



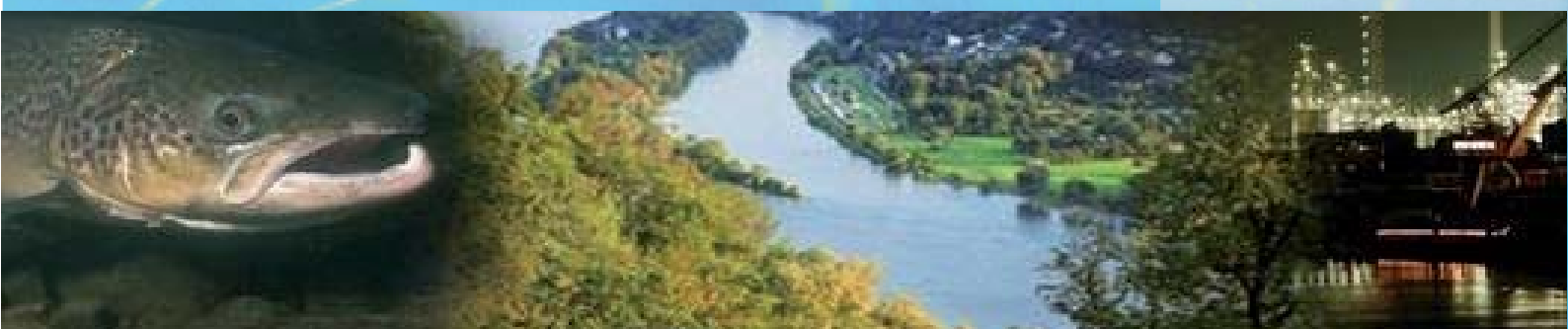
Warning and Alarm Plan Rhine - Reported incidents 2013 -

Internationale
Kommission zum
Schutz des Rheins

Commission
Internationale
pour la Protection
du Rhin

Internationale
Commissie ter
Bescherming
van de Rijn

Report No. 217



Imprint

Publisher:

International Commission for the Protection of the Rhine (ICPR)

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ISBN-Nr 978-3-941994-62-1

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1. Introduction

WAP objectives

The objective of the Warning and Alarm Plan (WAP) is, to pass on reports on sudden pollutions with substances noxious to water in the Rhine catchment if the amount and concentration may detrimentally impact the water quality and/or biocoenosis of the Rhine and to warn the authorities in charge of fighting accidents.

The WAP distinguishes between warnings, information and search reports.

The International Main Alert Centres (IHWZ) (see annex 1) issue **warnings** in cases of water pollution incidents implying substances noxious to water, if the amounts or concentrations concerned may detrimentally impact the water quality of the Rhine or drinking water supply along the Rhine.

An **information** is issued in order to give the IHWZ objective, factual and reliable information independent of the media. Furthermore, the IHWZ inform all Rhine bordering countries in cases of excesses of guidance values. As a precautionary measure, information is also passed on to the drinking water works.

Search reports are issued, in order find the polluter of the Rhine in cases not located within the area of responsibility of an IHWZ.

2. Summary of the reports in 2013

Table 1: Summary of the reports in 2013 (number)

Number of incidents	oil	chemical substances	Accidents in navigation without pollution waves
Total 35	4	29	2
Warnings 1	0	1	0
Information 34	4	28	2
Search reports ¹ 4			

It may be stated (see Table 3 and Graph 2) that the number of reports (35) (see annex 3) has risen as compared to last year (24) and has thus almost reached the level of 2005.

Compared to 2007/2009 and 2010/2012, a further fall in the number of reports due to water pollution events triggered by navigation is to be stated in 2013. This fall in the number of reports is caused by the particular sensitization of inland navigation, producers of chemicals and the public for this issue.

Origin of reports

While, in 2013 as in previous years, the majority of reports (24) was issued by the International Main Warning Centre (IHWZ) R6 in Düsseldorf (see annex 1), 7 reports were issued by the IHWZ R5 in Mainz, 2 by the IHWZ R3 in Karlsruhe, and 3 each by the IHWZ R4 in Wiesbaden and the IHWZ R1 in Basel. In 2013, more than half (23) of the 35 reports were due to measurements at the monitoring stations and were not reported by the polluting companies or ships. Most reports were issued by the international monitoring station Bimmen-Lobith jointly operated by the Netherlands and Germany. 4 reports were issued by industrial plants while no reports were issued by navigation. In 2013, 2 reports were due to accidents in navigation, but did not lead to any deterioration of the Rhine water quality. Potentially detrimental effects for the Rhine water quality were avoided by timely and appropriate measures (see annex 3).

¹Since search reports were also passed on as information, they are not included in the total number of reports issued.

For 2013, as for previous years, it must also be underlined that in spite of the considerable efforts of the river police, the possibilities to find the polluter of discharges from navigation remain limited.

Type of pollution waves

Table 2: Type, date and location of the 33 pollutant waves

Number and type of pollutant waves	Peak concentrations (µg/l)	Location, river or reach of river	Reporting period	
			Start	End
Five isoproturon / chlorotoluron	0.16	Bad Godesberg	16.01.	16.01.
	0.11	Bimmen	27.04.	28.04.
	0.58	Bad Godesberg	28.10.	06.11.
	0.15	Bimmen	30.10.	06.11.
	0.15	Bad Honnef	05.12.	10.12.
Four benzene	4.5	Bimmen-Lobith	09.01.	10.01.
	0.73	Lobith	21.01.	21.01.
	Approx. 3.4	Düsseldorf	29.10.	30.10.
	4.3	Bimmen	03.12.	03.12.
Four oilfilms	-	Rhine-km 455 to 529	23.01.	23.01.
	-	Harbour Hitdorf	28.04.	28.04.
	-	Mannheim	29.06.	29.06.
	-	Rhine-km 322 to 333	18.08.	18.08.
Tetrapropyl-ammonium cation	12	Bimmen	27.03.	06.05.
	4.5	Bad Honnef	20.09.	22.11.
One wave each:				
Cyclohexane	3.1	Bad Honnef	29.01.	29.01.
EDTA	2.4	Ludwigshafen	01.02.	01.02.
MTBE/ETBE	8.5	Bimmen	25.02.	25.02.
Toluene	1.3	Bimmen	27.02.	27.02.
N-methyldiethanolamine	-	Ludwigshafen	05.05.	05.05.
dieldrin	0.3	Worms	20.06.	23.06.
fire fighting water	-	Ludwigshafen	23.06.	23.06.
terbutylazine	0.11	Bad Honnef	02.07.	09.07.
dichloromethane	4.7	Düsseldorf	09.07.	09.07.
ethylpropylamin	-	Ludwigshafen	18.07.	19.07.
tetraglyme	2.9	Weil am Rhein	13.08.	23.08.
Unknown substance	Approx. 4	Bimmen	11.09.	21.09.
styrene	19	Bimmen	03.10.	04.10.
butanol	-	Ludwigshafen	23.10.	23.10.
tributyl phosphate	4	Wesel	25.10.	25.10.
isophorone	6.6	Götterswickerhamm	05.01.	05.01.
ethylendiamine	-	Ludwigshafen	20.12.	20.12.
methyl methacrylate	3.8	Düsseldorf	23.12.	23.12.

It should be underlined, that when determining the source of the two waves of tetrapropylammonium (information no. 11 and 24 of annex 3), two urban wastewater plants were identified as being the source. In a first step, immediate measures were tak-

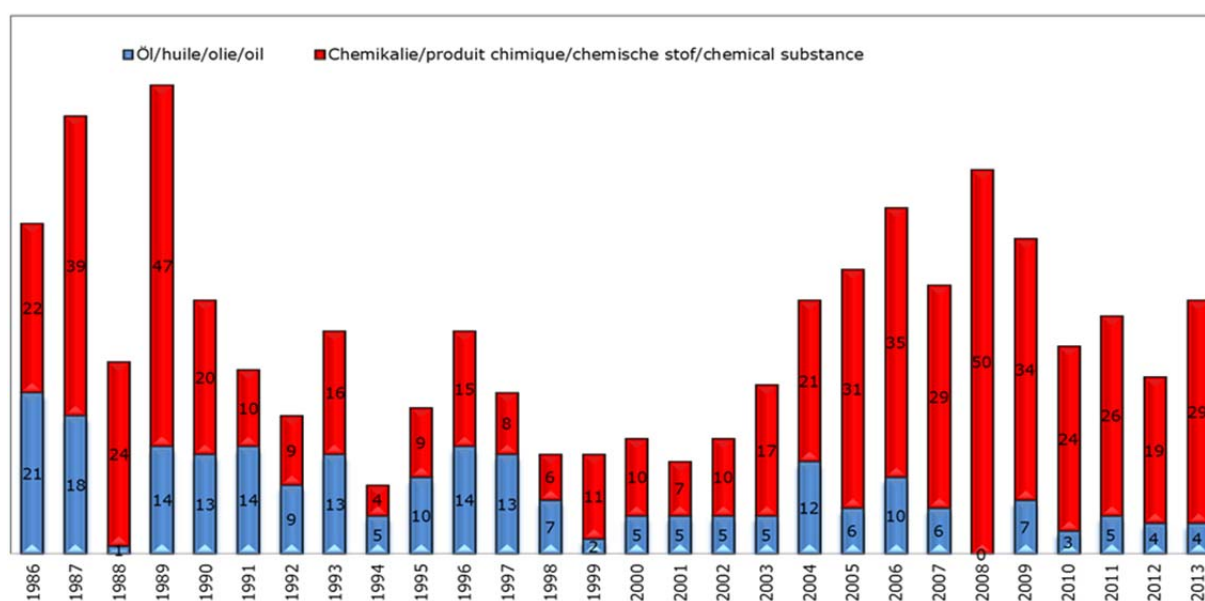
en which reduced the pollutant charge emitted by an indirect discharger by about 95 %. Further measures are examined in order to reduce the residual charge.

Raw water extraction for drinking water production

The drinking water works are informed of water pollution within the Warning and Alarm Plan, but act on their own behalf when the raw water intake must be stopped. During the isoproturon/chlorotoluron waves (see also ICPR reports no. 211, 150 and 135) between October 30 and November 6, 2013 (see table 2) the raw water intake in Nieuwegein/Netherlands was reduced for 11 days. A further reduction of raw water intake at the same location was required for 4 days in April following a pollution event implying terphthalic acid.²

Long-term development of WAP reports

Graph 1: Development of the number of WAP reports on oil and chemical pollution for the period 1986 to 2013



During the period from the end of the 1980s until the end of the 1990s, the number of reports on chemical and oil pollutions fell (see Graph 1), amounted to 12 to 15 reports between 1998 and 2003, reached a maximum of 50 reports in 2008, fell back to 23 reports in 2012 and rose again to 33 in 2013. Since 2003, a rise in the total number of reports has been registered (see Graph 2 and Table 3) with a peak of 50 reports in 2008 (with on average one warning per year). Until 2012, the number of reports sank to 24 and again rose to 35 in 2013. The difference between the total number of reports and the sum of reports on oil and chemical pollution can be explained by events without pollution waves (see e.g. Table 1)

3. Development of MTBE/ETBE reports

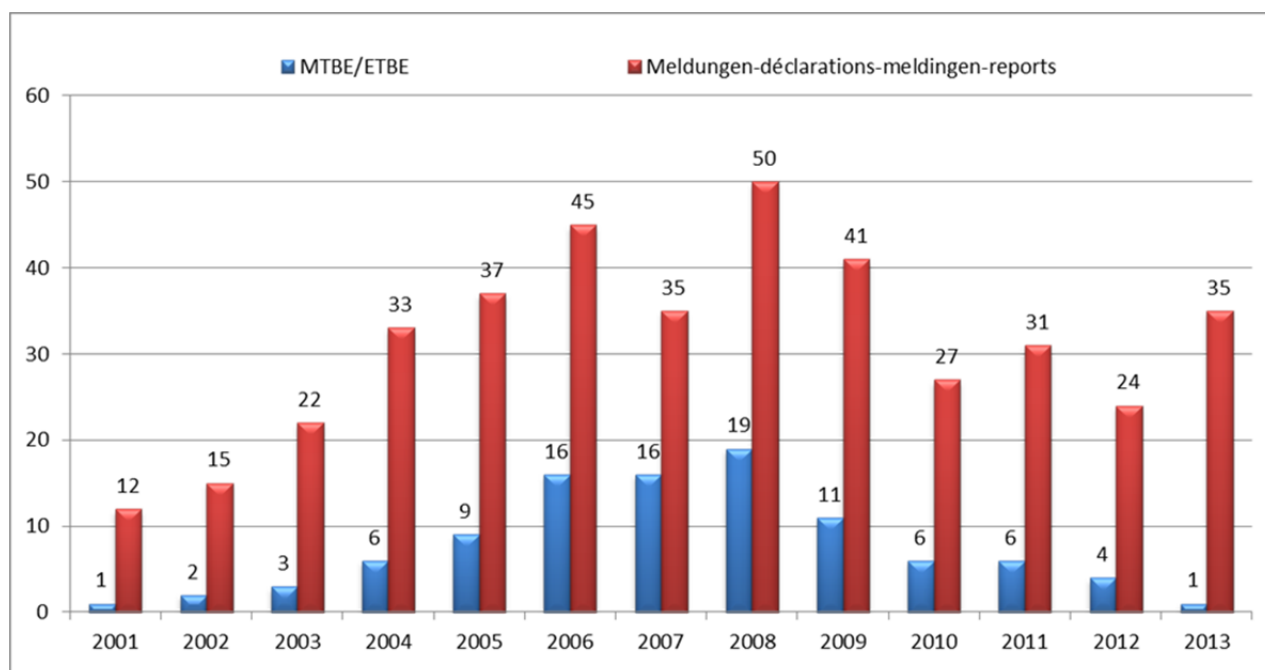
Table 3: Development of MTBE/ETBE reports (number)

Year	MTBE/ETBE	Total number of WAP-reports
2001	1	12
2002	2	15
2003	3	22
2004	6	33
2005	9	37

² IAWR information

Year	MTBE/ETBE	Total number of WAP-reports
2006	16	45
2007	16	36
2008	19	50
2009	11	41
2010	6	28
2011	6	31
2012	4	24
2013	1	35

Graph 2: Development of the number MTBE/ETBE reports and of the sum of WAP reports during 2001 to 2013



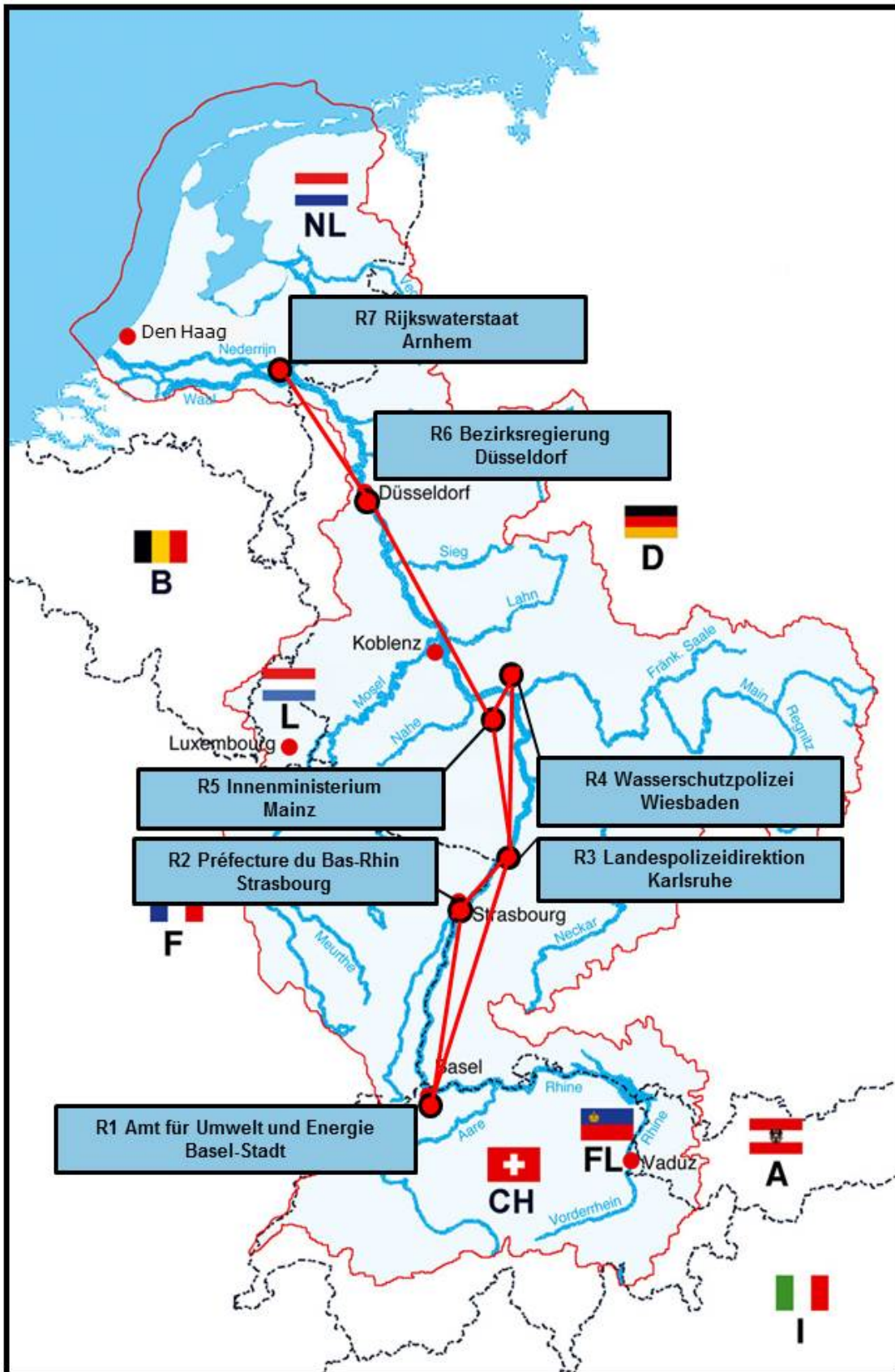
Development of MTBE/ETBE WAP reports

The first time MTBE (guidance value 3µg/l) was reported within the Warning and Alarm Plan was in 2001. Until 2006, the number of reports increased, with a maximum of 19 reports registered in 2008, the number of reports then again fell to 1 in 2013.

Experts generally believe **peak discharges** to originate from **tankers**.

Further details on MTBE are listed in the compendium of WAP reports 2010 and 2012 on the ICPR website (ICPR reports no. 191 and 205).

Map of the International Main Warning Centres (IHWZ), state 2013



Map with Rhine kilometre indications

