

SNAP CODE: **091001**
091002

SOURCE ACTIVITY: **OTHER WASTE TREATMENT**
Waste Water Treatment in Industry
Waste Water Treatment in Residential/Commercial Sectors

NOSE CODE: **109.02.41**
109.02.42

NFR CODE: **6 B 1**
6 B 2

1 ACTIVITIES INCLUDED

The installations described are biological treatment plants. During the treatment process carbon dioxide, methane, and nitrous oxide can be produced. The emission factors given apply to a typical installation in the Netherlands in 1993.

This chapter was originally written for SNAP90 code 090100 Waste Water Treatment which covered the Industry and Residential/Commercial Sectors without differentiation.

2 CONTRIBUTION TO TOTAL EMISSION

The contribution of the emissions into air is minor, and only of local importance.

Table 1: Contribution to total emissions of the CORINAIR90 inventory (28 countries)

Source-activity	SNAP-code	Contribution to total emissions [%]							
		SO ₂	NO _x	NMVOC	CH ₄	CO	CO ₂	N ₂ O	NH ₃
Waste Water Treatment	090100 *	0	0	0.1	0.5	-	-	0.4	0.2

* = SNAP90 code

0 = emissions are reported, but the exact value is below the rounding limit (0.1 per cent)

- = no emissions are reported

These activities are not believed to be a significant source of PM_{2.5} (as of December 2006).

3 GENERAL

3.1 Description of activities

3.2 Definitions

The main type of wastewater treatment plants in the Netherlands are low-load biological treatment plants with aeration by point aerators. For dephosphatizing the simultaneous

process is mostly used. Denitrification generally occurs by creating anaerobic zones in the wastewater treatment basin.

4 SIMPLER METHODOLOGY

A calculation of the emissions from wastewater treatment plants should be based on a summation of emissions from individual plants. The emission factors given below should only be used as default values.

5 DETAILED METHODOLOGY

Emission calculations should be based on plant specific conditions.

6 RELEVANT ACTIVITY STATISTICS

In the Netherlands statistical material about individual wastewater treatment plants is gathered yearly by the Central Bureau of Statistics. The enquiry includes information about the load, the effluent and sludge quality, as well as economical aspects.

7 POINT SOURCE CRITERIA

8 EMISSION FACTORS, QUALITY CODES AND REFERENCES

Table 2: Emission factors for emissions to air from wastewater treatment plants

Substance	Emission factor	
	kg.ie ⁻¹	g m ⁻³
Emission to air		
carbondioxide	27.4	339.1
methane	0.3	3.7
dinitrogenoxide	0.02	0.25

i.e.: capita equivalent

The emission factors are based on mean values for the situation in the Netherlands in 1991. They can therefore not be applied to an individual plant, and give only a first approximation of the emissions. The accuracy classification is estimated to be D.

9 SPECIES PROFILES

10 UNCERTAINTY ESTIMATES

11 WEAKEST ASPECTS/PRIORITY AREAS FOR IMPROVEMENTS IN CURRENT METHODOLOGY**12 SPATIAL DISAGGREGATION CRITERIA FOR AREA SOURCES****13 TEMPORAL DISAGGREGATION CRITERIA**

Wastewater treatment is generally a continuous process.

14 ADDITIONAL COMMENTS**15 SUPPLEMENTARY DOCUMENTS****16 VERIFICATION PROCEDURES**

Emissions calculated should be compared with measurements at an individual plant.

17 REFERENCES

- 1 WESP document "RIOOLWATERZUIVERINGSINRICHTINGEN (RWZI's) RIVM report 7730030003, RIZA report 93.046/M1 (in dutch)
- 2 C.Kroeze (1994). Nitrous oxide emission inventory and options for control in the Netherlands. RIVM report 773001004

18 BIBLIOGRAPHY**19 RELEASE VERSION, DATE AND SOURCE**

Version: 1

Date: November 1995

Source: J.J.M. Berdowski, P.F.J van der Most
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December 2006

20 POINT OF ENQUIRY

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