs being improved, and an overall 2006 – 2009 total of 162 UIDs removed from the UID register. In line with previous years, several of the actual UID outputs achieved differ from those identified in the original SR06 Technical Expression. This has been managed and recorded utilising the various methodologies, processes and reporting templates previously agreed with SEPA and the Commission. Scottish Water has also continued to support the WICS' Reporter Stage 4 Cost Audits, part of the 7-Stage Process governance for the Strategic UID Studies. In addition, and although the Non–Strategic UID catchment studies are not subject to the 7-Stage process, they have generally been managed utilising identical principles and processes.

It has previously been acknowledged by all key stakeholders that the UID Programme outputs were subject to change in both the Strategic and Non-Strategic UID catchment studies. To March 2009, 49 removals and 88 additions (net change of +39 from SR06 Technical Expression number of 277), have been identified as formally requiring agreement by SEPA and OMGWG prior to being included in the SR06 UID programme. Of these, 33 removals and 57 additions have been formally signed off. The remainder of the changes will be formally agreed with the Regulators in due course. While the potential for change still remains, it has been considerably reduced as identification of UID needs is now substantially complete. Solution development however, particularly in some of the Non Strategic catchments, has been delayed due to the complexity and technical requirements of the design work required. This has slowed progress and is anticipated to have a substantial impact on the completion position. The other significant major impact on the overhang position is the delivery of the two major strategic work packages, Meadowhead WP6, and Airdrie & Coatbridge WP1.

Taking these factors into account, and when added to the March 2009 position, our forecasts for future years now indicate that the cumulative number of UIDs improved by March 2010 will be slightly lower at 251, than the target 264 indicated in Scottish Water's Delivery Plan Refresh (Feb 09), but that the final overall total will be higher. We are now reporting that, should the entire SR06 UID programme be fully funded and completed, there will be a potential overhang number of 65 outputs to March 2012, and a forecast figure of 316 UIDs improved.

G8.13 Number of waste water treatment works' discharges improved to meet new consent requirements

Scottish Water delivered 18 outputs to March 2009; 7 outputs were delivered in this report year, ahead of the revised target agreed by the OMG. The forecast target for outputs has been reduced to 27 following removal of Annathill and Greentoft from the programme.

G8.14 Number of First Time Provision projects to meet environmental objectives in the Directions

Scottish Water delivered 5 outputs to March 2009; 4 outputs being delivered this report year. The OMG has agreed the removal of 1 project from the target (Cairndow), bringing the target back to 9 outputs. The target for 2009/10 is 8 with slippage of Kishorn to 2010/11 due to planning and land issues and the potential requirement for a compulsory purchase order.

G8.15 Number of waste water treatment works upgraded to meet existing consent requirements

Scottish Water delivered 14 outputs to March 2009; 8 outputs were delivered this report year, in line with the revised target approved by the OMG. The target for 2009/10 is 17 with slippage of 1 output at Springfield to 2010/11.

G8.16 Number of management and monitoring systems at works to meet IPPC Regulations

As reported in the Annual Return 2007/08, the OMG has approved the reduction in target from 61 sites to 1 site which has been delivered and achieved sign-off during 2007/08.

G8.17 Number of landfill sites contained, monitored and decommissioned

Scottish Water has delivered 15 outputs to March 2009, in line with the revised target approved by the OMG.

G8.18 – 8.23 Development Constraints

G8.18 Provide strategic capacity at waste water treatment works

Scottish Water's Delivery Plan target for Strategic Wastewater capacity is 42,094 p.e. to March 2009 outperformed with 55,505 p.e. being achieved. This is slightly higher than the value reported in Q4 OMG graphs which was understated by 87 p.e.

G8.19 Provide strategic capacity at water treatment works

The Water Strategic capacity outputs delivered to March 2009 are a combination of upgrades at specific sites, sustainable leakage reduction within a number of DMAs and enabled development ahead of future investment. The target of 81,888 p.e. was outperformed with a total of 114,364 p.e.

G8.20 Total New Connections (including regeneration)

2008/09 actual new connections are significantly below the forecast due to the downturn in the housing market. The data for Total New Connections is taken from the corporate system, Ellipse. Regeneration is calculated by taking the Total Properties Added to Billing File (WIC 4 non corporate system) less Total New Connections.

The 2009/10 forecast is now significantly lower than previous years to take account of the downturn in the housing market. As a result, confidence grades have been lowered to A3/A4 to allow for uncertainties in the housing market projections.

G8.21 Implied regeneration, growth/shrinkage in customer base

The numbers are a calculated field from G8.20 and G8.22. Confidence grades have been lowered to B3/B4 to allow for uncertainties in the housing market projections.

G8.22 Net increase/(decrease) in billed properties

To reflect the change in responsibility for non-domestic growth being that of the Licensed Providers from 2008/09 the table below outlines an updated profile, although this is not shown in line G8.22 on the submitted table.

	2006/07	2007/08	2008/09	2009/10	2006-10 Total
2006-10 Original					
Household	15,408	15,519	22,813	22,892	76,632
Non-Household	500	500	2,250	2,250	5,500
Total	15,908	16,019	25,063	25,142	82,132
Re-profile					
Household	15,408	15,519	22,813	22,892	76,632
Non-Household	500	500	0	0	1000
Total	15,908	16,019	22,813	22,892	77,632

2008/09 actual increases in billed properties are significantly below forecast due to the downturn in the housing market. The data has been sourced from Local Authorities' WIC4 returns.

The 2009/10 forecast is significantly lower and confidence grades have been lowered to B3/B4 to allow for uncertainties in the housing market projections.

G8.23 Properties relieved from development constraint

The figures for properties relieved from development constraint are calculated from the Population Equivalent growth provided at both water and wastewater treatment works divided by the average household occupancy rates. The Scottish average household occupancy rate used is 2.11.

G8.24 Number of non-domestic meters installed

At total of 34,812 meters have been installed compared to the year end target of 36,500. In the region of 10,000 properties cannot be metered due to the following reasons;

1. Significant pipework alteration required
2. Vacant premises
3. Domestic/Commercial shared premises
4. Domestic dwellings
5. Demolished premises

A further c1,400 occupiers appear unwilling to grant access or have refused to have a meter installed.

A desktop survey completed in March 2009 identified around 420 properties of the 2,800 in categories 2 to 5 above, which will be revisited to review the possibility of installing meters.

Scottish Water continues to review the issues at the above premises which, for a number of reasons, initially could not be metered under the programme. Additionally Scottish Water, in conjunction with the Commission, has developed a Contribution Scheme to encourage higher levels of metering beyond that achieved through the FBM programme. Under the scheme licensed providers apply for financial assistance to allow internal pipework to be modified so that meters can be installed.

G8.25 SEPA priorities for capital maintenance expenditure (£20m)

Delivery of the SEPA priorities is ahead of the 2008/09 target with investment of £17.3m to March 2009. The programme is forecasting to outturn at £21m.

G8.26 DWQR priorities for capital maintenance expenditure (£10m)

The DWQR Exceptional Public Health Items funding is being used to promote additional schemes in the networks to address Iron and Manganese levels which may cause failures for which a programme of work was agreed with DWQR. Those schemes will augment the work already progressing. Investment to March 2009 has been lower than forecast in 2007/08 due to a change in the projects included in the agreed programme. The projects currently included in the agreed programme with DWQR total £8.4m and Scottish Water plans to request DWQR agreement to the inclusion of additional projects within the £10m funding. This is forecast in the 2009/10 targets.

G8.27-8.29 Leakage

G8.27 First pass Economic level of leakage estimated and presented to Commission

The milestone to present the Commission with the first pass ELL by 31 December 2007 was achieved.

G8.28 DMA coverage to include 92% of connected properties in Scotland

The target for DMA coverage was revised to 92% of connected properties with agreement of WICS.

G8.29 Revised ELL presented to the Commission

The milestone to present the Commission with the LRELL assessment by 31 December 2008 was achieved.

G8.30-8.40 Water Resource Studies

G8.40 Costs quantified for the remaining (complex) zones and presented to the Commission

The target for quantifying the costs for the remaining (complex) zones and presentation to the Commission was achieved by submission of the report (WRSS SR06 Complex Zones V1 Issued.pdf) on 31 October 08.

G8.41- G8.49 UID Strategic Studies

Strategic UID Studies are required in four catchment areas (Portobello, Glasgow, Meadowhead and Stevenston) to determine the optimum technical and cost effective integrated catchment solutions.

Determining the UID solutions was reliant on complex catchment and river/coastal water quality modelling. The creation of new models has been necessary and this has also impacted on the programme. To facilitate milestone completion, a "parallel process" was adopted to mitigate the risk to timely completion of the catchment studies, while allowing the technical models to be progressed and UID options refined as the quality of base data is improved. In terms of milestone completion, this approach has ensured that the twelve Delivery Plan Milestones due to-date have been exceeded, with an additional two of the original milestones being delivered ahead of schedule.

During solution development, it became apparent that two major work packages (Meadowhead WP6 and Airdrie & Coatbridge WP1) required extremely complex and challenging engineering solutions that would adversely impact on the reported delivery of their respective overall catchments and, in turn, the achievement of the relevant milestones. In order to more accurately reflect the actual SR06 UID programme delivery position, two additional milestones have been added to Scottish Water's Delivery Plan Update (Feb 09), these being Construction complete for Irvine Valley Trunk Sewer (WP6) and Airdrie & Coatbridge Trunk Sewer (WP1).

With the approved exception of these two work packages, WIC Stage 4 sign-off was approved in February 2009 for all remaining strategic catchments. Completion of detailed design and receipt of competitive tenders is expected to be achieved for Meadowhead (WP6) by end of June 2009 and for Airdrie & Coatbridge (WP1) by end of April 2010. WIC Stage 4 sign off for both work packages will be submitted following those dates.

The remaining UID Delivery Plan milestones required construction works to be completed within each of the four strategic catchments, and both the Stevenston and Portobello catchments have achieved this milestone ahead of schedule. Submission for WIC Stage 7 sign off for these two catchments is currently planned for June 2009. Our programme now indicates that Glasgow (with the exception of Airdrie & Coatbridge WP1), and Meadowhead (with the exception of WP6) catchments will achieve the original March 2010 milestone date. The current forecast indicates that Airdrie and Coatbridge WP1 will be delivered in December 2011 and Meadowhead WP6 will be delivered in March 2012.

	UID Strategic Studies	**Delivery Plan Date**	**Actual/ Forecast Date**
G8.41	Technical Studies completed for Portobello and Glasgow catchments	31/12/2006	31/12/2006
G8.42	Technical Studies completed for Meadowhead and Stevenston catchments	31/03/2007	31/03/2007
G8.43	Identify and Agree with SEPA the optimum solutions for Portobello and Glasgow catchments	31/05/2007	31/05/2007
G8.44	Complete detailed design and receive tenders for works required in Portobello and Glasgow catchments (excluding Airdrie and Coatbridge WP1)	31/08/2007	30/11/2008
	Complete detailed design and receive competitive tenders for the works required in Airdrie and Coatbridge WP1	30/04/2010	10/04/2010
G8.45	Identify and Agree with SEPA the optimum solutions for Meadowhead and Stevenston catchments	30/09/2007	30/10/2007
G8.46	Complete detailed design and receive tenders for works required in Meadowhead and Stevenston catchments (excluding Irvine Valley Trunk Sewer WP6)	31/05/2008	31/03/2009
	Complete detailed design and receive competitive tenders for the works required in Meadowhead and Stevenston WP6	30/08/2009	30/08/2009
G8.47	Construction complete at all UIDs in the Portobello catchment	30/09/2009	31/12/2009
	Construction complete at all UIDs in the Glasgow catchment (excluding Airdrie and Coatbridge WP1)	31/12/2009	31/03/2010
G8.48	Construction complete for Airdrie and Coatbridge WP1	31/12/2011	31/12/2011
G8.49	Construction complete at all UIDs in the Meadowhead and Stevenston catchments (excluding the Irvine Valley Trunk Sewer WP6	31/03/2010	31/03/2010
	Construction complete for Meadowhead and Stevenston WP6	31/03/2012	31/03/2012

Glasgow & Portobello Catchment
There are currently 95 projects being delivered in Glasgow and Portobello catchments. Of these, some 70% are simple solutions and were completed by 31 March 2009. The remaining 30%, (currently 32 projects), range from slightly more complex projects involving storage, etc., to projects with typically large diameter pipelines and tunnels through major urban areas of the central belt of Scotland.
Delivery dates for the remaining projects have been revised, with the slightly complex projects (currently 21) now programmed to be completed by 31st March 2010.

The remaining 11 projects are currently in "design freeze" until additional study investigations are completed and can confirm whether a strategic option to incorporate flood relief for the catchment into the preferred solution is possible. These projects are now programmed to be completed by 31st March 2012.

Meadowhead & Stevenston Catchment
There are currently 70 projects being delivered in the Meadowhead and Stevenston catchments. For all Meadowhead and Stevenston projects (apart from WP6), detailed design and receipt of competitive tenders was complete by 31st March 2009.

Of these 70 projects, 55% (currently 38 projects) had simple solutions and were completed by 31 March 2009. Of the remaining 45% of the projects (currently 32), 15 relate to the Irvine Valley Trunk Sewer and are complex solutions, forming a 12km transfer scheme comprising large diameter pipelines, tunnels and associated pumping stations and storm tanks. These complex projects were subject to additional investigation into a new technology option requested by SEPA/Water Industry Commission's Technical Advisor; detailed financial and technical reports were submitted by Scottish Water between December 2008 and March 2009. These reports are under review by SEPA/Water Industry Commission's Technical Advisor and Scottish Water await their conclusions. In the interim, Scottish Water are progressing with the original "transfer" solution option identified in the Meadowhead & Stevenston Value Management (VM report and the projects are programmed to have completed construction by 31 March 2012. The remaining projects (currently 17), are expected to be delivered by the original construction complete milestone date of 31st March 2010.

The data contained in Table G8 shows further revision to the milestones for the strategic drainage area catchments. The dates relate to the completion of all work in the catchment, including the new milestone for completion of construction for Meadowhead/Stevenston 'Irvine Valley Trunk Sewer (WP6)'.

G8.50 – 8.54 Progress with Quality and Standards Sign-off

The process for sign-off for water quality and environmental quality was agreed with DWQR and SEPA in 2006/07. The acceptance dates for all projects are held within the Capital Investment Management System and acceptance paperwork is submitted for each project which is used as the trigger for preparing the output sign-off proformas for submission to the Regulators. Trackers are maintained for these areas and record the acceptance date, date of submission and date of sign-off. The actual sign-off date is recorded in CIMS with a copy of the scanned document being linked to the project.

Odour outputs are signed off by the Scottish Odour Steering Group and actual sign-off dates are recorded in CIMS.

Wastewater Quality, Flow monitoring and Abstraction outputs are signed off by SEPA. The sign-off date for named projects is recorded in CIMS.

Water Quality, Security and Flood Studies outputs are signed off by DWQR.

It was agreed that Strategic Water Capacity and Strategic Wastewater Capacity outputs should be validated by the Reporter to allow Scottish Government sign-off and the methodology has still to be agreed. These projects are not reported in the number reported as requiring sign-off as the profile cannot be established.

There has been an increase in the number of projects reported as requiring sign-off as these are now aligned with the reporting for the OMG graphs with rolling programmes of work reporting in quarterly or monthly blocks of outputs.

The forecast for submission is based on allowing one month from the acceptance date for verification and preparation of paperwork and a further two months for sign-off by the Regulator. Where accepted outputs have not been submitted or received sign-off from the appropriate Regulator within this time-frame, future dates have been used.

41% of the programme has received sign-off by March 2009 with a further 4.5% submitted to the Regulators.

Table G9 Commentary

The figures entered in column 120 (Post 2009-10 total target) are aligned with column 100e (2009-10 total forecast) as there are no serviceability outputs being delivered post March 2010.

G9.1 – 9.6 Water Serviceability Indicators (Annual Measure)

G9.1 – 9.2 % of compliant zones for Iron & manganese

Performance for compliant zones for Iron was 86.05% against an annual target of 87.5%. Performance for compliant zones for manganese was 92.68% against the annual target of 94%.

Achievement of these targets is heavily reliant upon delivery of investment to ensure compliance. We are completing all WQ investigations in the zones and are developing a detailed design of interventions that will reduce the risk of iron and manganese failure as measured at the customer's tap. The DWQR Exceptional Public Health Items funding is being used to promote additional schemes in the networks and a programme of work is being agreed with the DWQR. Those schemes will augment the work already in progress.

G9.3 Number of microbiological failures at water treatment works:

The target for 2008 was to achieve 80 or less microbiological failures at water treatment works. The number of microbiological failures at WTW outturned at 76, within target.

G9.4 Number of Properties on the Low Pressure Register

The overall number of low pressure properties has reduced by 50% from 5,907 in March 2008 to 2,974 in March 2009 predominantly through operational and asset improvements delivered through our Capital Programme. 1,648 properties were removed from the register through data improvement work associated with field logging and 837 properties were added as result of logging work. 217 properties were added as a result of asset deterioration and operational changes. Targeted investment has improved pressure to 2,339 properties during 2008/09. We have out-performed against the original target for March 2009 (3,957) due to a number of projects delivering ahead of schedule.

G9.5 Number of Properties with Unplanned Interruptions > 12 hours

The overall figure for 2008/09 was 5,819 properties which is an increase over 2007/08 figures for this parameter (1,600 properties). This year saw the failure of a 400mm HPPE trunk main which resulted in an extended interruption to the town of Helensburgh (3,884 properties > 12hrs). The repair of large diameter plastic mains is now part of our OPA action plan for 2009/10. A further two incidents in Ayrshire and Fife affected 449 properties and 503 properties respectively. Both were caused by faulty workmanship and we have implemented action plans to prevent these occurring again. These three events accounted for 83% of the properties affected over 12hrs. The target for 2009/10 for this parameter has been set at 1,685 properties and will be delivered by the activities associated with the 2009/10 OPA action plan for interruptions to supply

G9.6 Number of Bursts per 1,000km of mains

We achieved a figure of 204 mains bursts/1000km/yr during 2008/09, meeting the target ceiling of 204. This figure is above what was achieved at the end of March 2008 (169). However, it should be noted that the increased focus on improving the leakage position during 2008/09 has resulted in a greater number of mains bursts being actively identified. This parameter is heavily influenced by the ALC programme.

G9.7 – 9.11 Waste water Serviceability Indicators (Annual Measure)

G9.7 Number of Properties at Risk of Internal Flooding

The number of properties at risk of internal flooding at March 2009 was 383. This outperformed against the Delivery Plan target of 1,400 and was also an improvement against the figure of 563 achieved at March 2008. Improved information and the flood alleviation schemes in the capital programme have contributed to the results.

G9.8 Number of Properties internally Flooded due to other Causes

The number of properties internally flooded due to other causes was 948 (this figure refers to all sewers) against a Delivery Plan target of 3,438. It should be noted that the figures used in G9.8 refer to all sewers (including laterals)

G9.9 Number of Failing Wastewater treatment works

The number of Failing Wastewater treatment works for 2008/09 was 24 against a target of 39. This shows continual improvement since the 2007/08 figure of 30

G9.10 Number of unsatisfactory intermittent discharges

During the report year, we have continued to complete the delivery of both the Q&SII uCSO completion outputs – 40 overall in 2006–09 (2 net in 2008/09) and the Q&SIII UID outputs – 162 overall in 2006-09 (108 net in 2008/09).

In order to be consistent with Line G8.12 ‘Number of Intermittent Discharges Improved’, we have included Dual Manhole and Unsatisfactory Surface Water Outfall UIDs in this line. However, it should be noted that within Line B8.12, such UIDs have been specifically excluded by WICS definitions.

From the agreed March 2008 baseline figure of 931, a total of 136 UIDs, (109 Q&SIIIa outputs + 2 Q&SII outputs + 25 Technical Expression errors) were removed from the overall UID numbers and a total of 146 additions were then incorporated. A further 6 UIDs, which were originally identified in the March 2008 baseline as “additional UIDs”, have subsequently been found to be errors and require to be removed. Accordingly, we are now reporting a final March 2009 baseline position of 935.

With potential minor changes to the 2006-10 programme, and the inclusion of those 2010-14 UID Studies yet to be completed, it is anticipated that further additions and removals will be required. Any such changes will be managed through the WIC 7 Stage Process and/or the agreed Change Process. All changes to the baseline figure will continue to be tracked and a full audit trail will be available for each change.

G9.11 Number of Pollution Incidents

The submission of the 2007/08 Table 1 Return to the Commission by SEPA, reporting 939 pollution incidents, provided the basis for setting the baseline of Scottish Water's 'wastewater' pollution incident performance on which to reset the 'no deterioration' serviceability indicator target. Prior to this they were as set out in the Ministerial Directions [555].

Scottish Water and SEPA have agreed the number of Pollution Incidents for the report year 2008/09 as 830.

During this year we carried out work to raise the profile of pollution incidents within the business and further educate those involved in dealing with pollution incidents, including a series of road shows across Scotland. We are working continuously with SEPA to agree new and/or improved processes to aid more robust reporting of pollution incidents arising from Scottish Water assets. We have also jointly undertaken close scrutiny of the pollution incident records for the report year such that Scottish Water's 'baseline' performance is more accurately understood and reflected.

There is still some uncertainly around the accuracy of this serviceability indicator, however, this is improved from last year due to now having almost 2 years of data and the improvements that have been made over the 2 years, hence the confidence grade has improved marginally from C4 to C3.

H Tables – Asset Inventory

General comments

Modern Equivalent Asset Valuation (MEAV)

In comparison with the previous reporting year (Annual Return 2007/08), we have made five principal changes to the methodology to derive data for completion of the MEAV; this is in line with Scottish Water's 2nd Draft Business Plan (2DBP).

The reasons for movement in the valuation are as follows:

- Updated asset information from the inventories
- Revised cost curves and on-costs (including application of site specific costs)
- Revised methodology for assessing the cost of manholes in sewers
- Increased cost index value (COPI) - the COPI index has been revised from that applied in the Annual Return 2007/08
- Revised land calculation - on-costs have been removed from the valuation of land because the acquisition of land alone (rather than building any assets on that land) does not require material overheads.

Revised cost curves

Since the Annual Return 2007/08 and in line with the 2DBP, Scottish Water has improved the accuracy of our cost curves by incorporating data from the current investment programme (Q&S IIIa). This allows the retirement of old data, where possible, thus ensuring the cost curves are more representative of modern equivalent costs.

In addition the following enhancements have been applied since 2DBP:

- Improved cost curves for sea outfalls and combined sewer and emergency overflow.
- Site specific curves for flow meters and control and monitoring have been modified to ensure that the COPI is not applied twice.

Please refer to Annex 1 for further detail

Revised on costs

On costs have changed from the Annual Return 2007/08 but are consistent with 2DBP.

Please refer to Annex 1 for further detail

Assets

In line with the 2DBP, there is no change to the methodology in reporting asset data for completion of the H tables. The main source of asset data used has been SW's asset inventory systems, primarily Ellipse and GIS. This has been supplemented by gap filling procedures where additional data is required.

Please refer to Annex 1 for further detail

Reporting only operational assets (excluding redundant assets)

As in the previous reported year, the methodology for this year excludes all decommissioned and redundant assets from the reported inventory and valuations and no value is reported in the relevant columns.

Size banding and Summary of Asset Stock

Scottish Water has continued to apply the size banding of the asset stock as per the WIC tables, H7, H8, and H9.

Condition and Performance

There is no requirement to report Condition and Performance of asset stock for this year's return.

COPI

The COPI used for the Annual Return 2008/09 is 162.5 as per the 2DBP. The forecast COPI for March 2009 used in the 2DBP has not been used here as COPI values are constantly changing with the changes in the economy.

Financial Rounding

Some figures within the commentary may be subject to rounding: this will account for minor variances. The reason for the variances is the level below the summary tables use calculations to provide more detailed information.

Table H1: Summary

Summary of gross MEAV

Scottish Water's reported Annual Return 2008/09 gross asset inventory valuation is £43.8 billion. The gross valuation is dominated by the infrastructure valuation of £36.3 billion, comprising 83% of the total. The non-infrastructure total valuation is £7.4 billion, which is 17% of the total valuation. Support services' reported valuation is approximately £183 million representing only 0.4% of the gross asset inventory valuation.

The tables within the commentary for 2DBP relating to sewers and the total gross MEAV were found to be low by £52m; although the actual B tables for the 1DBP in May 2008 had included this £52m. The commentary has been rectified for the Annual Return 2008/09. Scottish Water has now updated all MEAV costs on the commentary to match that of the H tables submitted for 2008/09.

Asset Type	AR08 Gross MEAV (£m)	% of total	AR09 Gross MEAV (£m)	% of total	% change
Water Infrastructure	£11,556.39	31.88%	£12,116.56	27.64%	4.85%
Water Non - Infrastructure	£3,028.91	8.36%	£3,970.21	9.06%	31.08%
Wastewater Infrastructure	£18,692.58	51.57%	£24,150.96	55.10%	29.20%
Wastewater Non-Infrastructure	£2,784.21	7.68%	£3,408.40	7.78%	22.42%
Support Services	£183.93	0.51%	£183.19	0.42%	-0.40%
Total	£36,246.03	100.00%	£43,829.32	100.00%	20.92%

The combined gross valuation of water and wastewater infrastructure assets has increased by £6.02 billion (20%) of the value reported in the Annual Return 2007/08. There has been an increase in the gross valuation for non-infrastructure assets of £1.57 billion (27%).

The total valuation of the asset stock has increased by £1.4 billion from 2DBP. Please refer to Annex 2 for further detail.

Revised cost curves and on costs

Since the Annual Return 2007/08, the accuracy of the cost curves has improved by incorporating data from SW's current investment programme (Q&S IIIa). This allows the retirement of old data, where possible, thus ensuring the cost curves are more representative of the modern equivalent costs. In addition the incorporation of (Q&S IIIa) data has improved the quality of certain cost curves (e.g. control and monitoring equipment), which were determined from previous studies. Likewise, the use of (Q&S IIIa) data to calculate on-costs ensures that we have more up-to-date data relating to the applicable on-costs, suited to our business.

Detailed summary of gross MEAV

Line Ref.	Asset Type	AR08 Gross MEAV (£m)	AR08 % of total	AR09 Gross MEAV (£m)	AR09 % of total	Change (£m)	% change
H1.1	Water treatment works	1,870.39	5.16%	2,256.36	5.15%	385.97	20.64%
H1.2	Water storage	938.67	2.59%	1,309.21	2.99%	370.54	39.47%
H1.3	Water pumping stations	219.85	0.61%	404.64	0.92%	184.79	84.05%
H1.4	Water resources	2,476.23	6.83%	2,603.34	5.94%	127.11	5.13%
H1.5	Water mains	9,080.16	25.05%	9,513.22	21.71%	433.06	4.77%
H1.6	Sewers	18,017.55	49.71%	23,238.10	53.02%	5,220.56	28.97%
H1.7	Sewer structures	363.19	1.00%	336.54	0.77%	-26.65	-7.34%
H1.8	Sea outfalls	311.85	0.86%	576.32	1.31%	264.47	84.81%
H1.9	Sewage pumping stations	730.34	2.01%	798.90	1.82%	68.56	9.39%
H1.10	Sewage treatment works	1,992.68	5.50%	2,504.41	5.71%	511.73	25.68%
H1.11	Sludge treatment facilities	61.19	0.17%	105.09	0.24%	43.90	71.75%
H1.12	Support services	183.93	0.51%	183.19	0.42%	-0.74	-0.40%
	Total	**36,246.03**	**100%**	**43,829.32**	**100%**	**7,583.29**	**20.92%**

The table above shows the increase in the total gross asset valuation of Scottish Water's assets from 2007/08 to 2008/09.

Summary of material movement in gross valuations from 2007/08 to 2008/09

The table below summarises the changes which incorporate a variance greater than +/- £200m or +/- 30% in any one asset category.

Asset Category	Change (£m)	Change (%)
Water mains	433.06	4.77%
Water storage	370.54	39.47%
Water pumping stations	184.79	84.05%
Water treatment works	385.97	20.64%
Sewers	5,220.56	28.97%
Sea outfalls	264.47	84.81%
Sewage treatment works	511.73	25.68%
Sludge treatment facilities	43.90	71.75%
Total	**7,415.02**	

In the following section each of the above asset categories is tabulated showing how the new cost curves, revised on costs and revised land valuation (where applicable) contribute to the change in the overall asset valuation. Note: the tables may be subject to rounding.

Line Ref.	Asset Type	AR08 Gross MEAV (£m)	AR09 Gross MEAV (£m)	Change from AR08 to AR09 (£m)	Changes due to asset stock (£m)	Change due to cost curves (£m)	Change due to on-costs (£m)	Other (£m)
H 1.1	Water Treatment Works	1,870.39	2,256.36	385.97	92.38	-44.34	368.07	Land -30.15
H 1.2	Water storage	938.67	1,309.21	370.57	9.69	39.25	314.38	Land 7.23
H 1.3	Water Pumping Stations	219.85	404.64	184.89	19.22	44.84	96.24	Land 24.50
H 1.4	Water resources (Dams & impounding reservoirs and Raw Water Intakes) and Aqueducts	2,476.23	2,603.34	127.11	148.41	45.42	-66.72	n/a
H 1.5	Water Mains	9,080.16	9,513.22	433.06	109.08	638.59	-314.62	n/a
H 1.6	Sewers including Manholes	18,017.55	23,238.10	5,220.56	185.94	143.55	1,465.05	Manholes 3,426.01
H 1.7	Sewer structures	363.19	336.54	-26.65	-13.77	-20.27	7.40	n/a
H 1.8	Sea outfalls	311.85	576.32	264.47	26.52	114.68	123.27	n/a
H 1.9	Sewer pumping stations	730.34	798.9.	68.56	18.33	-41.62	76.74	Land 15.12

H 1.10	Sewage treatment works	1,992.68	2,504.41	511.73	69.51	1.82	332.11	Land 108.28
H1.1 1	Sludge treatment facilities	61.19	105.09	43.90	9.21	8.83	17.11	Land 8.75
H 1.12	Support services	183.93	183.19	-0.74	-0.74	n/a	n/a	n/a

Valuation movements

It should be noted that the tables below show movements due to new cost curves and revised on-costs. However, the tables also include any changes resulting from updated asset inventories during the report year.

Water Mains valuation movement

Valuation				Change		
Water Mains	**AR08 (£m)**	**AR09 (£m)**	**Difference (£m)**	**New Curves incl COPI (£m)**	**Revised On Costs (£m)**	**Difference (£m)**
Mains potable (nominal bore) [304]	£8,235.38	£8,737.81	£502.43	£711.08	-£208.65	£502.43
Mains other (nominal bore) [305]	£18.31	£25.25	£6.94	£5.14	£1.80	£6.94
Communication pipes (lead) [306]	£331.36	£291.96	-£39.40	-£7.81	-£31.59	-£39.40
Communication pipes (other) [307]	£453.19	£412.20	-£40.99	-£2.80	-£38.19	-£40.99
Water meters [308]	£41.93	£46.00	£4.07	£4.54	-£0.47	£4.07
Total			**£433.05**			**£433.05**

Water Storage valuation movement

Valuation				Change			
Water Storage	**AR08 (£m)**	**AR09 (£m)**	**Difference (£m)**	**New Curves incl COPI (£m)**	**Revised On Costs (£m)**	**Land (£m)**	**Difference (£m)**
Service reservoirs [209]	£923.36	£1,284.59	£361.23	£108.13	£265.39	-£12.28	£361.23
Water towers [210]	£15.32	£24.62	£9.30	£3.25	£6.20	-£0.15	£9.30
Total			**£370.53**				**£370.53**

Water Pumping Stations valuation movement

Valuation				Change			
Water Pumping	AR08 (£m)	AR09 (£m)	Difference (£m)	New Curves incl COPI (£m)	Revised On Costs (£m)	Land (£m)	Difference (£m)
Intake [211]	£66.37	£148.64	£82.27	£31.13	£51.21	-£0.07	£82.27
Source [212]	£17.27	£30.54	£13.27	£4.83	£8.57	-£0.13	£13.27
Booster [213]	£136.20	£225.46	£89.26	£32.30	£58.20	-£1.24	£89.26
Total			**£184.80**				**£184.80**

Sewage Treatment Works valuation movement

Valuation				Change			
Sewage Treatment	AR08 (£m)	AR09 (£m)	Difference (£m)	New Curves incl COPI (£m)	Revised On Costs (£m)	Land (£m)	Difference (£m)
Cess & septic tanks [503]	£141.52	£172.06	£30.54	£8.85	£23.83	-£2.14	£30.54
Preliminary treatment only [504]	£57.57	£47.96	-£9.61	-£5.58	-£2.83	-£1.20	-£9.61
Primary treatment only [505]	£53.78	£85.20	£31.42	£12.72	£19.19	-£0.49	£31.42
Secondary treatment only [506]	£1,406.16	£1,768.75	£362.59	£122.98	£259.77	-£20.16	£362.59
Tertiary treatment only [507]	£333.65	£430.44	£96.79	£33.66	£67.77	-£4.64	£96.79
Total			**£511.73**				**£511.73**

Sludge Treatment Works valuation movement

Valuation				Change			
Sludge Treatment	AR08 (£m)	AR09 (£m)	Difference (£m)	New Curves incl COPI (£m)	Revised On Costs (£m)	Land (£m)	Difference (£m)
Liquid disposal [508]	£2.10	£2.06	-£0.04	-£0.09	£0.09	-£0.04	-£0.04
Cake disposal [509]	£59.10	£103.03	£43.93	£17.64	£26.71	-£0.40	£43.93
Total			**£43.89**				**£43.89**

Principal changes of cost to sewage treatment and sludge treatment works

The valuation of sewage treatment works and sludge treatment works has increased materially because we have fundamentally reassessed all cost curves for components. The largest increase arises from the valuation of control and monitoring equipment (coded "CAMX").

For the Annual Return 2007/08, CAMX was valued as a constant sum per site, implying that the cost of control and monitoring equipment was the same, regardless of the size of the assets being controlled. However, there is now more data available from recent projects which demonstrates that the CAMX cost is a function of the net construction cost of the whole site and was undervalued in 2007/08. The algorithm used is now a power curve, demonstrating economies of scale.

Sewers – Manholes

The total sewer valuation has increased by 28.97%. This is due to the slight increase in asset length, application of cost curves and change in on costs.

Valuation				Change			
Sewers	**AR08 (£m)**	**AR09 (£m)**	**Difference (£m)**	**New Curves incl COPI (£m)**	**Revised On Costs derivation (£m)**	**Manholes including On costs (£m)**	**Difference (£m)**
Critical sewers [401]	£7,207.54	£9,320.15	£2,112.61	-£23.53	£511.25	£1,624.89	£2,112.61
Non-critical sewers [402]	£10,621.25	£13,680.00	£3,058.75	£228.81	£996.03	£1,833.91	£3,058.75
Sewage and sludge pumping mains [403]	£188.76	£237.95	£49.19	£18.21	£30.98	£0.00	£49.19
Total	**£18,017.54**	**£23,238.10**	**£5,220.55**	**£223.49**	**£1,538.26**	**£3,458.80**	**£5,220.55**
% of AR08 value	*100.00%*	*128.97%*	*28.97%*	*1.24%*	*8.54%*	*19.20%*	*28.97%*

The table above highlights the factors which impact on the sewer valuation from AR08 to AR09.

Sea Outfalls valuation movement

Scottish Water has improved the cost curves for sea outfalls from AR08.

Sea Outfalls	**AR08 (£m)**	**AR09 (£m)**	**Diff (£m)**	**New Curves incl COPI (£m)**	**Revised On Costs (£m)**	**Difference (£m)**
Short sea outfalls [406]	£216.23	£452.42	£236.19	£114.78	£121.41	£236.19
Long sea outfalls [407]	£95.62	£123.90	£28.28	£10.98	£17.30	£28.28
Total			**£264.47**			**£264.47**

The cost curve used for AR08 was:

((4260.226*((length/1000)^0.853704))*((diameter/1000)^1.200778)*1000)*161/162

The cost curve for AR09 is:

4260226 * (diameter ^ 1.200778) * (Length ^ 0.853704)

Summary and comparison of net valuations from 2007/08 to 2008/09

The total net depreciated value of Scottish Water's non-infrastructure asset inventory (including support services depreciable assets) is £3.85 billion.

Line Ref.	Asset Type	AR08 Net MEAV (£m)	% of total	AR09Net MEAV (£m)	% of total	Change (£m)	% change
H1.1	Water treatment works [101]	£1,079.07	33.26%	£1,243.89	32.33%	£164.82	15.27%
H1.2	Water storage [102]	£499.45	15.39%	£662.62	17.22%	£163.17	32.67%
H1.3	Water pumping stations [103]	£110.30	3.40%	£167.93	4.37%	£57.63	52.25%
H1.9	Sewage pumping stations [109]	£399.71	12.32%	£399.02	10.37%	-£0.69	-0.17%
H1.10	Sewage treatment works [110]	£1,010.41	31.14%	£1,201.77	31.24%	£191.36	18.94%
H1.11	Sludge treatment facilities by disposal type [111]	£40.07	1.23%	£64.03	1.66%	£23.96	59.79%
H1.12	Support services [112]	£105.74	3.26%	£107.72	2.80%	£1.98	1.87%
	Total	**£3,244.75**	**100.00%**	**£3,846.98**	**100.00%**	**£602.23**	**18.56%**

The table above shows the changes to the net valuation by asset category.

The table below shows changes to the gross and net valuation by asset category from AR08 to AR09.

Line Ref.	Asset Type	AR08 Gross MEAV (£m)	AR09 Gross MEAV (£m)	Diff. in Gross (£m)	AR08 Net MEAV (£m)	AR09 Net MEAV (£m)	Diff. in Net (£m)
H1.1	Water treatment works [101]	£1,870.39	£2,256.36	£385.97	£1,079.07	£1,243.89	£164.82
H1.2	Water storage [102]	£938.67	£1,309.21	£370.54	£499.45	£662.62	£163.17
H1.3	Water pumping stations [103]	£219.85	£404.64	£184.79	£110.30	£167.93	£57.63
H1.9	Sewage pumping stations [109]	£730.34	£798.90	£68.56	£399.71	£399.02	-£0.69
H1.10	Sewage treatment works [110]	£1,992.68	£2,504.41	£511.73	£1,010.41	£1,201.77	£191.36
H1.11	Sludge treatment facilities by disposal type [111]	£61.19	£105.09	£43.90	£40.07	£64.03	£23.96
H1.12	Support services [112]	£183.93	£183.19	-£0.74	£105.74	£107.72	£1.98
	Total	**£5,997.05**	**£7,561.80**	**£1,564.75**	**£3,244.75**	**£3,846.98**	**£602.23**

Although the gross MEAV has increased for sewage pumping stations, the net MEAV shows a slight decrease. One reason for this difference is the proportional allocation of costs between civil and mechanical components. After further analysis of the Engineering Estimating System (EES), it was deemed that certain assets had a higher mechanical component, and these components depreciate more rapidly than civil components. This change leads to a more rapid depreciation of sewage pumping stations.

For example, screens were allocated 70% civil / 30% mechanical in the Annual Return 2007/08. We now recognise that the cost of these components is predominantly mechanical and in 2008/09 the allocation is 0% civil / 100% mechanical.

Summary of Confidence grades (MEAV)

There has been no movement in Confidence Grade for MEAV from AR08 to AR09.

The MEAV confidence grade is dominated by the absence of data at certain levels within the asset inventories resulting in C4 grades for non-infrastructure assets and B4 or C4 for infrastructure.

Summary of Confidence grades (Asset Stock)

The majority of Confidence Grades for the asset stock have not changed since 2007/08, where a changed has occurred, it is detailed in the following section.

The CGs applied to the asset stock is a reflection of the asset inventories.

Table H2: Water Non Infrastructure

Where the Overview of Change in the following tables is categorised as "Other", these assets have been subject to ongoing maintenance or movement in operational status. The figure reported here is the net difference of sites.

H2.1-2.8: Water Treatment Works

Asset Stock

The total number of Water Treatment Works in this reporting year is 281. This is an overall reduction of 17 from the 298 reported in the Annual Return 2007/08.

WTW Sites	Number
AR08 Sites Reported	298
Sites Non-Operational AR08-09	-20
Sites Non-SW Owned AR08-09	0
Newly Reported AR08-09	3
AR09 Sites Reported	**281**

Overview of Change	Number
Sites Closed	-20
Change of Owner	1
New Sites	2
Other	0
Total	**-17**

The net change in the number of reported WTW Sites is summarised in the tables above.

Asset valuation

The asset valuation for water treatment works for the reporting year has risen from £1,870 million to £2,256 million. This £385.97m increase reflects the movement in asset stock

Water Treatment Works	AR08	AR09	Asset Diff	MEAV Net Diff £m
WTW Sites	**298**	**281**	**-17**	**-£21.13**
WTW Sub Assets	**8764**	**9285**	**521**	**£407.10**
			Total Diff	**£385.97**

The table above shows the net MEAV and asset movement between 2007/08 and 2008/09.

The primary asset valuation increase is influenced by the number and type of new sub assets at each site. The main influence on the increase remains the on-costs.

Changes in confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H2.9 and 2.10: Water Storage

Asset Stock

The total number of Water Storage assets in this reporting year is 1,438. This is an overall reduction of 20 from the 1,458 reported in 2007/08.

WS Sites	Number
AR08 Sites Reported	1,458
Sites Non-Operational AR08-09	-34
Sites Non-SW Owned AR08-09	0
Newly Reported AR08-09	14
AR09 Sites Reported	**1,438**

Overview of Change	Number
Sites Closed	-23
Change of Owner	0
New Sites	4
Other	-1
Total	**-20**

The net change in the number of reported WST Sites is summarised in the tables above.

Asset valuation

The asset valuation for water storage for the reporting year has risen from £939 million to £1,309 million. The increase reflects the movement in asset stock and the change to cost curves and on costs.

Changes in confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H2.11-2.13: Water Pumping Stations

Asset Stock

The total number of Water Pumping Stations in this reporting year is 683. This is an overall increase of 20 from the 663 reported in 2007/08.

WPS Sites	Number
AR08 Sites Reported	663
Sites Non-Operational AR08-09	-12
Sites Non-SW Owned AR08-09	-2
Newly Reported AR08-09	34
AR09 Sites Reported	**683**

Overview of Change	Number
Sites Closed	-4
Change of Owner	0
New Sites	16
Other	8
Total	**20**

The net change in the number of reported WPS Sites is summarised in the tables above.

Asset valuation

The asset valuation for the reporting year has risen from £220 million to £405 million from the previous year. The increase reflects the movement in asset stock and the change to cost curves and on costs.

Changes in confidence grades

On line H2.11, there has been a reported decrease in CG from B3 to B4 in line with the 2DBP. This reflects present knowledge on capacities of water pumping stations.

On line H2.12, there has been a reported increase in CG from B4 to B3 in line with the 2DBP. This reflects present knowledge on capacities of water pumping stations.

On line H2.13, there has been a reported decrease in CG from B3 to B4 in line with the 2DBP. This reflects present knowledge on capacities of water pumping stations.

Table H3: Water Infrastructure

Where the Overview of Change in the following tables is categorised as "Other", these assets have been subject to ongoing maintenance or movement in operational status. The figure reported here is the net difference of sites.

H3.1: Water Resources - Dams & Impounding Reservoirs

Asset Stock

The total number of Dams & Impounding Reservoirs in this reporting year is 238. This is an overall reduction of 8 from the 246 reported in 2007/08.

DIR Sites	Number
AR08 Sites Reported	246
Sites Non-Operational AR08-09	-12
Sites Non-SW Owned AR08-09	0
Newly Reported AR08-09	4
AR09 Sites Reported	**238**

Overview of Change	Number
Sites Closed	-4
Change of Owner	0
New Sites	4
Other	-8
Total	**-8**

Asset valuation

The asset valuation for the reporting year has increased from £1,341 million to £1,441 million from 2007/08. The increase reflects the movement in asset stock.

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.2: Water Resources – Raw Water Intakes

Asset Stock

The total number of raw water intakes in this reporting year is 351. This is an overall reduction of 18 from the 369 reported in 2007/08.

RWI Sites	Number
AR08 Sites Reported	369
Sites Non-Operational AR08-09	-24
Sites Non-SW Owned AR08-09	-3
Newly Reported AR08-09	9
AR09 Sites Reported	**351**

Overview of Change	Number
Sites Closed	-22
Change of Owner	-3
New Sites	9
Other	-2
Total	**-18**

Asset valuation

The asset valuation for the reporting year has increased from £22.9 million to £23.2 million from the Annual Return 2007/08.

For the MEAV methodology, costs have been determined for a representative set of modern equivalent assets. The costs were developed by Berkeley Consultants who estimated the structure cost on the basis of labour, plant and materials only. Included in the cost of the intake are concrete costs of the weir and the intake chamber, as well as all screens and valves and contractors preliminaries.

The cost curve used to value Raw Water Intakes is as follows:

y = (9.5252 + 3.9075 * Xfac^0.25)^4, where y is cost (£) and Xfac is yield (Ml/d)

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.3: Water Resources – Raw Water Aqueducts

Asset Stock

The total length of Raw Water Aqueducts in this report year is 1,794km. This is an increase from the 1,780km in 2007/08. The 0.8% increase arises principally from a net balance of 66km removed, 104km added and 24km transferred to H3.5 as raw water supplies to industry as part of ongoing maintenance of the GIS system.

RWA length (km)	AR08	AR09	Change
Reported in AR08	**1,780**		
AR08 Still Operational		1,690	-90
Added in AR09		104	104
Total	**1,780**	**1,794**	**14**

Asset valuation

The asset valuation for the report year has increased from £1,112 million to £1,139.6 million.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.4: Water Mains – Mains Potable

Asset Stock

The total length of potable mains in the report year is 47,215km. This is an increase from 47,163km in 2007/08. The slight increase is principally due to new mains being added to the register.

Water Mains length (km)	AR08	AR09	Change
Reported in AR08	**47,163**		
AR08 Still Operational		46,001	-1,162
Added in AR09		1,214	1,214
Total	**47,163**	**47,215**	**52**

Asset valuation

The asset valuation for the report year has increased from £8,235.4 million to £8,737.8 million. The increase in the valuation can be attributed to changes in length, cost curves and on costs.

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.5: Mains Other

Asset Stock

The total length of other mains in the report year is 154km. This is a net increase of 6km from 148km in 2007/08. The additional 23km of raw water mains supplying industry is reported here, while 17km of fire mains recorded as private has been removed. Larger raw mains replacing smaller fire mains lead to a disproportionate rise in length of this small inventory.

Mains other length (km)	AR08	AR09	Change
Reported in AR08	**148**		
AR08 Still Operational		131	-17
Added in AR09		23	23
Total	**148**	**154**	**6**

Asset valuation

The asset valuation for the report year has increased from £18.3 million to £25.3 million. The increase in the valuation can be attributed to changes in length, cost curves and on costs.

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.6: Communication Pipes (Lead)

Asset Stock

The total number of lead communication pipes in the report year is 781,614. This is a decrease of 7,854 from the Annual Return 2007/08. This 1% drop is due to:

- Updating of the communication pipe inventory from recent lead surveys (i.e. water quality monitoring) which have also reduced the inventory
- Lead replacement scheme, which replaced customers' lead communication pipes at their request.

Comm Pipes Lead (No)	AR08	AR09	Change
Reported in AR08	**789,468**		
AR08 Still Operational		781,614	-7,854
Added in AR09		0	
Total	**789,468**	**781,614**	**-7,854**

Asset valuation

The asset valuation for the report year has decreased from £331.4 million to £292.0 million. This reduced valuation results from the change in the number of pipes, cost curve and on costs.

Changes in confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.7: Communication Pipes (other)

Asset Stock

The total number of other communication pipes (i.e. not lead) in the report year is 1,103,351. This is an increase of 23,602 from the 1,079,749 in the previous reporting year. This 2.2% increase is a combination of more up-to-date address point data and transfers from the lead inventory through replacement and assessment.

Comm pipes other (No)	AR08	AR09	Change
Reported in AR08	**1,079,749**		
AR08 Still Operational		**1,079,749**	0
Added in AR09		23,602	23,602
Total	**1,079,749**	**1,103,351**	**23,602**

Asset valuation

Although the number of communication pipes has risen, the asset valuation for the report year has decreased from £453.2 million to £412.2 million. This reduced valuation results from the change in the cost curve and on-costs.

Changes in confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H3.8: Water Meters

Asset Stock

The total number of water meters in this reporting year is 130,144. This is an increase of 19,081 from the 111,063 in the previous reporting year. This increase is mainly due to the meter installation programme for non-household properties.

Water Meters (No)	AR08	AR09	Change
Reported in AR08	**111,063**		
AR08 Still Operational		107,759	-3,304
Added in AR09		22,385	22,385
Total	**111,063**	**130,144**	**19,081**

Asset valuation

The asset valuation for the report year has increased from £41.9 million to £46.0 million. This increase is explained by the installation of additional meters.

Changes in confidence grades

There had been a reported decrease in Confidence Grade from A3 to A4 for the asset stock from the Annual Return 2007/08 and 2DBP. This decrease was due to the migration of data following business separation. We have increased the Confidence Grade back to A3 for the Annual Return 2008/09.

Table H4: Wastewater Infrastructure

H4.1: Sewers – Critical Sewers

Asset Stock

The total length of Critical Sewers in the report year is 11,502km, a net increase of 46km from the reported length in 2007/08. The increase in length is due the addition of new critical sewers and minor transfers from non-critical sewers. CCTV studies have provided improved data on sewer depths and sizes.

Critical Sewer length (km)	AR08	AR09	Change
Reported in AR08	**11,456**		
AR08 Still Operational		11,408	-48
Added in AR09		94	94
Total	**11,456**	**11,502**	**46**

Asset valuation

The asset valuation for the report year has increased from £7,207.5 million to £9,320.2 million. The calculation of manholes is the main reason for the increase in Critical Sewers; this is in line with 2DBP. Part of the increase is related to the additional length of critical sewer and some larger diameter pipes (infill data has been replaced with surveyed pipe diameters).

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H4.2: Sewers – Non Critical Sewers

Asset Stock

The total length of Non Critical Sewers in the report year is 37,643km, an increase of 284km from the 37,359km in 2007/08. This increase reflects new data from sewer flooding (Other Causes) and surveys. Inventory figures for lateral sewers constitute 91km of the net increase. Better categorisation on length of lateral sewer to number of domestic and commercial properties is now available.

Non Critical Sewer length (km)	AR08	AR09	Change
Reported in AR08	**37,359**		
AR08 Still Operational		37,283	-76
Added in AR09		360	360
Total	**37,359**	**37,643**	**284**

Asset valuation

The asset valuation for the report year has increased from £10,621 million to £13,680 million. The calculation of manholes is the main reason for the increase in non critical sewers; this is in line with 2DBP. This rise is also explained by the change to cost curves, on costs and the increase in the length of non critical sewers.

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H4.3: Sewers – Sewage and sludge pumping mains

Asset Stock

The total length of sewage and sludge pumping mains in the report year is 994km, an increase from the 948km in 2007/08. This increase results from the addition of data from new sewage pumping stations and includes inventory improvements.

Sewage and sludge pumping mains length (km)	AR08	AR09	Change
Reported in AR08	**948**		
AR08 Still Operational		935	-13
Added in AR09		59	59
Total	**948**	**994**	**46**

Asset valuation

The asset valuation for the report year has increased from £188.8 million to £238.0 million. The increase is due to the change of cost curves, on costs and the increase in the length of sewage and sludge pumping mains.

Change in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H4.4 and 4.5: Sewer Structures: CSO's and Other Sewer Structures

Asset Stock

The number of combined sewer and emergency overflows in the report year is 4,164, a total reduction of 139 from the Annual Return 2007/08. This reduction is due to the removal of assets from the CSO inventory. These assets were found to be bifurcation chambers which were removed from reporting for the Annual Return 2008/09.

CSO's (No)	AR08	AR09	Change
Reported in AR08	**4,303**		
AR08 Still Operational		4,164	-139
Added in AR09		0	+0
Total	**4,303**	**4,164**	**-139**

The number of Other Sewer Structures is 312, unchanged from 2007/08. Bifurcation chambers are not considered large enough assets for reporting within sewer structures.

Asset valuation

The asset valuation for the reporting year has decreased from £363.2 million to £336.5 million. The decrease is a combination of the reduction of 139 sewer structures, change to cost curve and on costs.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H4.6 and 4.7: Sea Outfalls: Short and Long Sea Outfalls

Asset Stock

The number of Sea Outfalls in the report year is 1,621, a net increase of 167 from the Annual Return 2007/08. The number of Long Sea Outfalls is 32, down by 3 from 2007/08. Inventory continues to be replaced and new assets created as part of marine quality programmes.

Total Sea Outfalls (No)	AR08	AR09	Change
Reported in AR08	**1,454**		
AR08 Still Operational		1,374	-80
Added in AR09		247	247
Total	**1,454**	**1,621**	**167**

Asset valuation

The asset valuation for the reporting year has increased from £311.9 million to £576.3 million. This increase is explained by the addition of 167 assets, cost curve and on cost changes.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

Table H5: Wastewater Non-Infrastructure

Where the Overview of Change in the following tables is categorised as "Other", these assets have been subject to ongoing maintenance or movement in operational status. The figure reported here is the net difference of sites.

H5.1 and H5.2: Sewage Pumping Stations

Asset Stock

The total number of Sewage Pumping Stations in this reporting year is 1,971. This is an increase of 75 from the 1,896 reported in the Annual Return 2007/08.

SPS Sites	Number
AR08 Sites Reported	1,896
Sites Non-Operational AR08-09	-5
Sites Non-SW Owned AR08-09	-3
Newly Reported AR08-09	83
AR09 Sites Reported	**1,971**

Overview of Change	Number
Sites Closed	-1
Change of Owner	7
New Sites	37
Other	32
Total	**75**

The net change in the number of reported SPS Sites is summarised in the tables above.

Asset valuation

The asset valuation for the report year has increased from £730.3 million to £798.9 million. This increase is confirmed by the additional 75 sewage pumping stations, changes to cost curves and on costs.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H5.3 to 5.7: Sewage Treatment Works

Asset Stock

The total number of Sewage Treatment Works in this reporting year is 1,874. This is an overall increase of 4 from the 1,870 reported in the Annual Return 2007/08.

STW Sites	Number
AR08 Sites Reported	1,870
Sites Non-Operational AR08-09	-14
Sites Non-SW Owned AR08-09	0
Newly Reported AR08-09	18
AR09 Sites Reported	**1,874**

Overview of Change	Number
Sites Closed	-2
Change of Owner	0
New Sites	10
Other	-4
Total	**4**

The net change in the number of reported STW Sites is summarised in the tables above.

Asset valuation

The asset valuation for the report year has increased from £1,992.7 million to £2,504.4 million. This increase is confirmed by the additional 4 sewage treatment works, cost curves and on costs.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H5.8 and 5.9: Sludge Treatment Facilities

Asset Stock

The total number of sludge treatment facilities in the reporting year is 22, no change from the Annual Return 2007/08.

STC Sites	Number
AR08 Sites Reported	22
Sites Non-Operational AR08-09	0
Sites Non-SW Owned AR08-09	0
Newly Reported AR08-09	0
AR09 Sites Reported	**22**

Asset valuation

The asset valuation for the report year has increased from £61.2 million to £105.1 million. The increase in valuation is due to the changes in cost curves and on costs.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H6.1- H6.3: Support Services

Asset Stock

There are 3 fewer depots in 2008/09 due to closures, lease termination and more accurate inventory data. The number of Control Centres and Offices remain unchanged whereas there is 1 less laboratory.

Building Type	AR08	AR09
Control Centre	1	1
Depot	55	52
Lab	5	4
Offices	10	10

Asset valuation

The asset valuation for the report year has decreased from £109.6 million to £101.6 million.

Condition grade has been used to calculate the remaining life of Non-operational Buildings, which all have an asset design life of 60 years. The remaining asset life was used to calculate the Net MEAV, which has reduced by £4.8m due to closures.

Leased assets are not specifically excluded in the H6.1 to H6.3 line definitions (unlike H6.7) therefore, to be consistent with the Annual Return 2007/08, they have been included. As some of the individual buildings have a high value, the following table provides details.

Leased assets (included in Table H6)			
Building Name	**Asset Type**	**Gross MEAV (£m)**	**Net MEAV (£m)**
Enterprise House	Depot	0.572	0.231
Ardelve Depot	Depot	0.057	0.037
Dornoch Area Office & Depot	Depot	0.572	0.498
Kilmory Depot	Depot	0.572	0.231
Orkney Area Office	Depot	0.572	0.231
Gremista Depot	Depot	0.572	0.231
Orkney (Kirkwall) Laboratory	Lab	8.266	5.335
Juniper House Laboratory	Lab	8.266	7.200
Riverside House Office	Office	6.683	4.313
Watermark Office	Office	5.722	4.984
Torridon House Office	Office	8.583	3.465

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H6.4 - Vehicles & plant

Asset Stock

The total number of vehicles in this reporting year is 1695. This is an increase of 185 from the 1510 reported in 2007/08.

Asset valuation

The increase in the number of vehicles results in a rise of the Gross valuation from £31.3 million to £35.7 million.

Net values were calculated based on the age and design life of each vehicle or plant using the same method as the Annual Return 2007/08.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H6.5 Telemetry systems

Asset Stock

The 4,031 telemetry sites reported show an increase from 3,882 as reported in 2007/08. This now equates to having 35.7% coverage of Scottish Water's operational sites. In addition it shows a 6.65% increase in telemetry coverage as a result of new equipment installed during the year.

Asset valuation

The asset valuation for the report year has increased from £17.3 million to £18.4 million. As no individual telemetry costs were available, the gross MEAV was based on the same standard unit valuation as used in 2007/08.

Net MEAV is based on remaining asset life calculated from the condition grade matrix detailed in Annex 1. All telemetry outstations were assigned a short (6-15 year) design life, as recommended in the WIC guidance notes. 2007/08 telemetry was categorised in the very short (<5 year) design life, however the overall net valuation has not changed considerably despite this.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H6.6 - Information systems

Asset Stock

Laptops and workstations from Band 1 are now separated into Bands 1 and 2, split out from the Annual Return 2007/08. 2008/09 reflects a net increase of 401 due to new purchases.

Bands 2 and 3 from 2007/08 have now been combined into Band 3 for 2008/09. The movement for 2008/09 is a net decrease of 13.

Asset valuation

The asset valuation for the report year has decreased from £11.6 million to £9.8 million.

The total Net MEAV has approximately halved, this is due to many assets having exceeded their normal expected life and this results in the Net MEAV for these assets being zero.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

H6.7 - Other Non-Operational Assets

Asset Stock

There are 2 fewer houses reported as being owned by Scottish Water in 2008/09. 2 sawmills previously reported in 2007/08 are no longer in operation. Details of the remaining asset categories are contained in the following table.

Type of property	Count	Gross MEAV (£m)	Net MEAV (£m)
Houses	49	£5.096	£1.953
Farms and Grazing land	10	£12.590	£12.590
Total	**59**	**£17.686**	**£14.543**

Asset valuation

The asset valuation for the report year has increased from £14.1 million to £17.7 million. The increase in valuation is due to improved information on land.

Farm and grazing land values were based on new valuations carried out this year.

Changes in Confidence grades

There has been no movement in Confidence Grade for the asset stock from 2007/08 to 2008/09; this is consistent with the CG reported in 2DBP.

Annex 1 to Section H – MEAV methodology updates

General Comments

Scottish Water has undertaken a review of the 2007/08 submission taking account of comments received. As a result of this review, refinements have been made which affect the generation of the Section H tables. The areas which differ from the 2007/08 submission are summarised below in line with 2DBP:

	Appendix B	Software Enhancement	Cost Curves	Manholes	Land Cost	Site Specific On Costs	On Costs	COPI	Asset Lives	Civil / Mech Split
Water Non-Infrastructure	H1.1	☑	☑	☒	☑	☑	☑	☑	☑	☑
	H1.2	☑	☑	☒	☑	☑	☑	☑	☑	☑
	H1.3	☑	☑	☒	☑	☑	☑	☑	☑	☑
Wastewater Non-Infrastructure	H1.9	☑	☑	☒	☑	☑	☑	☑	☑	☑
	H1.10	☑	☑	☒	☑	☑	☑	☑	☑	☑
	H1.11	☑	☑	☒	☑	☑	☑	☑	☑	☑
Water Infrastructure	H1.4	☒	Partial	☒	☒	☒	Partial	☑	☒	☒
	H1.5	☒	☑	☒	☒	☒	☑	☑	☒	☒
Wastewater Infrastructure	H1.6	☒	☑	☑	☒	☒	☑	☑	☒	☒
	H1.7	☒	☑	☒	☒	☒	☑	☑	☒	☒
	H1.8	☒	☑	☒	☒	☒	☑	☑	☒	☒
Support Services	H1.12	☒	☒	☒	☒	☒	☒	☑	☒	☒

Streamlining of processing software

- merging of multiple databases into a single database
- enhanced master database to reflect improved assumptions
- improved efficiency and stability of software
- updated procedures and documentation

Revised cost curves

- cost curves have been reviewed and revised and these new curves have been applied to the MEAV model
- infrastructure assets – due to an inconsistency in versions of the sewer curve for "Sewer Pipe laying in Grassland greater than 2m deep but less than 4m deep", the following asset types were incorrectly valued and therefore the infrastructure gross valuation, for the Annual Return 2007/08, was undervalued in the following areas:

    - critical sewers
    - non-critical sewers
    - raw water aqueducts

Manholes

- revised percentage used for the gross MEAV calculation of manholes

Land cost

- valuation of land assets is based on a percentage of non-infrastructure assets which attract on-costs; for the Annual Return 2007/08, land valuation was based on these assets inclusive of the on-cost; we believe the value of land is better reflected using the net construction cost and therefore no on-costs are applied to land for the Annual Return 2008/09.

Revised on-costs

- on-costs have been reviewed and revised and these new on-costs have been applied to the MEAV model
- site specific assets have been identified and separate on-costs generated

Revised asset life categories

- asset life has been amended to reflect the recommendation as stated in the WIC guidance notes; the asset life was previously based on those used in the fixed asset register

Civil and Mechanical split

- following review of the Annual Return 2007/08, these have been aligned with EES costing

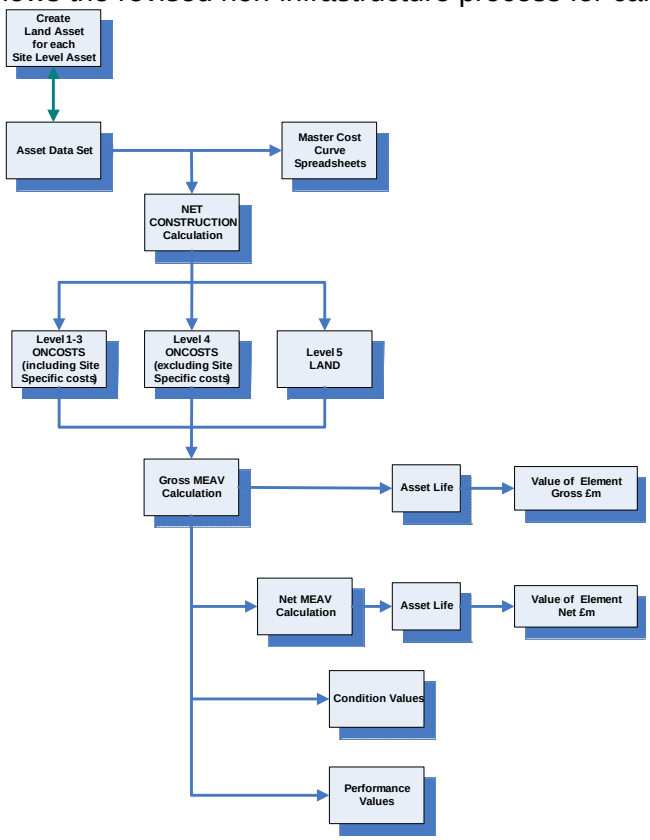
Assets

- addition of 14 sub-assets
- method of valuing manholes within sewer infrastructure

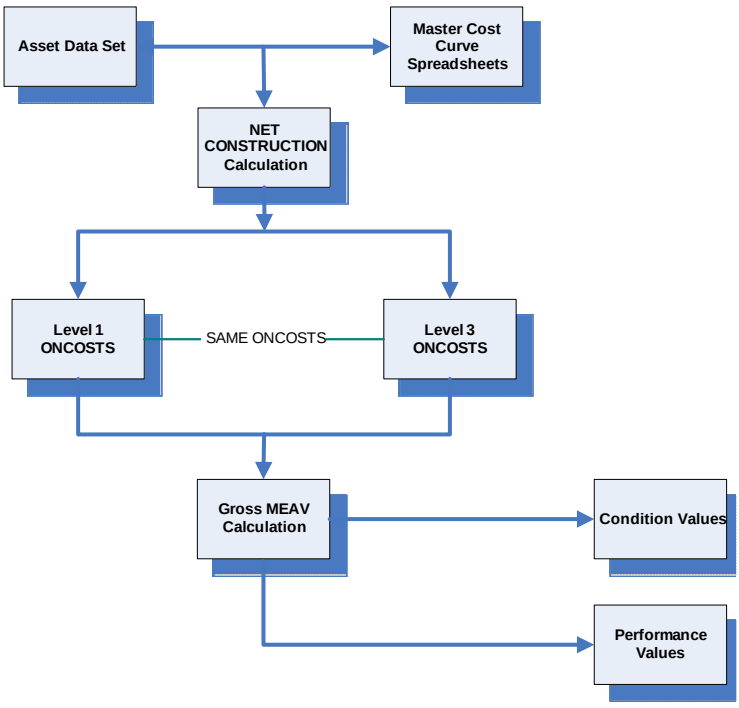
Streamlining of processing software

To calculate MEAV, cost curves and curve conversions are matched to asset types.

The diagram below shows the revised non-infrastructure process for calculating MEAV.



The diagram below shows the revised infrastructure process for calculating MEAV.



Non-Infrastructure

Assets

The generation of land assets has not changed from the Annual Return 2007/08 to the Annual Return 2008/09. A land asset has been created for each site level asset. This enables Scottish Water to calculate a land value for every non-infrastructure site.

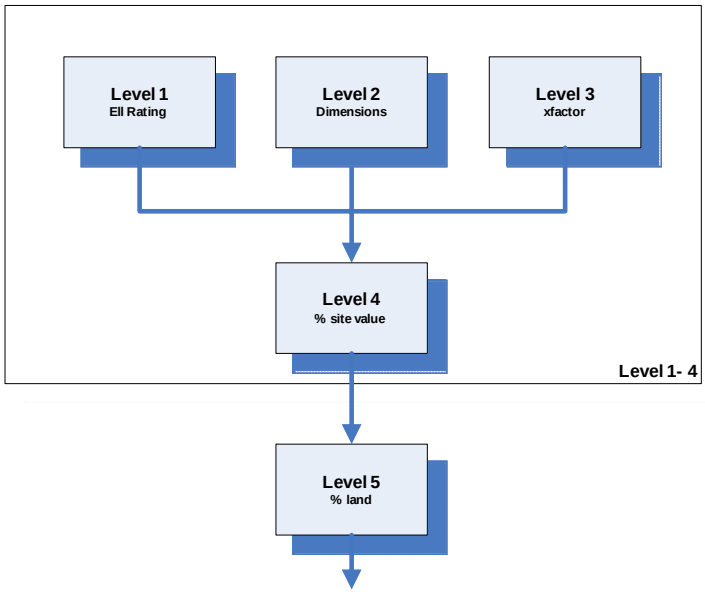
There has been only a minor change to the extracted asset data used within the calculation of the Annual Return 2008/09. This change concerns the addition of the following sub assets which have now been included.

SiteRef	AssetRef	AssetName	Asset Type	SiteType
GWS000373	005000019881	BOREHOLE PUMP	WPSB	GWS
RWP000002	005000576217	RAW WATER PUMPING	WPSX	RWP
SPS001175	005000576218	SEWAGE PUMPING	SPSX	SPS
SPS001248	005000076159	FOUL PUMP 1	SPSX	SPS
SPS001729	005000030368	FOUL SUMP PUMP	SPSI	SPS
TWP000270	005000071661	WATER PUMP STATION, GENERAL	WPSX	TWP
TWS000243	005000054571	COVERED STORAGE TANK NO1	CSTX	TWS
TWS000825	005000072466	STOER SR CVD STRG TNK	CSTX	TWS
TWS002208	005000045524	COVERED STORAGE TANK	CSTS	TWS
TWS003467	005000078572	COVERED STORAGE	CSTX	TWS
WTW000340	005000326739	INVERNESS FILTER 2	SBCX	WTW
WTW000340	005000326740	INVERNESS FILTER 3	SBCX	WTW
WTW000340	005000326741	INVERNESS FILTER 4	SBCX	WTW
WTW000340	005000326751	INVERNESS FILTER 1	SBCX	WTW

NOTE: these are not additional site assets.

Model for Net Construction

The following business rules were applied to generate the net construction value. These are defined in the diagram below:



- **Level 1** – Uses Ellipse ratings of each asset at unit level.
- **Level 2** – Uses the dimensions of the asset (for example; height, width, depth)
- **Level 3** – Uses a conversion of the assets x factor.
- **Level 4** – "Site Specifics" Uses a percentage split of the total site value. (Level 1-3)
- **Level 5** - "Land" Uses a percentage split of the total site value. (Level 1-4) (=Land value@3.5%)

Once a net construction value has been generated for each asset, on-costs are applied**,** which in turn provide the gross MEAV**.**

Site specifics relate not only to variations in project scope; due to particular construction requirements of the site; the costs associated with construction which are not directly associated with an asset.

On-costs are applied using a compounded percentage of each of the separate costs; this is carried out in two separate ways.

On Costs are the costs which can be attributed to the management of a construction build, such as construction management, SWS management, Scottish Water management, design and risk.

All sites have a consistent set of site specifics, such as fences & gates; site cabling; internal roads & paving, landscaping, and rather than identifying each separately they have been amalgamated into a Compounded Percentage to be applied consistently to each asset.

- **Level (1-3)** - Total on-cost applied *including* site specific costs
- **Level (4)** - Total on-cost applied *excluding* site specific costs
- No on-costs are applied to land assets

Gross MEAV

The values of each of the levels (1-5) plus on-costs are totalled and the gross MEAV is generated.

Net MEAV

Net MEAV is generated using the gross value and the remaining life of each asset.

Remaining life is calculated as follows:

% Remaining Life Span of Asset = Life Span of Asset minus **Asset Age**

The net MEAV calculation utilises three dates from the asset inventory to calculate the age and the % remaining life of each asset:

- Site refurbishment date
- Installed date (unit level)
- Site install date (site level)

If the age of the asset cannot be derived using the above matrix, the condition values are then utilised to calculate an age.

The age value is derived via a lookup table linked to each condition grade and provides the % remaining life of each asset. The % remaining life is consistent across all asset life bandings. i.e. 5,10,20 years, etc. Asset life categories are consistent with those recommended by the WIC. The table below shows the link between condition grade and % remaining life.

Condition Grade	Remaining Life % of Service Life
1	87.50%
2	62.50%
3	37.50%
4	12.50%
5	0.00%

Infrastructure

Assets

There are no land assets associated with infrastructure.

The infrastructure data used within Annual Return 2009 has been extracted from Scottish Water's asset inventories.

Sewer Manholes

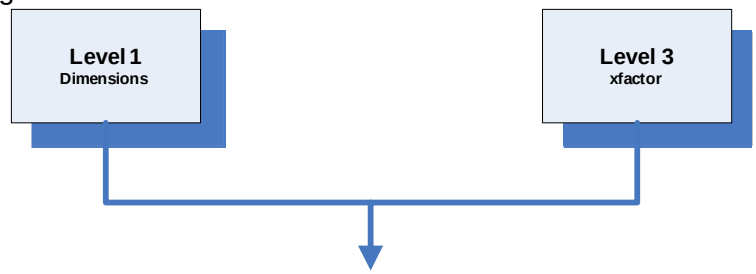
The calculation of manholes, within the sewer infrastructure, has been revised from the Annual Return 2007/08. The Annual Return 2007/08 gave a total sewer valuation which included an estimated value, based on the output from the MEAV project undertaken by Jacobs, of around 2.6% for critical sewer manholes and 2.4% for non-critical sewer manholes.

Statistical representation indicates that Scottish Water should include a 24.06% valuation for critical sewer manholes and 17.96% valuation for non-critical sewer manholes. These percentages have been applied to the MEAV calculation for the Annual Return 2008/09 wastewater infrastructure; this is in line with the 2DBP.

Model for Net Construction

To calculate the MEAV, cost curves are matched to asset types. Only one infrastructure asset type requires a curve conversion, this being Combined Sewer Overflows (CSOX).

The following business rules are applied to generate the net construction value; these are defined in the diagram below:



- **Level 1** – Uses the dimensions of the asset (for example; length, diameter, depth)
- **Level 3** – Uses a conversion of the asset's x factor.
- No Land costs are applied to Infrastructure assets

Once a net construction value has been generated for each asset, on-costs are applied**,** which in turn provide the gross MEAV.

On-costs are applied using a compounded percentage of each of the separate costs;

- **Level (1 & 3)** has the total on-cost applied.

Gross MEAV

The values of each of the levels (1 & 3) plus on-costs are totalled and the gross figures are generated.

Net MEAV

There is no net MEAV calculation required for infrastructure assets.

Support Services

The support services data used within Annual Return 2009 has been extracted from Scottish Water's asset inventories.

Revised cost curves

There are three areas for consideration within this section.

- cost algorithms
- application of the cost algorithms
- Level 3 – conversion formula

The cost algorithms used within the MEAV are supplied by the Cost Management Team (CMT).

The cost curves developed by the CMT are:

- Unit curve - uses the asset yardstick to calculate the asset cost
- Process curve - identifies the total asset type yardstick for each site to determine the total cost; total cost is then distributed across each asset of the same type

The Level 3 – conversion formulae were reviewed following submission of the Annual Return 2007/08 and in some instances were revised to reflect a more consistent conversion from the asset's 'x' factor.

Revised on costs

The on-costs adopted within the MEAV are submitted by the CMT.

Non-Infrastructure On-Costs

The table below highlights the change in approach, from the Annual Return 2007/08 to the Annual Return 2008/09, when applying on-costs.

	including Site Specifics		not including Site Specifics	
Asset Type	AR08	AR09	AR08	AR09
Sewer Non-Infrastructure	106%	128.0%	n/a	99.9%
Water Non-Infrastructure	106%	139.0%	n/a	114.0%

Following the submission of the Annual Return 2007/08, the assets and, in particular, the site specifics were reviewed and identified. Through availability of additional data, we were able to separate out some site-specifics which could be applied to non-infrastructure assets.

A global site specific percentage was produced to cover the common site specifics of fencing, internal roads & paving, landscaping, site cabling, etc., which were not identified within the core data.

The new percentage was added to the construction items but was excluded from the identified site specific assets types.

Infrastructure On-Costs

There has been no change in our approach or analysis of infrastructure on-costs from the Annual Return 2007/08 to Annual Return 2008/09.

	not including Site Specifics	
Asset Type	AR08	AR09
Sewer Infrastructure	78%	91.5%
Water Infrastructure	78%	63.7%

Revised asset lives and asset life categories

For the Annual Return 2008/09, we have amended asset lives to reflect the recommendation in the WIC guidance notes. See below: (Section H Guidance v11.1.pdf – Page 6)

“Assets are categorised in terms of very short, short, medium, medium long and long life, non-depreciable, land and decommissioned as set out below:

Very short: assets having a life of up to 5 years, e.g. vehicles and computer equipment.

Short: assets having a life of 6 to 15 years, e.g. some ICA plant, telemetry, heavy vehicles and plant.

Medium: generally mechanical assets having a life of 16 to 30 years, e.g. pumping units and associated electrical plant, process plant, filter bed media, glass coated steel storage tanks.

Medium long: generally mechanical assets having a life of 31 to 50 years e.g. filter bed structures, site fencing, GRP covers and kiosks.

Long: generally operational structures including service reservoirs, treatment work structures, inter-process pipe work and filter bed structures; such assets will have a life exceeding 50 years.

Non-Depreciable: infrastructure assets (non-depreciable).

Decommissioned: decommissioned assets, which are not being used operationally, but are mothballed and are being maintained for future usage; this category does not include redundant assets, which are also out of operational service, but are not being maintained for future usage and are available for disposal.

Land: the land on which the asset type is situated and any surplus land.

Annex 2 to Section H – MEAV movement from 2DBP to AR09

The table below shows a detailed breakdown of valuation by asset type, where the overall asset stock has increased by £1.4 billion from 2DBP.

Asset Type			2DBP MEAV	AR09 MEAV	Difference
Water Non - Infrastructure			Gross £m	Gross £m	Gross £m
H1.1	B1.3	Water treatment works [101]	£ 2,061.75	£ 2,256.36	£ 194.61
H1.2	B1.4	Water storage [102]	£ 1,289.56	£ 1,309.21	£ 19.64
H1.3	B1.5	Water pumping stations [103]	£ 398.23	£ 404.64	£ 6.41
Water Infrastructure					
H1.4	B1.1	Water resources [104]	£ 2,495.89	£ 2,603.34	£ 107.44
H1.5	B1.2	Water mains [105]	£ 9,510.66	£ 9,513.22	£ 2.56
Wastewater Infrastructure					
H1.6	B1.6	Sewers [106]	£ 22,432.19	£23,238.10	£ 805.91
H1.7	B1.7	Sewer structures [107]	£ 361.97	£ 336.54	-£ 25.43
H1.8	B1.8	Sea outfalls [108]	£ 423.97	£ 576.32	£ 152.35
Wastewater Non-Infrastructure					
H1.9	B1.9	Sewage pumping stations [109]	£ 781.69	£ 798.90	£ 17.20
H1.10	B1.10	Sewage treatment works [110]	£ 2,432.40	£ 2,504.41	£ 72.01
H1.11	B1.11	Sludge treatment facilities [111]	£ 99.90	£ 105.09	£ 5.19
Support Services					
H1.12	B1.12	Support services [112]	£ 184.95	£ 183.19	-£ 1.76
Total			£ 42,473.19	£43,829.32	£1,356.13

There are five principal reasons for movement in the valuation:

- Updated asset information from the inventories
- Revised cost curves and on-costs (including application of site specific costs)
- Revised methodology for assessing the cost of manholes in sewers
- Increased cost index value (COPI); the COPI index has been revised from that applied in AR08.
- Revised land calculation; on-costs have been removed from the valuation of land because the acquisition of land alone (rather than building any assets on that land) does not require material overheads.

P Tables

Wholesale Non-household:

Revenue and tariffs

General comments and background

Due to the opening of the retail market to competition in April 2008, the data sources for the wholesale non-household tables are different from previous years. The sources of data also vary between the 2008/09 actuals and the 2009/10 forecasts included in this year's return. The following sections provide some background on the market structure and data sources used for the 2008/9 Annual Return as well as commentary on specific tables.

As set out in further detail below, it should be noted that the wholesale primary water and waste charges shown in the P Tables are £5.6m higher than actual billed revenues in the period.

In November 2006, Business Stream was created as a wholly owned subsidiary of Scottish Water to compete with other Licensed Providers in the new market. All retail activities supporting service to non-household customers moved to Business Stream including retail billing and the retail billing system, HiAffinity. Some of Scottish Water's asset data continued to be held on the HiAffinity system until the completion of the systems developments in Scottish Water to support the migration and market opening.

In the period between business separation, in November 2006, and market opening in April 2008, wholesale charges were calculated by deducting the retail margin from Business Stream's retail billed revenue.

All appropriate non-household data was migrated from Business Stream to the Central Market Agency (CMA) and to Scottish Water in February 2008 in preparation for market opening in April 2008, at which point the CMA started calculating all wholesale charges due to Scottish Water from Licensed Providers.

Data sources for Annual Return and 2nd Draft Business Plan

Prior to November 2006, the Annual Return was populated using data extracted from HiAffinity, the retail billing system which moved to Business Stream at the time of business separation. For the 2006/07 and 2007/08 Annual Returns and for Draft Business Plan, interim arrangements were put in place which enabled Scottish Water to gain controlled access to retail billing data for the purposes of regulatory reporting, pending launch of the CMA systems.

Settlement reports

In the first months of market opening, wholesale charges were notified to Scottish Water and Licensed Providers by the CMA solely by means of aggregated settlement reports. These summarised the total charges by meter size but did not provide a detailed breakdown of data held on the CMA's systems. The aggregated settlement reports continue to provide the basis for billing individual Licensed Providers. However, as detailed data is required to enable reconciliation of wholesale charges by market participants, additional disaggregated settlement reports were developed by the CMA and have been provided for all settlement runs since the end of September 2008. These disaggregated settlement reports have been used to populate the 2008/09 data in this year's Annual Return. It should be noted that, in line with the Market Code and supporting Code Subsidiary Documents, all settlement runs for 2008/09 will not be completed by the CMA until December 2009. Therefore the revenue shown in the P Tables is

the position at the end of March 2009 and not the final position for 2008/09. The latest settlement reports available at the end of March 2009 which have been used to populate the P Tables are as follows:

- *April 2008, May 2008, June 2008:* ***3rd Reconciliation (R3)***
- *July 2008, August 2008, September 2008, October 2008, November 2008, December 2008:* ***2nd Reconciliation (R2)***
- *January 2009, February 2009:* ***1st Reconciliation (R1)***
- *March 2009:* ***Provisional (P1)***

Impact of additional vacant properties

A recent development which has been observed is the retrospective amendment of the 'vacancy' flag at the CMA, such that properties previously flagged as occupied over the year have since been changed to vacant with retrospective effect. The number of SPIDs changed so far is circa 3,500 and it is understood that a further request for changes by retrospective amendment has been made involving several thousand SPID pairs. The vacancy flag is controlled by the Licensed Provider, not Scottish Water, although retrospective amendments have to be undertaken by the CMA at Licensed Provider request.

In addition, Business Stream have recently advised that they believe that there are 14,000 vacant properties which are currently incorrectly in charge. Until we get further details from Business Stream it is difficult to validate this figure or accurately quantify the impact but it has the potential to significantly reduce our revenue.

Comparison with 2nd Draft Business Plan

Due to the settlement timetable used by the CMA, it was not until early March 2009 that a disaggregated settlement report had been published for every month in 2008/9.

The Second Draft Business Plan was submitted to the WICS on 12 March 2009 so the underlying data used in the Plan was finalised some time earlier. In the absence of a full year of detailed settlement reports from the CMA sufficiently far in advance of the plan submission date, the forecast populations, consumption and revenues were produced by applying growth assumptions to actual 2007/08 data extracted from HiAffinity by Business Stream on Scottish Water's behalf in March 2008 and projected forwards.

In order to ensure consistency with the Second Draft Business Plan, the same forecast data for 2009/10 has been used in the 2008/09 Annual Return. This means that the data sources for the 2008/09 outturn and for the 2009/10 forecast in this year's P Tables are different; 2008/09 is derived from CMA settlement reports, 2009/10 forecasts from 2007/08 HiAffinity data.

There are a number of movements which are still under investigation and for which full explanations cannot therefore be provided at this time. These are identified in the relevant sections below.

Data migration

Migration of data from HiAffinity to the CMA and Scottish Water took place in February 2008.

The primary purpose of the data held in HiAffinity, prior to market opening, was to support retail billing of customers as well as being the master version of certain other data items, such as revenue meter asset data. The data held at the CMA to support the market has a different structure compared to pre-market opening. The CMA data is based on tradeable entities, which are Supply Points, rather than customers or properties. The market data structure,

including Supply Points, is set out in Code Subsidiary Document CSD0301. The migration exercise, therefore, included activities to extract the relevant data from HiAffinity; the application of business rules and logic to align the data with the requirements of the Data Catalogue in the Market Code; and some data cleansing work. Separate rules and logic were also applied to the data being migrated back to Scottish Water to align with Scottish Water's data policies. Some unintended effects of the migration exercise were observed, the key ones are noted below.

Some data elements failed to migrate properly in February 2008 for a variety of reasons. Data rectification activities were planned and implemented throughout 2008/09 in close liaison with the CMA. Additionally, some data cleansing matters were also noted and acted upon. As a result there were a number of step changes in data over the year. All issues observed by Scottish Water have been logged and notified to the CMA. The CMA produces a market issues list so there is transparency to all participants. Where appropriate, Scottish Water is able to resolve some issues on its own but others require input from the CMA or market participants.

Some of the activities above have resulted in changes to data which are visible in the Annual Return when comparing 2008/09 actuals derived from CMA settlement reports and 2009/10 forecasts derived from 2007/08 HiAffinity data. For example, prior to migration an audit and data verification of meter digits and physical and chargeable meter sizes was conducted based on comparison with manufacturers' data and the results of field visits by Scottish Water staff. This has resulted in changes to the distribution of meters by meter size bands.

Tariffs

The tariffs reported in the P Tables are all taken from the 2008/09 Wholesale Charges Scheme as agreed by the Water Industry Commission for Scotland and published by Scottish Water.

Revenues

Revenue in the P Tables is derived by the application of tariffs from the Wholesale Charges Scheme to consumption, counts of meters and Supply Points. Revenue for 2008/09 has been reconciled to wholesale billed revenue in the General Ledger, prior to accruals and provisions, to less than 1% overall, and by individual charge type, when taking account of negative charges.

For the reasons stated below, in certain circumstances, negative charges are calculated by the CMA for a Supply Point (negative charges are one of the unintended effects identified as an issue after market opening). This eventuality is usually due to issues with meter readings and incorrect treatment of meter rollovers by CMA systems and, in most cases, the negative charges will be replaced with positive values prior to final reconciliation in December 2009. At the end of March 2009, negative volumetric charges of £2.9m applied to water supply points and £2.7m to sewerage supply points over the 2008/09 financial year. Because the P tables do not allow for the application of negative volumetric charges, these are not currently included in the scope of the tables which are therefore overstated by £5.6m compared with the equivalent actual revenue recorded in the General Ledger. P Table revenue has been reconciled to the General Ledger after adjusting for these negative charges, as shown in the table below:

2008/9 Wholesale Primary Revenue	£m
Total Billed Revenue from GL at 31 March 2009	321.17
Total Billed Trade Effluent Revenue	24.02
Total Billed Revenue from GL at 31 March 2009 excluding TE	297.15
Total Primary Water & Waste Water Revenue for 2008/9 from P Tables	303.06
Negative Primary Water charges included in Billed Revenue but not in P Tables	-2.93
Negative Primary Waste Water charges included in Billed Revenue but not in P Tables	-2.71
Total P Tables revenue net of negative charges	297.42
Overall Variance	0.27
% Variance	0.09%

Impact of additional vacant properties

In addition, Business Stream have recently advised that they believe that there are 14,000 vacant properties which are currently incorrectly in charge. Until we get further details from Business Stream it is difficult to validate this figure or accurately quantify the impact but it has the potential to significantly reduce our revenue.

Counts of meters and supply points

A different approach has been taken to derive counts of meters and Supply Points in this year's Annual Return in order to reconcile P Table revenue more closely to billed revenue in the General Ledger. In previous years, counts have been based on a snapshot taken in September of the year in question, and in previous years included premises as defined at that time. This does not take account of premises which are not in charge for the full year.
Each disaggregated settlement report provided by the CMA includes Registered Days (number of days in which wholesale charges apply) per meter for the month covered by the report. This enables the calculation of average meters in charge over the entire year weighted by days in charge as shown in the examples below.

	Meter 1 Registered Days	Meter 2 Registered Days	Meter 3 Registered Days
April 2008	30	30	0
May 2008	31	31	0
June 2008	30	30	0
July 2008	31	31	0
August 2008	31	31	0
September 2008	30	30	0
October 2008	31	0	0
November 2008	30	0	0
December 2008	31	0	31
January 2009	31	0	31
February 2009	28	0	28
March 2009	31	0	31
Total Registered Days	365	183	121
Value included in P Tables = (Total Registered Days/365)	1.0	0.50	0.33

This approach has been used to populate all meter and Supply Point counts for 2008/09 and has enabled revenue to be reconciled closely to the General Ledger. As mentioned above, various data rectification activities have been taking place throughout the year following initial migration of data from Business Stream to the CMA. As a result the Supply Point database has not been as stable throughout the year as it would have been in previous years and a snapshot in September would not necessarily give an accurate reflection of the number of meters in charge over the course of the full year.

Consumption

The Wholesale Charges Scheme includes a number of consumption bands, each of which is charged at a different unit rate, in addition to a capacity charge which applies to all consumption up to a threshold determined by meter size.

The P Tables calculate wholesale volumetric charges by applying consumption over the full year to the various consumption bands and unit rates in the Wholesale Charges Scheme. The CMA's systems also use the Wholesale Charges Scheme as the basis for all calculations but, as charges are estimated in advance on a monthly basis, a different method is used to derive the charges. Total annual consumption is estimated and a single Estimated Weighted Average (EWA) unit rate is derived which takes account of all consumption in all charge bands over the year.

Following market opening it became apparent that various issues were being encountered with the calculation of consumption as a result of some poor quality meter reading data and unintended consequences of CMA calculations. This resulted in the calculation of negative consumption at some meters and, at some of those meters, the application of negative volumetric charges.

A related issue was the calculation of an EWA value of zero in certain circumstances relating to large negative consumption. Following an amendment to the Market Code, a change to the CMA's calculations was implemented in late December 2008 to address this issue, reducing the scale of the problem in all settlement reports published since. The most recent available settlement reports published at the end of March 2009 have been used to populate the P Tables and of these, the reports for July 2008, August 2008 and September 2008 are the only reports published prior to the change to CMA calculations in December 2008. These three reports therefore account for the majority of the negative charges currently applicable to 2008/09.

Consumption has been included in the P Tables where the EWA for a given supply point in a given month is not equal to zero (and therefore a charge applies to the consumption). This ensures that the P Tables reconcile as closely as possible to the General Ledger.

Scottish Water has worked closely with the CMA and other market participants to identify these issues and agree solutions. All issues identified by Scottish Water have been logged formally at the CMA and this in turn informs the CMA's own issues logs and resolution plans.

Apparent Discrepancies between Meter Counts and Consumption

In all tables containing consumption (tables P9 - P15, & P22 - P26), apparent discrepancies can be observed between counts of meters for a given meter size and the corresponding consumption at that meter size. This tends to be most visible in the Allocated Tranche and Capacity Volume sections and is demonstrated by the following extract from table P10 where the number of meters has decreased in 2009/10 but the associated consumption has increased:

Line Number	Description	Meter Size	Units	2008/9	2009/10
P10.6	Tariff multipliers: Licensed provider: tariff meters	100mm	nr	45	38
P10.17	Tariff multipliers: Licensed provider: allocated tranche	100mm	m3	857	1,321
P10.29	Tariff multipliers: Licensed provider: capacity volume	100mm	m3	618,060	679,186

As the Allocated Tranche is up to the first $20m^3$ consumed per meter, it might reasonably be assumed that the Allocated Tranche consumption will generally be the number of meters multiplied by 20 or possibly slightly less (due to the minority of meters which have consumed less than $20m^3$ over the full year). In many cases this is clearly not the case for 2008/09 figures in the P Tables.

This apparent discrepancy is due to differences in the method of calculation of wholesale charges between the CMA and the P Tables. The 2008/09 meter counts are based on meters which have fixed charges applied (based on Registered Days in charge as set out previously). As outlined earlier, consumption is included for all meters where the EWA unit charge is greater than zero. The EWA relates only to volumetric charges so fixed charges will still apply at a meter even where the EWA, and therefore volumetric charges, are equal to zero.

A further factor which has resulted in movements in consumption between 2008/09 and 2009/10 in tables P10, P11, P12 and P13 is the treatment of multi-meter Supply Points. For 2008/09 data, the consumption at multi-meter Supply Points was reported separately against the size of each meter at that Supply Point. For 2009/10 data, the consumption at a multi-

meter Supply Point has been reported against the size of the largest meter at that Supply Point.

In this scenario, the meter will therefore be included in the meter counts due to the application of fixed charges. However, there will be no corresponding consumption shown in either the Allocated Tranche, Capacity Volume or Standard Volumes tables because the EWA unit rate is zero so no volumetric charges apply.

Because 2009/10 forecast figures are derived from HiAffinity which used a different logic to the CMA to derive consumption and calculate charges, the same effect will not be observed in 2009/10 data.

Final reconciliation position 2008/09

According to the settlement timetable used by the CMA, a number of reconciliations have still to be run in respect of 2008/09 with final reconciliation not due until December 2009. The P Tables represent the billed position at the end of March 2009 but there will be further movements before the final position is known. There is significant uncertainty associated with these further movements as there are a number of factors which will affect tariff multipliers, consumption and revenue both upwards and downwards and which are not within the control of Scottish Water. These include the impact of new meter readings; changes by Licensed Providers to vacancy status or Rateable Value at Supply Points using the retrospective amendment facility; data verification by all market participants; the actual impact of the correction of meter rollovers and correction of the other issues logged at the CMA which will correct the negative charges mentioned previously; and any adjustment of Schedule 3 discounts to take account of actual rather than forecast consumption over the year, to be consistent with the terms of the Agreement.

In addition, Business Stream have recently advised that they believe that there are 14,000 vacant properties which are currently incorrectly in charge. Until we get further details from Business Stream it is difficult to validate this figure or accurately quantify the impact but it has the potential to significantly reduce our revenue.

Confidence Grades

The following confidence grades have been applied to data in the P Tables:

- All tariff data has been assigned a confidence grade of A1 given that it has been sourced directly from the Charges Scheme.
- For households, the report year confidence grade remains at A2 for tariff multipliers and revenue.
- For businesses, all 2008/09 primary charge revenue and tariff multipliers except volumetric charge revenue and consumption have been assigned a confidence grade of B2. Although the revenue has been reconciled closely to revenue in the general ledger, the underlying data is in many cases maintained by 3rd parties, primarily Licensed Providers, over whom Scottish Water have no control.
- All 2008/09 primary volumetric charge revenue and consumption values have been assigned a confidence grade of B3. This reflects the known issues with calculation of consumption at the CMA which affect the data for July, August and September 2008 and which are explained further in the earlier Consumption section.
- For households, the report year +1 confidence grade remains at A3 for tariff multipliers and revenue.
- All business 2009/10 primary values have been assigned a confidence grade of B3 which reflects the degradation of the data since its extraction from HiAffinity in March 2008 and the uncertainty associated with forward looking projections.

- All business non-primary values have been assigned a confidence grade of B4, reflecting the manual billing processes which have been in place for much of the year.
- Table P1 and P2 are automatically calculated, and the confidence grades assigned reflect the grades reported in the other tables.

Table P3 Water Service – Unmeasured Household

The following commentary also applies to Table P5 – Waste Service – billed unmeasured household properties. Both tables are reported with a confidence grade of A2 which reflects the continued use of WIC4 data.

P3.1- P3.50 & P5.1 – P5.50 Household Properties - billed unmeasured

Connected and billed household properties

The derivation of the household property numbers is explained in the commentary to line A1.1.

P3.38 – P3.46, P5.38 – P5.46

As with last year the number of households with a new discount of up to 25% is sourced directly from WIC4. The resulting Band D equivalents are reported in lines P3.38 – P3.46 and P5.38 – P5.46.

P3.47, P5.47

The number of billed households (including exempts) is sourced from the complete WIC4 report for 2008/09.

The number of Band D equivalent water billed unmeasured properties has increased by 21,659 to 1,929,781. This is less than the forecasted position on last year's Annual Return of 1,934,497 which reflects the current downturn being experienced in the housing market. This actual increase of 21,659 represents an increase in new households billed as well as properties that were, in the past, connected but not billed.

The same logic can be applied to the number of Band D equivalent wastewater unmeasured households which increased by 19,475 properties. The reduction in the forecast for last year also reflects the current downturn being experienced.

P3.50, P5.50

Total Revenue has increased by £16.22m for water and £16.99m for waste which is marginally down on last year's forecast. Again, this reflects the downturn being experienced in the housing market.

Table P4 Water Service - Measured Household

P4.1 – 4.5 Household Properties - billed on measured basis: tariff meters

An increase of 74 properties is recorded when compared with the previous year. This is due to a number of properties that were billed as non-domestic being corrected in the wholesale migration. The confidence grade remains A2.

P4.6 – 4.9 Volumes - Measured Household Properties

The increase in billed volume from 64,553m^3 to 87,758m^3 is principally due to the additional properties added due to wholesale migration. The confidence grade remains A2.

Table P5 Waste Service – Unmeasured Domestic
The movements in table P5 have been outlined in the commentary to table P3. Again the actual increase was less than expected due to the current downturn in the housing market.

Table P6 Wastewater Service - Measured Household

P6.1 – 6.5 Measured household connected properties
No significant change has occurred in the year and the confidence grade remains at A2

P6.6 – 6.9 Volumes - Measured household Properties

No significant change has occurred in the year and the confidence grade remains at A2

Table P7 Wastewater Service - Property Drainage

P7.1 – 7.50 Property Drainage for Household Properties Billed Measured

P7.37 – Total number of households billed for property drainage has increased significantly by 564 to 727. This is due largely to the additional surface water drainage only properties that were billed as non-domestic and have been reclassified as domestic as part of the wholesale migration. The confidence grade remains at A2.

Table P8 Wastewater Service – Roads Drainage

P8.1 – P8.50 Roads Drainage for Household Properties Billed Measured

P8.37 – Total number of households billed for roads drainage has increased significantly by 582 to 754. This is due largely to the additional surface water drainage only properties that were billed as non-domestic and have been reclassified as domestic as part of the wholesale migration. The confidence grade remains at A2.

Table P9 Water - wholesale - primary revenue: wholesale water charges (assessed) to licensed providers through charges scheme

P9.1- P9.5 Tariff multipliers: Licensed Provider: assessed meter sizes

Assessed meter charges are based on the Rateable Value at the property. This is based on the relevant table in the Wholesale Charges Scheme. An assessed meter size is assigned to the supply point based on Rateable Value.

The tables show an apparent drop of over 5,000 assessed meters in 2009/10 compared with 2008/09. The 2009/10 forecast is based on data from HiAffinity extracted in 2007/08.

The drop compared with HiAffinity data is primarily due to the inclusion in 2008/09 data of over 5,000 additional assessed meters which have a 'Null' Rateable Value. There has not been a corresponding increase in sewerage assessed meters. The reason for this variance is not immediately clear and further investigation is underway.

P9.25-9.29 Tariff multipliers: Licensed Provider: actual meter sizes

The "actual" meter details shown in lines P9.25 to P9.30 are a blend of the meters that were installed and notified electronically to the CMA and which were incorporated in the various settlement runs which were used as the basis of the P Tables, and also includes the assessed meter size for those premises which remained unmetered and were not incorporated into the settlement runs.

The vast majority of these meters are those which had been installed under the Full Business Metering (FBM) programme and notified to the CMA. There are a small number of additional meters which are included in lines 25-29. These additional meters are either existing meters at multi-meter Supply Points where an FBM meter has been installed or because they are erroneously subject to transitional phasing arrangements due to a known issue affecting market processes, namely gap sites and routine meter installations (outside the scope of the FBM programme). This accounts for the all of the 80mm and most of the 50mm meters shown which would not be expected to be installed under the FBM programme.

By the end of March 2009, the meters installed at supply points under the FBM project had been sent to the CMA whilst further meters have been installed and are awaiting notification to the CMA. Meters may continue to be installed under the Contribution offer process.

The FBM meters have been installed over the last two years; some were included in the meters installed in the CMA systems at migration; others were notified to the CMA in a number of batches between migration and the end of March 2009. Because the counts in table P9 are the average over the 12 settlement reports used (which were published by the CMA between the end of September 2008 and early March 2009), the total meters shown here is lower than the 34,812 installed by the end of the current reporting period.

The meter counts projected for 2009/10 in lines 25-29 are the same as those in lines 1-5 and therefore reflect the assessed meter size at the supply point based on Rateable Value rather than actual meters likely to be installed. These figures were used because site visits under the Full Business Metering programme had not been completed at the time that the 2nd Draft Business Plan was produced. As such, the data in lines 25-29 for 2009/10 reflects a holding position from the 2nd Draft Business Plan rather than a forecast of additional actual meters to be installed in 2009/10.

As 2008/09 data in lines 25-29 is based on actual meters, subject to transitional phasing from unmeasured to measured charges, it reflects the size of meter fitted at the supply point which will, in some cases, have been significantly different to the assessed meter size derived from Rateable Value (RV). For example, a low RV, high consumption supply point may have had an assessed meter size of only 20mm but may have required a 50mm meter to be installed to support actual consumption.

P9.49 Tariff multipliers: exempt supply points

The number of exempt supply points is 1,158 higher for 2008/09 than for 2009/10. This is because the 2009/10 figure excludes 1,479 supply points which are exempt but which are measured rather than assessed. In the 2nd Draft Business Plan, these supply points were included in the Section 3 table 3.1 rather than the Section 8 tables. The definitions for the

Annual Return imply that these measured supply points should be included in sheet P9 so the 2008/09 figure includes measured supply points.

P9.31-48 and P14.26-37 volume calculation:

In the 2nd Draft Business Plan the assumed post-metering water-use at SPIDs (which were charged assessed water (and foul sewerage) charges in 2008/09) was based on the water-use / RV formula specified in the Wholesale Charges Scheme ((0.0373 x rateable value)-24) but used a factor of 0.0266 rather than 0.0373.

The "actual" volumes have been derived by adding the forecast annual water use for premises (paying assessed water charges in 2008/09) but which had been metered (and notified electronically to the CMA and which were incorporated in the various settlement runs which were used as the basis of the P Tables) to the assessed water use at premises that remained unmetered at that time, so that the combined water use (at the metered and unmetered premises in this table) equates to the volume that would have been generated from all 49,105 unmetered SPIDs using the 0.0266 water-use /RV conversion factor.

Tables P10, P11, P12 and P13 – Water – wholesale – primary revenue: wholesale water charges (measured) to licensed providers through charges scheme

General comments

Meters at measured supply points have been allocated between tables P10, P11, P12 and P13 according to total consumption at the supply point over the year. As data for 2009/10 is based on consumption in 2007/08, significant variations in consumption at a Supply Point in 2008/09 will result in movement between these four tables.

Meter count differences between actuals and forecasts

Meter counts are higher for 2008/09 than in 2009/10 across all tables. The table below shows total measured meters, excluding Supply Points subject to Schedule 3 agreements, (i.e. the sum of tables P10, P11, P12 and P13). The 2nd Draft Business Plan forecasts a reduction in meter numbers, using 2007/08 as a base. Actual meters in 2008/9 fall between the actual position for 2007/08 and the forecast position for 2009/10.

Meter Size	2007/8 actual (from 2nd Draft Business Plan)	2008/9 forecast (from 2nd Draft Business Plan)	2008/9 actual	2009/10 forecast
20mm	68,697	65,902	67,505	64,320
25mm	9,780	9,780	9,267	9,780
40mm	1,318	1,318	1,397	1,318
50mm	1,136	1,136	1,190	1,136
80mm	293	293	409	293
100mm	84	84	91	84
150mm	20	20	25	20
200mm	5	5	7	5
250mm	3	3	3	3
300mm	2	2	4	2
Total	**81,338**	**78,543**	**79,898**	**76,961**

The ongoing data verification activity during 2008/09, mentioned earlier, has included various changes to meter chargeable sizes as a result of analysis of manufacturer data and site visits by Scottish Water field staff. This has resulted in movement of meters between size bands.

Table P14 Wastewater - wholesale - primary revenue: foul sewerage charges (assessed) to licensed providers through charges scheme

P14.1-14.5 Tariff multipliers: Licensed Provider: assessed meter sizes

Total assessed meters in 2008/09 are 8,649 lower than in 2009/10 which is based on 2007/08 data from HiAffinity. This difference is primarily due to circa 8,700 meters which had a sewerage chargeable meter size of 0mm and a Return-to-Sewer % (RTS%) of 0%. Charging rules applied by the CMA are such that no sewerage charges are applied where the Return-to-SewerRTS % is 0%. As no charges were applied to these meters in 2008/09, they have not been included in lines 1-5. The inclusion of these meters in 2007/08 data from HiAffinity

indicates that these meters were previously in charge. This has been identified as an issue to be logged at the CMA.

P14.13-14.18 and P14.32-14.37 Tariff multipliers: Licensed Provider: assessed/actual capacity volume

There is a variation in the capacity volumes for both unmeasured and measured wastewater SPIDS between the 2008/09 (AR09) actual volumes and the corresponding 2009/10 forecasts. Overall the forecast volumes are fully accounted for although we have identified that the allocation of volumes across the various categories has classified wrongly as "Standard volume" some volume which should have been identified as "Capacity volume".

P14.20-14.24 Tariff multipliers: Licensed Provider: actual tariff meters

Total actual meters at assessed supply points are lower in 2008/09 than in 2009/10 for the same reasons set out above in relation to lines 25-29 in Table P9.

P14.39 Tariff multipliers: exempt supply points

The number of exempt supply points is 1,091 higher for 2008/09 than for 2009/10. This is because the 2009/10 figure excludes 1,479 supply points which are exempt but which are measured rather than assessed. In the 2nd Draft Business Plan these supply points were included in table 3 rather than table 8. The definitions for the Annual Return imply that these measured supply points should be included in sheet P9 so the 2008/9 figure includes measured supply points

Table P15 Wastewater - wholesale - primary revenue: foul sewerage charges (measured) to licensed providers through charges scheme

P15.17-15.23 Tariff Multipliers: Licensed Provider: capacity volume

There is a variation in the capacity volumes for both unmeasured and measured wastewater SPIDS between the 2008/09 (AR09) actual volumes and the corresponding 2009/10 forecasts. Overall the forecast volumes are fully accounted for although we have identified that the allocation of volumes across the various categories has classified wrongly as "Standard volume" some volume which should have been identified as "Capacity volume".

P15.25 Tariff Multipliers: Licensed Provider: standard volume

Standard volumes are forecast to be 10% lower in 2009/10 than in 2008/09. The 2009/10 forecast is based on actual data from 2007/08 which shows that there has been a 10% increase in billed volumes from 2007/08 to 2008/09. The cause of this increase is currently under investigation.

Table P16 Wastewater - wholesale - primary revenue: surface water drainage charges to licensed providers through charges

P16.1-16.3 Tariff multipliers: Licensed providers: supply points

The number of Supply Points with Area Based Surface Water Drainage tariffs is shown as 5 in 2008/09 and 24 in 2009/10. The 2009/10 figure is based on Supply Points identified as being billed on such a tariff in HiAffinity in 2007/08. At initial migration, only 5 of these Supply Points were successfully migrated to the CMA. A further 17 Supply Points were created at the CMA in June 2008 but there is currently no process in the CMA systems to input surface area and therefore these Supply Points are currently being charged Surface Water Drainage charges based on Rateable Value. This issue has been logged and the addition of surface area to these Supply Points will be requested using the Retrospective Amendment process to correct wholesale charges.

Numbers of Supply Points in lines 2 and 3 are higher in 2009/10 than 2008/09. This is because the 2008/09 figures are deflated slightly as a result of weighting by days in charge (as outlined earlier).

P16.7-16.9 Tariffs

Tariffs have been rebalanced in the 2009/10 Wholesale Charges Scheme resulting in an increase in Property Drainage and a corresponding decrease in Roads Drainage compared to 2008/09.

Table P17 Trade effluent charges to licensed providers through charges scheme

General Comment

Scottish Water's Trade Effluent data for this Annual Return was initially planned to use the reconciliation reports provided to Scottish Water by the CMA. However, known data issues meant that this was not considered the most appropriate method for providing an accurate picture of Trade Effluent income for 2008/09 and beyond. The data issues include migration errors, system issues and Scottish Water to CMA integration issues.

In addition, the total volume of trade effluent reported by the CMA for 2008/09 was 33Mm^3, whereas in the 2DBP, the volume reported was 38Mm^3. There have been no major closures since the 2DBP was finalised, and indeed, none since the Annual Return 2007/08 was submitted. The figure of 33Mm^3 was considered too low to be meaningful, and would result in extremely low confidence grades not only in the P tables, but also the A and E tables. Scottish Water has worked with LPs to identify where the discrepancies have arisen, and believe we have confirmation the volume remains around 38Mm^3. Most if not all of these issues have been resolved, but the CMA reconciliation reports do not reflect this due to the timing of reconciliation runs. The decision was therefore made to use the 2DBP data as the basis for the Annual Return 2008/09.

P17.1 The number of customers paying published tariffs has decreased from 799 to 713. The confidence grade for the report year has been set at B2 to reflect the quality of data from the CMA. The forecast year +1 has been set at B3 to reflect the use of some estimation.

P17.2 & P17.3 Os and Ss remain at 350mg/l and 250mg/l respectively. The confidence grade for the report year has been set at A2 to reflect the continued use of these figures. The forecast year +1 has also been set at A2 for the same reasons.

P17.4 The chargeable daily volume has risen from 40,720m³/d in 2007/08 to 43,178m³/d. This is at variance with the decrease in numbers paying published tariffs. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4.

P17.5 The sBOD load charged has increased from 11,769kg/d in 2007/08 to 12,865kg/d The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P17.6 The TSS load has risen from 8,570kg/d reported in 2007/08 to 9,135kg/d in 2008/09. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P17.7 The actual volume discharged in 2008/09 was just under 11.2Mm³, an increase from the 2007/08 figure of 10.1Mm³. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P17.8 Similarly, the strength adjusted volume (SAV) for sCOD has increased from 21.3Mm³ to 23.1Mm³. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P17.9 In contrast, the SAV for TSS has fallen, from 10.2Mm³ to 9.7Mm³. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P17.10 – P17.17 Are the published wholesale rates for 2008/09. Those for the report year +1 are those published for 2009/10.

Table P18 Water - wholesale - primary revenue: wholesale charges for miscellaneous services

P18.1-18.5 Tariff multipliers

There has been movement in the volume of Field Troughs and Drinking Bowls between lines 18.1 and 18.2. This appears to be because the data had been transposed between the lines. The result of this is that the SR10 estimates for 2009/10 are understated.

There are no unmeasured caravan sites where the caravans do not have a council tax classification. This is consistent with the 2007/08 data used as the basis for the 2009/10 forecast.

Table P19 Wastewater - wholesale - primary revenue: wholesale charges for miscellaneous services to licensed providers through charges scheme

P19.1 Tariff multipliers

There are no unmeasured caravan sites where the caravans do not have a council tax classification. This is consistent with the 2007/8 data used as the basis for the 2009/10 forecast.

Table P20 Water-retail-non-primary revenue: retail revenue from charges to household premises through charges.

Revenue generated from water charges to household premises was £8.85m for the report year. The majority of the revenue came from Development Services – Infrastructure charges, which aligns with the Q4 Infrastructure Charge and RCC return. The confidence grade of A2 has been allocated.

Table P21 Wastewater-retail-non-primary revenue: retail revenue from charges to household premises through charges scheme

Revenue generated from wastewater charges to household premises was £5.32m for the report year. The majority of the revenue came from household septic tanks and Development Services – Infrastructure charges, which aligns with the Q4 Infrastructure Charge and RCC return. The confidence grade of A2 has been allocated.

Table P22 Water - wholesale - primary revenue: wholesale water charges to licensed providers through Schedule 3 in respect of supply points consuming up to and including 100Ml/annum

P22.1-22.32 Tariff multipliers: Licensed Provider: meter sizes, allocated tranche, capacity volume

The total number of meters installed at the supply points included in this sheet has not changed although the distribution by meter size has changed. This is as a result of ongoing data cleansing activities on chargeable meter size since data migration. This in turn impacts on the distribution by volume.

P22.38-22.41 Revenue from Schedule 3 agreements consuming up to and including 100ml/annum

Revenues are lower in all cases in 2008/09 than forecast for 2009/10. Schedule 3 agreements are implemented as a simple % discount at the CMA which is forecast at the start of the financial year. A review is currently underway of all Schedule 3 agreements to identify whether the outturn position is as forecast and assess whether the percentage discount aligns with the terms of the relevant agreement. The drop in revenue is particularly large for Agreement 1 (table P22) and this appears to be due to absence of meter readings. Consumption will be recalculated by the CMA on receipt of further actual meter readings from the Licensed Provider.

Table P23 Water - wholesale - primary revenue: wholesale water charges to licensed providers through Schedule 3 in respect of supply points consuming between 100Ml/annum and up to and including 250Ml/annum

P23.1-23.32 Tariff multipliers: Licensed Provider: meter sizes, allocated tranche, capacity volume

The total number of meters is higher in 2008/09 than in 2009/10 due to the inclusion in 2008/09 of two extra meters for Agreement 4 (table P23). The Schedule 3 agreement in place at this Supply Point specifically relates to a raw water supply on an 80mm meter but the CMA applies the Schedule 3 discount across all charges at a SPID, in this case also including a 20mm and 50mm meter. The Schedule 3 discount should be adjusted prior to final reconciliation to ensure that final billed revenue aligns with the terms of the Schedule 3 agreement. Data for 2009/10 does not include these meters as it was extracted from HiAffinity

where the Schedule 3 agreements were implemented on a case-by-case basis only to those relevant meters. This in turn impacts on the distribution by volume.

P23.38-23.41 Revenue from Schedule 3 agreements consuming > 100ml/annum and <= 250ml/annum

Revenues for Agreement 2 (table P23) are significantly lower for 2008/09 than for 2009/10 (the latter being based on actual billed revenue in 2007/8). This is due to the inclusion of negative consumption in 2008/09 billed consumption as a result of the identified issues with meter readings and volume processing at the CMA. As outlined previously, these issues are well understood and affect a number of supply points. Corrective actions have been implemented at the CMA and correction of the negative consumption is expected to take place in subsequent reconciliation runs. In some cases, there is also a dependency on receipt of further meter readings from Licensed Providers.

Revenue is significantly higher in 2008/09 than in 2009/10 for Agreement 4 due to the inclusion of additional meters as set out above. The Schedule 3 discount should be adjusted as necessary prior to final reconciliation to ensure that final billed revenue aligns with the terms of the Schedule 3 agreement.

Table P24 Water - wholesale - primary revenue: wholesale water charges to licensed providers through Schedule 3 in respect of supply points consuming > 250Ml/annum and <= 1000Ml/annum

P24.1 Tariff multipliers: Licensed Provider: meter sizes

Line 1: There are two 20mm meters shown in 2009/10 but not in 2008/09. These meters relate to Agreement 2 (table P24). This Supply Point was not successfully migrated to the CMA in the initial data migration. The Supply Point has been re-created in subsequent data rectification activities but did not come into charge until mid March 2009 and charges will apply in all months of 2008/09 in subsequent reconciliation runs. As the P Tables have been based on settlement reports produced prior to this, no meters, consumption or revenue are shown in the tables for 2008/9.

Table P25 Water - wholesale - primary revenue: wholesale water charges to licensed providers through Schedule 3 in respect of supply points consuming > 1000Ml/annum

P25.38-25.41 Revenue from Schedule 3 agreements consuming > 1000ml/annum

Revenues vary in all cases between 2008/09 and 2009/10. Schedule 3 agreements are implemented as a simple % discount at the CMA which is forecast at the start of the financial year. A review is currently underway of all Schedule 3 agreements to identify the likely final billed revenue and propose adjustment to the % discount as necessary prior to final reconciliation to align with the terms of the relevant agreement. The 2009/10 figures reflect final billed revenue 2007/08 adjusted for growth assumption so are likely to reflect a more realistic final figure unless there has been a significant variation in consumption at the Supply Point.

Table P26 Wastewater - wholesale - primary revenue: foul sewerage charges to licensed providers through Schedule 3

One Schedule 3 agreement has been included for 2008/09. This Schedule 3 agreement covers all waste charges including foul sewerage, surface water drainage and trade effluent. In the 2nd Draft Business Plan, all sewerage and surface water drainage revenue associated

with this agreement has been reported in table P27. For the 2008/09 figures it has been possible to split the revenue into its component parts:

	2008/9	2009/10
Foul Sewerage (Table P26)	£183,097	
Surface Water Drainage (Table P27)	£105,812	£228,295
Total	£288,909	£228,295

The total revenue billed is significantly higher in 2008/09 than is forecast for 2009/10. The current billed revenue for 2008/09 is higher than it should be under the terms of the Schedule 3 agreement so it is likely that the Schedule 3 discount will be adjusted accordingly prior to final reconciliation to ensure that final billed revenue aligns with the terms of the agreement.

Table P27 Wastewater - wholesale - primary revenue: surface drainage charges to licensed providers through Schedule 3

See note above on Table P26.

Table P28 Trade effluent charges to licensed providers through Schedule 3

P28.1 This line details the number of dischargers which receive a Schedule 3 discount. The number remains at 50. The confidence grade for the report year has been set at B2 to reflect the quality of data from the CMA. The forecast year +1 has been set at B3 to reflect the estimation.

P28.2 and P28.3 These lines reflect the standard Scottish Average Sewage Strength figures, as per the Scheme of charges

P28.4 The chargeable daily volume paid is recorded as 109,168m³/d. This figure has not been reported previously. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.5 The settled BOD load paid is recorded as 66,424kg/d. This figure has not been reported previously. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.6 The suspended solids load paid is recorded as 50,508kg/d. This figure has not been reported previously. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.7 The actual volume discharged has increased slightly from 16.0Mm³ to 16.3Mm³ The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.8 The Strength Adjusted Volume for settled COD is recorded as approximately 58.461Mm³/yr. This figure has not been reported previously. The confidence grade for the report year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.9 The Strength Adjusted Volume for suspended solids is recorded as approximately 11.8Mm³/yr. This figure has not been reported previously. The confidence grade for the report

year has been set at B3 to reflect the quality of data from the CMA. The forecast year +1 has been set at B4 to reflect the estimation.

P28.10 This agreement runs from 01/04/2003 to 31/03/2018. The terms are a fixed payment (adjusted for changes in Bank of England base rate (Mar-Mar)), subject to the discharger meeting an influent quality standard plus a rate per tonne of sCOD (or TSS if more favourable), which is adjusted according to changes in RPIX - Feb to Feb

P28.11 This agreement runs from 01/07/2005 to 31/12/2012. The customer is charged at Scheme of Charges rates for volumes up to 28,314m³. Volumes above this will be charged at an agreed rate which changes according to the change in RPI (October-October). Base RPI is Oct 2001 (174.3).

P28.12 This agreement runs from 01/01/2001 to 31/12/2011. The discharger is charged on both strength and volume, with the rate varying according to the change in RPI between Oct 2000 (171.6) and previous year. RPI figures from RP02 table.

P28.13 This agreement runs from 01/01/2002 to 31/12/2011. The discharger is charged on both strength and volume, with the rate varying according to the change in RPI between Oct 2001 (174.3) and previous year. RPI figures from RP02 table

P28.14 This agreement runs from 01/04/2005 to 31/03/2015 and is a fixed monthly payment with a volumetric element. Both are subject to changes in RPIX. RPIX base value is February 2005 from RP05 table.

P28.15 This agreement runs from 01/04/2005 to 31/03/2015 and comprises a fixed charge, which is not subject to increase, and a volumetric rate which varies according to any changes in RPIX between by Dec-Dec each year.

P28.16 This agreement runs from 01/04/2005 to 31/03/2015 and includes fixed and variable quarterly charges. Fixed charges are split into finance, which are not subject to RPIX increases, and operating charges, which are subject to RPIX increases. Quarterly variable charges increase by RPIX. Base RPIX is Dec 2004.

P28.17 This agreement runs from 01/04/2005 to 31/03/2015 and includes a fixed monthly payment plus a volumetric element. The volumetric element is subject to variation based on 75% of any change in RPIX. RPIX base value is December 2004 from RP05 table.

P28.18 This agreement runs from 01/04/2005 to 31/03/2015 and includes a fixed charge which varies by 75% of the change in RPIX (Dec to Dec). There are no variable (volumetric) charges with this agreement.

P28.19 This agreement runs from 01/04/2005 to 31/03/2015 and includes monthly “capital” and volumetric payments, both of which vary according to the change in RPIX (Dec to Dec each year).

P28.20 This agreement runs from 01/03/2002 to 31/03/2018. This is a complex deal involving primary and secondary capital amounts which are increased by the change in RPI since January 1994, and a tertiary amount which varies by the change in RPI since April 2000. There is no volumetric element to this agreement.

P28.21 This agreement runs from 01/01/2005 to 31/12/2010. This deal covers multiple sites in Aberdeen. Aberdeen Water Users Group (AWUG) agreed a combined rate for water and TE, which increases by the change in RPIX each year (Based October to October).

P28.22 This agreement runs from 01/04/2004 to 31/03/2014 and includes a fixed monthly charge which varies according to the change in RPIX. RPIX is based on the Dec-Dec change. There are no volumetric charges associated with this discharge.

Table P29 Trade effluent charges to licensed providers through Schedule 3

P29.1 This line reports 730 customers who formerly received a harmonisation cap or where the level of treatment was less than secondary. There are approximately 65 companies whose charges are reduced because they discharge to a WWTP which provides less than full treatment. The confidence grade for the report year has been set at B2 to reflect the quality of data from the CMA. The forecast year +1 has been set at B3 to reflect the estimation.

P29.2 and 29.3 These lines reflect the Scottish Average Sewage Strength as published in the Scheme of Charges.

P29.4 The chargeable daily volume discharged by customers receiving a Schedule 3 discount has fallen from 58,293m³/d in 2007/08 to 48,167m³/d in 2008/09. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

P29.5 The billed settled BOD load has decreased from 26,204kg/d in 2007/08 to 25,252kg/d in 2008/09. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

P29.6 The billed suspended solids load in AR08 was 13,125kg/d. The Annual Return 2008/09 figure is comparable at 13,948kg/d. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

P29.7 The volume discharged by "non-deal" customers has fallen from 11.9Mm³ in 2007/08 to 10.5Mm³ in 2008/09. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

P29.8 There has been a comparable reduction in the Strength Adjusted Volume for settled COD discharged from 34.3Mm³ to 31.2Mm³. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

P29.9 The Strength Adjusted Volume for suspended solids for 2008/09 remains comparable to 2007/08 at 11.9Mm³. The confidence grades for both the report year, and the forecast year +1, have been set at B3 to reflect the quality of data from the CMA.

Table P30 Water - wholesale – non-primary revenue: wholesale revenue from charges to licensed providers through charges scheme

General Comment: P30 and P31

A confidence grade of B3 has been assigned for the report year and B4 for the forecast year+1.

P30.1 and 30.3 Verification of service provision and Temporary disconnection

The 2009/10 forecast was put together based on billed revenue at December 2008. A new billing system and associated processes for non-primary charges were implemented in 2008/09 and launched in the summer. The transition from manual to automated billing resulted in disruption to the billing run-rate as new processes bedded in and systems issues were fixed. At the time that the forecast was produced, billed revenue was still low so a

cautious position was taken. Revenues increased steadily towards the end of the year resulting in a better than expected out-turn. A confidence grade of B3 has been assigned for the report year and B4 for the forecast year +1 throughout P30, this reflects the embedding of new processes.

P30.4 Permanent Disconnection

A considerable backlog of Permanent Disconnections was billed in 2008/09 which inflated revenue. The 2009/10 forecast is based on the underlying run-rate excluding one-off items.

P30.5 Inspection Charges

All permanent disconnections have been carried out by Scottish Water as such no inspection charges were levied under this category.

P30.3 and 30.6 Temporary Disconnection and Reconnection charges

Temporary Disconnection charges in 2008/09 are higher than the 2009/10 forecast produced in December 2008 whilst Reconnections charges are lower. Experience in 2008/09 has shown that, in the majority of cases, where a Temporary Disconnection survey takes place, it does not proceed to full disconnection. This is because the overwhelming majority of temporary disconnections are for non-payment. LPs advise that, in most cases, the customer settles outstanding debts following the survey visit. This has resulted in lower Reconnection charges relative to Temporary Disconnections than had been expected.

P30.9 Metering services

Metering Services revenue has increased throughout 2008/09 which is reflected in a higher forecast for 2009/10 which is assumed to remain at the exit run-rate from 2008/09.

P30.11 – 30.14 Development services: Building water, water for building work

Total Building Water charges forecast for 2009/10 are double the actuals for 2008/09. This is because forecast charges for 2009/10 were developed in December 2008 when the likely level of building water revenue was expected to be higher going forward. Revenue for 2008/09 has out-turned lower than previously thought which is likely to be related to the economic downturn and impact on the construction industry.

No ‘Development Services: Building Water’ revenue is forecast for 2009/10. At the time that the 2009/10 forecast was produced it was not possible to distinguish Development Services: Building Water from other building water revenue, largely because billing was manual. Further analysis has since been carried out to estimate the proportion of building water revenue relating to line 11.

P30.16 Any other goods and services

The revenue shown for ‘Any other goods and services’ relates to charges for laboratory services. The first invoices for such services were issued in March 2008 so no revenue had been anticipated for 2009/10 when the forecast was produced.

P30.18-19 - These figures are provided through the Wholesale Revenue Team and align with the figures in the General Ledger.

Table P31 Wastewater - wholesale – non-primary revenue: wholesale revenue from charges to licensed providers through charges scheme

General Comment – See P30 commentary

P31.1 Verification of service provision

There are currently issues with the process and systems associated with Verification of Sewerage Supplies. Actions to resolve these issues are currently included in the development plan and, following completion of this work, charges will be invoiced for these activities. As a result there is no revenue shown for 2008/09 but a forecast has been included for 2009/10. A confidence grade of A1 has been assigned for the report year and B4 for the forecast year +1 throughout P31.

P31.11-12 - These figures are provided through the Wholesale Revenue Team and align with the figures in the General Ledger.