



# **Emissions Reporting Guidance for the Public Waste Water Discharge Sector**

**For use in reporting of:**

**PRTR pollutants/priority substances via the UWW PRTR**

**Electronic Toolset V5.0**

(Commissioned in November 2012)

**Version 1.0 November 2012**

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## General Introduction

This document is addressed to **UWWTP operators** who are required to:

- Report their annual releases (mass emissions) under S.I. 123 of 2007, the Pollutant Release and Transfer Regulations<sup>1</sup>
- Submit an AER and PRTR report to the EPA under the conditions in their WWDL.

This guidance should be used in conjunction with the [AER PRTR UWW Reporting Guidance for Urban Waste Water Treatment Plants](#) which is available on the EPA website and provides all the information required for completing the PRTR submission for UWWTPs.

## Main Features of the new UWW PRTR Electronic Toolset V5.0

The toolset comprises a series of worksheets for estimating emissions to Air and Water from the facility. While the worksheets relating to Air has remained unchanged from the previous version of the e-tool, the worksheets relating to Water have been upgraded following an extensive characterisation study on a range of wastewater treatment plants. The study involving actual monitoring was carried out by Consultants with the Steering Group consisting of EPA and Local Authority senior staff. The final report is available on the Agency's website at the following link:

<http://www.epa.ie/downloads/pubs/water/wastewater/name,33984,en.html>

The worksheets are set out in the e-tool as follows:

### 1) Introductory Guidance

The main points of this worksheet include the following:

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<sup>1</sup> (European Communities (European Pollutant Release and Transfer Register) Regulation 2007, S.I. No. 123 of 2007 and S.I. 649 of 2011 ), which signed into Irish Law on 13 December 2011, the E-PRTR Regulation, (EC) No 166/2006, concerning the establishment of a European Pollutant Release and Transfer Register. These regulations are collectively referred to herein as the PRTR Regulations.

- It provides an overview of the user-friendly input and output colour-coded elements of the Toolset.
- It distinguishes between what the facility operator should record/input and what the e-tool will do automatically (output) through colour-coding.
- Background to the Toolset and the legal responsibility on the UWWTP/Discharge operator is provided.
- How to navigate through the pages of the Toolset and a reminder for the user to complete the worksheets in sequence.
- The automatic transfer of the measured and estimated data from the Toolset to the PRTR Emissions Reporting Workbook is also indicated on this sheet.

## 2) Wastewater Treatment Data Input – Effluent details:

The operator is required to record (input) the following information on this worksheet:

- Facility Name, Plant location, Reg. No. and the reporting year in the orange rows.
- Select from the drop down menus the applicable P.E. band, catchment characteristics and type of treatment most appropriate to their UWWTP/Discharge.
- The treated annual effluent flow via the main emission point and the fugitive emissions via storm bypasses (m<sup>3</sup>/annum). See detail on calculations below:

Total Annual Flow Calculations
Add all the daily flows together for the main emission point for which mass loadings are available (m <sup>3</sup> /day).
Monthly Flows can be used where daily flows are not available and can be added together for the main emission point (m <sup>3</sup> /day).
For the <u>fugitive emissions</u> : add the daily flows together for these emissions on the days recorded for storm events or other fugitive releases (m <sup>3</sup> /day). An estimate of the fugitive emissions via storm bypasses (m <sup>3</sup> /annum) can also be used.

### 3) Measured Values Worksheet:

- The operator is requested to prioritise the recording of **measured data** where it is available for the PRTR pollutants from monitoring programs such as the priority pollutants screening data required under Condition 4 of the Waste Water Discharge Licence (WWDL).
- The **measured data (concentration)** must be entered by the operator for each parameter (where it is available) as annual averages in mg/l. (See detail on calculation below). This measured data should be recorded for BOTH the main (predominant) emission AND fugitive emissions (storm overflows). The Toolset V5.0 converts the annual average concentrations recorded by the facility operator, automatically to annual mass emissions in kg/annum using the flow data recorded by the facility operator. Mass Emissions are shown in green on the Measured Values Worksheet.

#### Flow weighted mass emissions calculations for the measured parameters (in the case of daily analysis)

A - Sum of Daily Concentrations for the measured pollutants (mg/l)

B- The Annual Average Concentration in mg/l is calculated by dividing the sum of the daily concentrations for each pollutant by the total number of days for the year or the number of days for which measured data is available.

$$B \text{ (mg/l)} = A \text{ (mg/l)} / \text{no. of days}$$

Similar calculations can be made for measured parameters in the fugitive releases.

- **Method Codes** must be entered by the operator for each measured parameter for PRTR reporting purposes. Method Codes are used to describe how an emission was measured, calculated or estimated. Selection of the Method Code can be achieved by double clicking on the required cell under the Method Code column. Method descriptions can be typed into the Method Description field.  
  
Here is an example of two method codes commonly used by the wastewater treatment plant operatives:

- If you are using an approved **ISO/CEN Standard** then this becomes the method code and no description is required. For example for Total Nitrogen analysis: Method Code EN ISO 11905-1:1998
- If your laboratory is using the Standard Methods for Water and Wastewater 21<sup>st</sup> Edition for Total Nitrogen: Method Code **OTH** can be used.
- Examples are provided on the **Measured Values Worksheet** and also further highlighted in **Appendix 1** below.

#### 4) Water Emissions Estimates:

- There is no data entry requirement for facility operators on this worksheet.
- This sheet merely displays the emission concentrations appropriate to the catchment characteristics, type of treatment and the PE band selected by the operator on the Wastewater Treatment Data Input sheet and records the Total Mass Emissions for each parameter.
- The Toolset **estimates**, where measured data has not been recorded by the facility operator (on the Measured Values Worksheet), the annual mass emissions in kg/annum of treated effluent discharges and fugitive emissions.

#### 5) Releases to Water Output Table:

- There is no data entry requirement for facility operators on this worksheet.
- This sheet summarises the measured and estimated annual mass emissions of the PRTR pollutants for the selected UWWTP/Discharge based on the facility operator's inputs.
- It can be used by facility operators to view the generated data; the type of measurement (measured or estimated); the calculated data and for comparison with the reporting threshold for each parameter under the PRTR Regulations (Regulation (EC) No. 166/2006).
- The data is ready for **automatic transfer** to the PRTR Emissions Reporting Workbook for reporting via the [aer reporting section](#) of the EPA website.
- How to transfer to the PRTR Workbook:

- When you are satisfied with all the data displayed:
  - 1) Click on the red arrow **Export Data to PRTR Workbook**
  - 2) Select the correct **AER/PRTR Emissions Reporting Workbook** from your pc for the specified UWWTP (The **PRTR Workbook must be closed** so that the macro will run correctly). When the data is being transferred please click OK to approve each entry to the PRTR Workbook as required.
  - 3) Once the data is transferred, the operator can edit the information within the **AER/PRTR Emissions Reporting Workbook** if required and can add the waste transfer's information to the **Treatment and Transfers of Waste Tab**.
  - 4) Please refer to the [AER PRTR UWW Reporting Guidance for Urban Waste Water Treatment Plants](#) for further information.

## 6) Common Errors:

- Incorrect use of method codes.
- Incompletion of the method descriptions
- Incorrect unit conversions.
- Inconsistent reporting i.e. reporting a pollutant one year and not the next.
- Not reporting all pollutants that were measured including the licensed parameters.
- Not using the automatic transfer to the PRTR Workbook functionality – manual entry of data in the PRTR Workbook can lead to reporting errors and typos.

## Appendix 1

Common Method Codes for Releases to Air, Water & Wastewater / Sewer			
Method Code	M/C/E	Where this code is applicable	Designation or Description
ALT	M	Is applicable if the facility is using a CEN or ISO standard but not the one on the approved list in the PRTR Guidance.	Name of the ISO /CEN Standard
OTH	M /C	If the method or the calculation does not fall under any of the method codes e.g. in-house methodology not based on CEN/ISO standard.	Brief & specific description of the method / Calculation used.
CRM	M	If a lab/facility is using a non-ISO/CEN Method that is validated and accredited or has been accepted by the Agency.	Name of the non-ISO/CEN Method
ETS	C	If a facility is registered as part of the Emission Trading Scheme.	Leave Blank
PER	M/C	This is only applicable if the facility's license specifies a specific standard method to use e.g. Use ISO/CEN... If you license states to use "Standard Methods" or a particular piece of equipment this does not fall under PER.	Name of the prescribed standard
NRB	M/C	Not Applicable to Irish Licenses.	-
MAB	C	Used for the calculation of fugitive emissions.	Brief & specific description of the Calculation used.
SSC	C	The only European wide sector specific calculation method used in Ireland is for Greenhouse methods and this is covered by ETS.	-
ESTIMATE	E	Estimates are used when the releases are determined by best assumptions or expert guesses that are not based on publicly available references or in case of absence of recognised emission estimation methodologies or good practice guidelines.	Leave blank, however a detailed description of how the estimation was undertaken must be outlined in your Annual Environmental Report (AER)

**Approved ISO/CEN Standards for Determination of Releases to Water or Wastewater / sewer:**

Method Code	M/C/E	Where this code is applicable	Designation or Description
EN ISO 10301:1997	M	1,2-dichloroethane (EDC), dichloromethane (DCM)	Leave Blank
EN ISO 15680:2003	M	1,2-dichloroethane (EDC), dichloromethane (DCM), tetrachloroethylene (PER), trichlorobenzenes (TCBs) (all isomers), trichloroethylene, trichloromethane, vinyl chloride, benzene, ethyl benzene, naphthalene, toluene, xylenes	Leave Blank
EN ISO 6468:1996	M	Aldrin, DDT, dieldrin, endosulfan, endrin, heptachlor, hexachlorobenzene (HCB), 1,2,3,4,5,6- hexachlorocyclohexane (HCH), lindane, pentachlorobenzene, polychlorinated biphenyl's (PCBs)	Leave Blank
EN ISO 17993:2003	M	Anthracene, naphthalene, polycyclic aromatic hydrocarbons (PAHs), flouranthene, benzo(g,h,i)perylene	Leave Blank
EN ISO 11969:1996	M		
EN 26595:1992	M		
		Arsenic & Compounds (as As)	Leave Blank
EN ISO 10695:2000	M	Atrazine, Simazine	Leave Blank
EN ISO 11423-1 to 2:1997	M	Benzene	Leave Blank
ISO 22032	M	Brominated Biphenyl ethers (PBDE)	Leave Blank
EN ISO 5961:1995	M	Cadmium & Compounds(as Cd)	Leave Blank
EN ISO 15682:2001	M	Chlorides (as total Cl)	Leave Blank
EN ISO 10304-1 to 4:1995	M	Chlorides (as total Cl), Fluorides (as total F)	Leave Blank
EN 1233:1996	M	Chromium & (as Cr)	Leave Blank
EN ISO 14403:2002	M	Cyanides (as total CN)	Leave Blank
EN ISO 18856:2005	M	Di-(2-ethyl hexyl) phthalate (DEHP)	Leave Blank



**Approved ISO/CEN Standards for Determination of Releases to Water or Wastewater / sewer:**

Method Code	M/C/E	Where this code is applicable	Designation or Description
EN ISO 11369:1997	M	Diuron, Simazine	Leave Blank
EN ISO 9562:2004	M	Halogenated Organics (as AOX)	Leave Blank
EN 1483:1997	M	Mercury & Compounds (as Hg)	Leave Blank
EN 12338:1998	M		
EN 13506:2001	M		
EN ISO 17353:2005	M	Organotin (as total Sn), Tributyltin, Triphenyltin & Compounds	Leave Blank
ISO 18073:2004	M	PCDD + PCDF (dioxins + furans) (as Teq)	Leave Blank
ISO 18857-1:2005	M	Phenols (as total C)	Leave Blank
ISO 7981-1 to 2:2005	M	Polycyclic Aromatic Hydrocarbons (PAHs)	Leave Blank
EN 1484:1997	M	Total Organic Carbon (TOC) (as total C or COD/3)	Leave Blank
EN 12260:2003	M	Total Nitrogen	Leave Blank
EN ISO 11905-1:1998	M		
EN ISO 15681-1 to 2:2004	M	Total Phosphorous	Leave Blank
EN ISO 6878:2004	M		
EN ISO 11885:1997	M	Total Phosphorous, Cadmium, Chromium, Copper, Nickel, Lead and zinc	Leave Blank