The 2008 Elemental Mercury Vapour Pollution Accident in the Brussels Capital Region: Two Approaches towards Source Identification

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This poster summarizes the most important events during the January 2008 Elemental Mercury Vapour Pollution Accident in the Brussels Capital Region, from problem detection till source identification.

Who is who & where?


IRCEL, The Belgian Interregional Environment Agency, Co-ordinates air quality information from the three Belgian regions (Flemish, French & German speaking) and informs public on air quality issues.

VITO, Research organisation of the Flemish government. Has teams on, amongst others, air quality modelling and environmental analysis (monitoring).

First Approach (BIME)

Analysis of the Hg interfered ozone pollution roses (Figure 2) gave a strong indication that the source area had to be located near the South of the Brussels Capital Region.

Second Approach (IRCEL/VITO)

January 25\textsuperscript{th}. IRCEL contacts air quality modelling group of VITO

09h00: Data transfer of monitor network data
14h00: Very simple conceptual model:

1) pollutant roses point towards the valley of the Zenne
2) High Hg and (false) ozone only during night
3) Skyly during entire week mostly covered with clouds, except for some short periods during the nights with high concentrations
4) During these moments, temperature at 3m drop quickly

Mercury plume trapped in the valley of the Zenne during night time ground inversions

Measuring strategy to locate source by mobile monitor:

1. Field mobile Hg Monitor and/or UV photometric ozone analyzers sensitive to Hg
2. Enter Zenne valley from the North, drive in zigzag to the South till the plume is found.
3. Next, go further South till no more plume? Next:
4. narrow region where source of plume is present/not present


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About Federal Belgium (adjective: Belgian) and its Regions

Federal Region

Brussels Capital Region

Flanders (adj. Flemish)

Wallonia (adj. Walloon)

Administrative Languages:

French

Radio & TV

Breaking news, print, radio & TV

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February 2nd. Van with monitor drives to Brussels street block around a battery recycling plant for lead batteries

On Sunday 27\textsuperscript{th}, the plant operator was informed. He voluntarily interrupted the activity until the availability of the emission measurement results.

VITO NV

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(False) Very High Ozone concentrations up to 1218 \textmu g O\textsubscript{3}/m\textsuperscript{3} in wintertime, Belgium - due to sensitivity of UV photometric ozone analyzers to Hg vapour interference.