

Warning and Alarm Plan Rhine

Reported incidents 2009



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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 watershed, if the amount and concentration may detrimentally impact 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 and/or are liable to raise great public interest.

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.

Within the Warning and Alarm Plan, the international main warning centre R7 is only one obliged to send reports to international main warning centres upstream in case of all clear signals for river sections and in case of search messages. Therefore, this compendium does not include any information and warnings in the Dutch part of the Rhine catchment.

2. Summary of the reports in 2009

Table 1: Summary of the reports in 2009 (number)

| | | Oil | Chemical substances | Thereof MTBE/ETBE |
|-------------------------------|----------|----------|---------------------|-------------------|
| Total | 41 | 7 | 34 | 11 |
| Warnings | 2 | 1 | 1 | 0 |
| Information | 39 | 6 | 33 | 11 |
| Search messages ¹⁾ | 2 | | 2 | 0 |

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

Compared to the previous year (50 messages), the number of messages (41) has again diminished. Compared to the previous year, there were 2 warning reports in 2009, contrary to 2008, and there were again 7 reports of oil spills. The number of MTBE/ETBE waves is unchanged: 11, but the number of mixed waves (3) is lower than in the previous year (8).

The biocoenosis of the Rhine or drinking water supply was not endangered at any time. Contrary to 2008, raw water intake from the Rhine for drinking water production was not stopped in 2009.

In 2009, as previously, the prevailing number of messages was issued by the international main warning centre R6. In 2009, more than 90 % of the reports were due to monitoring results at the monitoring stations and were not reported by the polluting companies or ships. It must also be underlined that the possibilities to find the polluter remain limited in spite of the considerable efforts of the river police.

WAP and the media interest

Due to a breakdown, up to ten tons of a chemical substance (HPN) produced by BASF flowed into the Rhine near Ludwigshafen. The intermediate product HPN escaped through the cooling water system as a result of a defective connection. HPN used for the production of paint is classified as slightly hazardous to water. The leakage of the chemical substance was stopped. As a matter of precaution, the fire brigade on site pumped the water out of the cooling water channel concerned and led it into the wastewater treatment plant. As a matter of precaution, the breakdown was reported as information over the Warning and Alarm Plan (information report no. 19 in annex 2).

In the beginning of September 2009 (2nd warning in annex 2), the collision of a German tanker with a Dutch pushing unit near Kleve (Rhine kilometre 856) gave rise to the interest of the media, when 30 tons of gas oil flowed into the Rhine and further downstream. The average was reported in a warning. The averaged tanker which originally carried a freight of about 1,000 tons was lightened and the leakage was stopped. The gas oil remaining in the averaged tanker was taken over by another vessel.

Organisational changes and public relations

During the year under report, uniform orientation values for concentrations and loads for the entire course of the Rhine were determined. Orientation values are an important help to decide whether to issue an information, warning or search message over the Warning and Alarm Plan Rhine. So far, orientation values only applied to the international monitoring station Bimmen/Lobith. The new orientation values apply to the following monitoring stations:

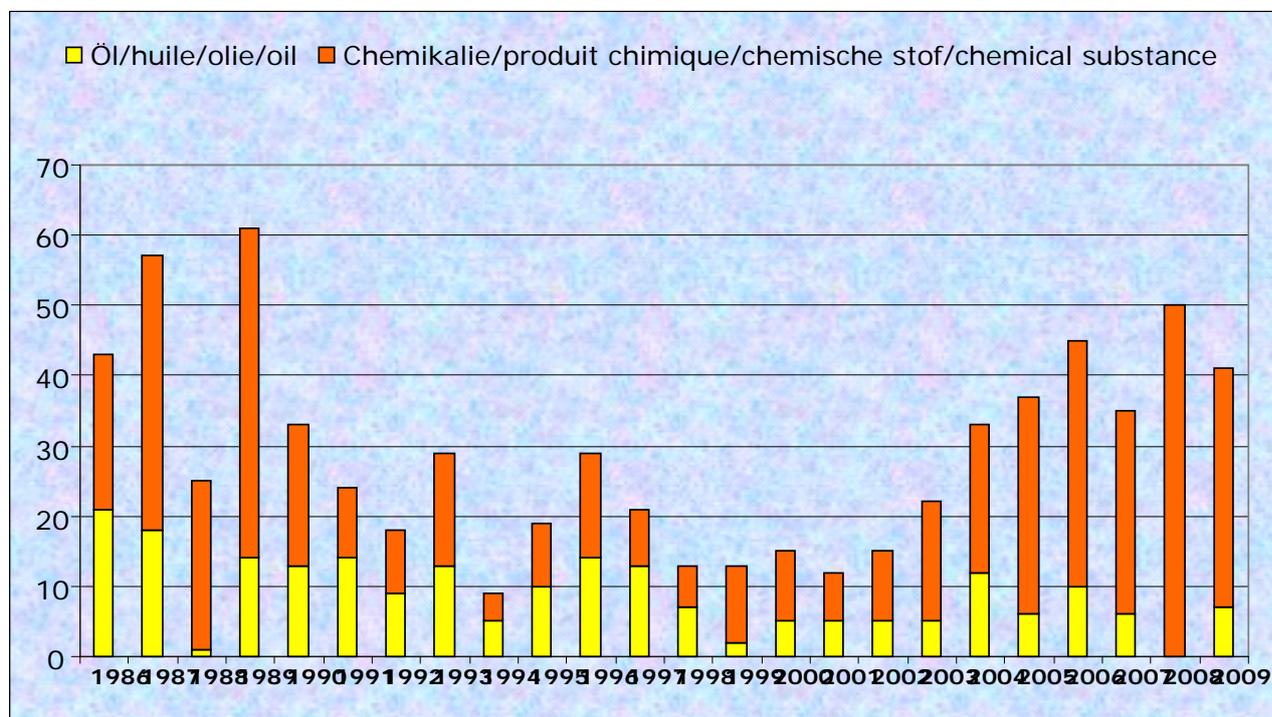
- Weil am Rhein (CH;D)
- Karlsruhe/Lauterbourg (D; F)
- Worms (D)
- Bad Honnef (D)
- Düsseldorf/Flehe (D)
- Bimmen/Lobith (D,NL)

Orientation values have been determined for 21 substances/substance groups or measurement categories.

In 2009, the ICPR website concerning the WAP was updated to be comprehensible for the great public and an easily understandable page on the Rhine Alarm model was added.

3. Long-term development of WAP reports

Graph 1: Development of WAP messages 1986 to 2009



The overall number of WAP-reports (information and warnings; diagram 1) has sunk from the end of the 80s to the end of the 90s. Until 2002, its number was constant: 12 reports (annually on average one warning). Since 2003, the number of reports, particularly of reports concerning chemical substances, is again increasing and reached a peak with 50 reports in 2008. In 2009, the number fell to 41 reports. The increased number of reports on chemical substances from 2003 on is in particular due to the improved possibilities of analysis in some monitoring stations. In 2009, as in the preceding years, almost all reports were issued by the international warning centre R6.

Map of the international main warning centres



Annex 2: Compilation of all reports in 2009

| Warning | Information | Search report | IHWZ | Date of report | River km | Location | Substance | Concentration peaks in µg/l | Length of film in km | Content of report |
|---------|-------------|---------------|----------|----------------------|-------------|---------------------------|---------------|-----------------------------|----------------------|--|
| | 1 | | R6 | 09.01.09 | 865 | Bimmen/Sachtleben | o-Xylol | 3,3 | | Wave, presumably tanker |
| | 2 | | R3 | 19.01.09 | 399 – 429,5 | | Oil | | 10,5 | Polluter presumably tanker. Presumably, the oil film consisted of gas oil. Intervening forces determined the origin on site. |
| 1 | | | R6 | 21.01.09 | 865 | Bimmen | o-Xylol | 11,6 | | Polluter presumably tanker |
| | | | | | | Benzene | 6,3 | | | |
| | | | | | | 1,2,4 Trimethylbenzene | 7,0 | | | |
| | 3 | | R6 | 26.01.09 | 865 | Bimmen | MTBE | 5,1 | | Polluter presumably tanker |
| | 4 | | R3 | 06.02.09 | 30 | Singen | lopamidol | | | Due to an erroneous discharge at Nycomed near Singen, 370 kg lopamidol accidentally flowed into the wastewater treatment plant Bibertal-Hegau and into the Rhine. Analysis results of retain samples were communicated. |
| | | | | 19.02.09 | 359,2 | Karlsruhe/ Lauterbourg | | | | |
| | 5 | | R6 | 06.02.09 08.02.09 | 794 | Bimmen/Orsoy | ETBE | 20,0 | | Polluter presumably tanker Final report |
| | 6 | | R6 | 09.02.09 | 865 | Bimmen | m/p Xylol | 4,0 | | Wave, presumably tanker. |
| | 7 | 1 | R6 R3 | 08.02.09 09.02.09 | 640 | Bad Honnef | Triacetonamin | 3,9 | | The source of the concentrations measured in Worms is presumably the company CIBA Spezialitätenchemie in Lampertheim. (Hesse). No need for action for Baden-Württemberg. TAA arises in the wastewater at Ciba-Lampertheim and is limited by COD. Although the COD value was not exceeded, the TAA share distinctly rose in the outlet (due to modified biocoenosis in the biological wastewater treatment plant and too low wastewater temperature). Reply search message. The substance is not determined in the Weil monitoring station. |
| | | | R4 | 10.02.09 | | Worms | | 6,7 | | |
| | | | R1 | | | | | | | |

| Warning | Information | Search report | IHWZ | Date of report | River km | Location | Substance | Concentration peaks in µg/l | Length of film in km | Content of report |
|---------|-------------|---------------|----------|----------------------|------------------------|----------------------------|--------------------------------------|-----------------------------|----------------------|---|
| | 8 | 2 | R6 | 09.02.09 | 640 | Bad Honnef | Diglyme | 4,7 | | Input presumably upstream of the mouth of the Moselle. |
| | | | R3 | 10.02.09 | 359,2 | Karlsruhe/ Lauterbourg | Triglyme | | | Same report as search message. |
| | | | R1 | | 171,3 | Weil am Rhein | | | | Reply to search report. All values measured at the Karlsruhe monitoring station are below the orientation values. |
| | | | R2 | 13.02.09 | | | | | | Reply to search report. Part of the pollution in Bad Honnef is due to a known discharge in Basel-Land (CH). |
| | | | R5 | 18.02.09 | | | | | | Reply to search report. No pollution within the area of responsibility of R2. |
| | 9 | | R6 | 19.02.09 | 733 | Düsseldorf-Flehe Bimmen | Toluene (Benzene) | 4,0 | | Reply to search report. The origin of the values measured in Bad Honnef is presumably a source downstream of Mainz-Wiesbaden. |
| | 10 | | R6 R3 | 26.02.09 02.03.09 | 640 | Bad Honnef | ETBE | 5,4 | | Wave, presumably tanker |
| | 11 | | R2 | 13.03.09 | Oberhalb von Km 168 | Ottersheim | Hydrocarbons | | 3 - 4 | Wave, presumably tanker |
| | 12 | | R6 | 13.03.09 | 865 | Bimmen/Lobith | Benzene | 30,0 | | Reply to search report. No ETBE discharges in the area of responsibility of R3. |
| | 13 | | R6 | 24.03.09 | 865 | Bimmen | Xylol | 3,2 | | Polluter presumably tanker |
| | 14 | | R6 | 30.04.09 | 865 | Bimmen | MTBE | 53,0 | | Polluter presumably tanker |
| | 15 | | R6 | 01.05.09 | | Stürzelberg | MethylIsoButylKeton (MIBK) | 3,0 | | Due to operating trouble at the Currenta, Chemiepark Dormagen, a maximum of 1,000 kg entered the wastewater treatment plant. About 14 mg/l MIBK flowed through the wastewater treatment plant and into the Rhine. |
| | | | | 11.05.09 | | Zons | | 5,4 | | |

| Warning | Information | Search report | IHWZ | Date of report | River km | Location | Substance | Concentration peaks in µg/l | Length of film in km | Content of report |
|---------|-------------|---------------|----------------------|--|------------------------|--|---------------------------------|-----------------------------|----------------------|--|
| | 16 | | R6 | 15.05.09 | 865 | Bimmen/Lobith | Benzene | 3,1 | | Polluter presumably tanker |
| | 17 | | R6 | 07.06.09 | 875 | Kleve | Colza oil | | 5 | During a bunkering accident an unknown amount of colza oil flowed into the Rhine. Oil polluted birds were found in the nature protection area Salmort. |
| | 18 | | R6 | 16.06.09 | 732,2 | Düsseldorf-Flehe | MTBE | 6,0 | | Polluter presumably tanker |
| | 19 | | R5 R6 R5 R6 | 22.06.09 25.06.09 26.06.09 | 640 865 | Ludwigshafen Bad Honnef Bimmen | HPN CAS no. 1115-20-4 | 17,0 | | Due to operating trouble at BASF, about 10 tons of HPN flowed through a cooling water canal and into the Rhine. The discharge was stopped. Calculations for Bad Honnef applying the Rhine Alarm Model Calculation for the Mainz monitoring station applying the Rhine Alarm Model The wave arrives in Bimmen. |
| | 20 | | R6 | 24.06.09 | 732,2 | Düsseldorf-Flehe | MTBE | 7,9 | | Polluter presumably tanker |
| | 21 | | R6 | 28.06.09 | 735,5 | Gilbach (R. Erft tributary) | unknown | | | Due to an unknown amount of an unknown substance fish kills occurred in the Gilgenbach (tributary to R. Erft) |
| | 22 | | R6 | 10.07.09 | 865 | Bimmen/Lobith | MTBE | 4,7 | | Polluter presumably tanker |
| | 23 | | R6 | 24.07.09 | 837,5 | Rees | MTBE | 13,0 | | Polluter presumably tanker |
| | 24 | | R6 | 03.08.09 | 822-834 | | Oil film | 12,5 | | |

| Warning | Information | Search report | IHWZ | Date of report | River km | Location | Substance | Concentration peaks in µg/l | Length of film in km | Content of report |
|---------|-------------|---------------|--------------|--|----------|----------------------|---|-----------------------------|----------------------|---|
| | 25 | | R6 | 08.09.09 | 725,9 | Dormagen-Stürzelberg | Toluene | 11,0 | | Polluter presumably tanker |
| 2 | | | R6 | 14.09.09 17.09.09 | 856 | Bimmen | Gas oil | 22,0 | | <p>Average of two tankers. Leakage of a vessel with a freight of 1,100 t gas oil.</p> <p>The second disabled vessel is located near Rhine kilometre 856. As the bollard benches were torn off, some 30,000 l gas oil leaked out. The remaining gas oil was pumped into a lighter.</p> <p>Correction: 30 tons gas oil</p> <p>The main quantity of the leaking gas oil drifted downstream. A minor part remained stuck to the groynes and the river bank downstream the location of the average.</p> <p>The averaged tanker was unloaded and leakage was stopped. The residual amounts of leaking gas oil along the banks and in the port were absorbed.</p> <p>All clear signal for a river section</p> <p>Measurements of several aromatic compounds and information of the drinking water works along the Rhine.</p> <p>Reports on further measurement results on the sum of aromatic compounds.</p> |
| | 26 | | R4 R6 | 15.09.09 16.09.09 17.09.09 | 443,3 | Worms | TAA (Triacetonamin/ 2,2,6,6-Tetramethyl-pipridin- 4-on) | 7,6 38,5 | | <p>Potential polluter BASF/Ciba</p> <p>Polluter identified as Ciba Spezialitätenchemie in Lampertheim.</p> |
| | 27 | | R6 | 21.09.09 | 732 | Düsseldorf-Flehe | Volatile hydrocarbons Benzene Among others MTBE/ETBE | 6,3 | | Polluter presumably tanker |

| Warning | Information | Search report | IHWZ | Date of report | River km | Location | Substance | Concentration peaks in µg/l | Length of film in km | Content of report |
|---------|-------------|---------------|------|----------------------|------------|---------------------|---|-----------------------------|----------------------|---|
| | 28 | | R6 | 29.09.09 | 837 | Rees km 837 | Styrene | 4,5 | | Polluter presumably tanker |
| | 29 | | R6 | 29.09.09 | 732 | Düsseldorf-Flehe | Volatile hydrocarbons Among others MTBE/ETBE | | | Polluter presumably tanker |
| | 30 | | R6 | 18.10.09 | 865 | Bimmen | MTBE | 9,0 | | Polluter presumably tanker |
| | 31 | | R6 | 21.10.09 | 640 | Bad Honnef | MTBE | 3,3 | | Polluter presumably tanker |
| | 32 | | | 26.10.09 | 640 | Bad Honnef | Volatile hydrocarbons Among others m-/p-Xylol o-Xylol | 2,8 3,2 | | Polluter presumably tanker |
| | 33 | | R4 | 30.10.09 | km 491-503 | | Bilge oil | | | Pollution presumably caused by navigation |
| | 34 | | R6 | 24.11.09 27.11.09 | 640 | Bad Honnef | MTBE Xylol | 5,5 9,0 | | Polluter presumably tanker |
| | 35 | | R3 | 24.11.09 25.11.09 | 344- 354 | Elchesheim-Iltingen | Gas oil | | | Search of polluter by helicopter. The polluter was found. The oil film is no longer to be seen. |
| | 36 | | R3 | 29.11.09 03.12.09 | 342 362 | Iffezheim | Gas oil | 0,14 | 20 | Helicopter detects an oil film |
| | 37 | | R6 | 14.12.09 | 732 | Düsseldorf-Flehe | Benzene Cyclohexane Xylol | 3,2 | | Polluter presumably tanker |
| | 38 | | R6 | 22.12.09 | 863 | Lobith | MTBE | 6,3 | | Polluter presumably tanker |
| | 39 | | | 28.12.09 | 769 | Duisburg-Huckingen | Hydraulic oil | | | Discharge from land due to rupture of a pressure pipe. Approximately 500 l hydraulic oil leaked from the installation. |