

Chapter 15

Non financial measures

Sewage treatment

Covering:
Sewage – loads
Sewerage service – facilities
Sewage sludge

Non financial measures

Chapter 15

Sewage treatment

Three tables have been provided. One for NI Water data only, a second for PPP data only and a third which will be the sum of the first two. NI Water should comment on any line where the third table data is not the sum of the first two and explain why this is the case.

These tables have three blocks and a total of 17 lines. The company must include inset appointments as they are part of the regulated business. Please provide details in your commentary of the amounts included for any inset appointments in the relevant lines.

The information in this table is used to assist in operating efficiency studies.

- **Sewage - loads**
This part of the table includes a breakdown of the pollution loads arising from the domestic population, trade effluent and tankered (i.e. septic tank, cesspool and industrial liquid waste) loads being treated by the company. It is important that the loads that are treated as part of the non-regulated business are included in the appropriate lines 1 to 7.
- **Sewerage service - facilities**
Records the total number of sewage treatment works and sea outfalls, numbers of sewage treatment works providing nutrient removal and UV disinfection, and the treatment capacity available.
- **Sewage sludge**
Records the total volume of sludge disposed and produced. These may not be the same in the report year due to the amount of stockpiled sludge. This part of the table also records the percentage of sludge disposal that is unsatisfactory, percentage of sludge produced that is managed in a satisfactory way and additional sludge arising from quality obligations since 1st April 2007 as a consequence of the SBP CWP.

Company commentary

The company should provide a clear statement in its commentary of the components of the sewage loads reported in Table 15. For each component of load, the company should provide a statement of how the load was calculated describing the primary sources of data used, the methodology used to process the data and the value and basis for any conversion factor used in the analysis to convert to BOD load or equivalent population. The commentary should include a breakdown of the total load received by the company in '000 tonnes of BOD per annum by each component used to build up the reported data.

The company should:

- detail any assumptions made in completing this table;
- state any COD to BOD conversion factor that it has used in completing the table;
- explain whether it has included re-circulated sludge/sludge liquors in the loads reported in lines 1 to 7, and if included, provide an indication of the size of these loads; and
- advise when the reported equivalent population figures were established, whether these were agreed with NIEA and whether these are consistent with the figures used by NIEA for the equivalent calendar year. The company is expected to report equivalent population figures on a consistent basis year-on-year and consistently throughout the annual information return. Any change in terms of how information is reported year-on-year, or any inconsistencies in reporting equivalent population figures

between tables, must be fully disclosed by the company in the commentary for Table 15.

The company should report all loads, including PPP loads on a consistent basis from a bottom up assessment of domestic population, trade effluent, tankered loads and contribution from holiday populations. Where the company has measured load data, this should be reported in a table in the commentary by works, comparing the estimated and measured loads. In its commentary, the company should provide its assessment and opinion of the difference in estimated and measured loads.

The company should set down any key assumptions used in calculating sludge production and disposal figures, e.g. regarding grit and screenings dry solids content, gas uplift allowance, etc. We have no requirements as to the methodology that the company should use in the derivation of these figures, other than that the methods for lines 15 and 16 should be consistent, and that any change in method from the previous year should be explained.

For line 14, percentage unsatisfactory sludge disposal, the company should give the reasons for unsatisfactory disposal in the commentary and the percentages affected.

Guidance to the Reporter

The reporter should:

- comment on the robustness of the systems and methodologies used to estimate the various components within the table with a particular emphasis on the accuracy with which sewage loads can be measured and calculated;
- confirm the correct reporting of PPP data;
- comment how this compares with the confidence grade assigned by the company; and
- comment on whether all assumptions have been revealed, and on the reasonableness of any assumptions made.
- comment on whether equivalent population figures have been reported on a consistent basis to previous years, whether they are consistent with figures reported on other tables of the annual information return and whether these are consistent with the figures used by NIEA for the equivalent calendar year.

Table 15 line definitions

A SEWAGE - LOADS

1	Trade effluent load receiving secondary treatment (BOD/year)	tonnes	1dp
Definition	This is the total trade effluent BOD pollution load receiving secondary treatment (or better) in tonnes BOD/year. This must be as billed and charged. This is the trade effluent load received by the works at which secondary treatment is provided.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

2	Total load receiving secondary treatment (BOD/year)	tonnes	1dp
Definition	This is the total load in tonnes BOD/year that receives secondary treatment (or better) at treatment works. The total load includes load from domestic population, trade effluent, tankered loads and holiday population.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

3	Total load receiving primary treatment only (BOD/year)	tonnes	1dp
Definition	This is the total pollution load in tonnes BOD/year that receives primary treatment. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Exclude effluent receiving only preliminary treatment and any load which receives secondary treatment or better.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

4	Total load receiving preliminary treatment only (BOD/year)	Tonnes	1dp
Definition	This is the total pollution load in tonnes BOD/year that receives only preliminary treatment. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Exclude any effluent which receives no treatment, or which receives primary treatment or better.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

5	Total load entering sewerage system (BOD/year).	Tonnes	1dp
Definition	This is the total pollution load in tonnes BOD/year that is discharged to the sewerage system. The total load includes load from domestic population, trade effluent, tankered loads and holiday population. Include loads discharged directly to sewage treatment works. Load shall be allocated between the NIW only and PPP tables on the basis of responsibility for the receiving works.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

6	Equivalent population served (resident)	000	2dp
Definition	Equivalent population should be calculated on the basis of 60g BOD ₅ per capita per day. Domestic population, trade effluent and tankered in effluents should be included in calculation. No account should be taken of holiday population.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

7	Equivalent population served (resident) (numerical consents)	000	2dp
Definition	Equivalent population should be calculated on the basis of 60g BOD ₅ per capita per day. Domestic population, trade effluent and tankered in effluents should be included in calculation. Imported effluents should be included in calculation. No account should be taken of holiday population.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

B SEWERAGE SERVICE - FACILITIES

8	Number of sewage treatment works	nr	0dp
Definition	Total number of sewage treatment works. Do not include screened overflows or screened outfalls as sewage treatment works.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Comparative Efficiency & Performance Team		

9	Treatment capacity available (BOD ₅ /day)	Tonnes	1dp
Definition	The average annual total treatment capacity available in BOD ₅ /day within the company's area of supply.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

10	Number of STWs providing nutrient removal	nr	0dp
Definition	The number of sewage treatment works providing purpose specific nutrient removal to meet numeric consent conditions relating to limits for total phosphorus and/or total nitrogen in the discharged effluent.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

11	Equivalent population served by STWs providing nutrient removal	000	2dp
Definition	The equivalent population (resident) served by sewage treatment works providing purpose-specific nutrient removal to meet numeric conditions relating to limits for total phosphorus and/or total nitrogen in the discharged effluent.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

12	Number of STWs providing pathogen reduction	nr	0dp
Definition	The number of sewage treatment works providing purpose-specific pathogen removal to meet consent conditions whether seasonal or all year round. STWs that provide UV irradiation and membrane filtration should be included.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

13	Equivalent population served by STWs providing disinfection	000	2dp
Definition	Equivalent population served by sewage treatment works providing purpose-specific pathogen removal to meet consent conditions, whether seasonal or all year round. STWs that provide UV irradiation and membrane filtration should be included.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

C SEWAGE – SLUDGE DISPOSAL

14	Percentage unsatisfactory sludge disposal	%	2dp
Definition	Percentage of total sludge disposal that is unsatisfactory. Give reasons for unsatisfactory disposal in the commentary and the percentages affected.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

15	Total sewage sludge produced	ttds	1dp
Definition	The total amount of sewage sludge produced during the report year expressed in thousands of tonnes of dry solids of sludge produced by the whole service.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

16	Total sewage sludge disposal	ttds	1dp
Definition	Total for all sewage sludge disposal. This should include disposal to farmland, landfill, incineration, composting and other routes. This may be different from line 15 – sewage sludge produced. If the amount of sewage sludge disposed of, is more than 5% different from the amount produced please give an explanation in the commentary.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

17	Additional sewage sludge arising from new quality obligations since April 2007	ttds	1dp
Definition	The net additional amount of sewage sludge produced by the end of the report year relative to end March 2007 as a result of implementing the quality enhancement through the SBP CWP since April 2007.		
Primary Purpose	Informing relative performance and efficiency assessments.		
Processing rule	Input		
Responsibility	Network Regulation Team		

CHANGE CONTROL SHEET

CHAPTER 15

2008/1.0	First issue of chapter for the SBP period
2009/1.0	Second issue of chapter for the SBP period <ul style="list-style-type: none"> - reporting requirements for the company and reporter in relation to equivalent population figures added - line 1 definition amended - Tables amended for PPP and NIW+PPP reporting
2010/1.0	Third issue of chapter for the SBP period <ul style="list-style-type: none"> - Additional sewage sludge to be reported from 1st April 2007. - Lines 1 to 7 definitions amended to expand on coverage of each line. - Requirement for commentary expanded to include a statement of the components of sewage loads and the basis for deriving each component.