

**THE FMPC 1988 EMR CHEMICAL RELEASE  
ADDENDUM**

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## The FMPC 1988 EMR Chemical Release Addendum

Among the information presented in the Environmental Monitoring Annual Report (EMR) for the Feed Materials Production Center (FMPC) are estimates on both radiological and nonradiological emissions to the environment. This addendum to the EMR is being issued to include chemical release estimates from the Superfund Amendments and Reauthorization Act of 1986 (SARA) 313 report for 1988 and a summary of emissions from the FMPC Boiler Plant during 1988.

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To estimate releases, the FMPC used a method that followed guidelines defined under SARA 313. These estimates do not reflect actual measured emissions. Indeed, FMPC believes these emission estimates are higher than actual releases. By following these guidelines, FMPC estimated releases via material balance calculation, monitoring data, or engineering calculations. In cases where quantitative monitoring data, inventory estimates, or emission factors were not readily available, release estimates were based on best engineering judgements. Information obtained from air permits, rate of operation, quantities used, and known treatment efficiencies were used to estimate quantities released into the environment. Typically, assumptions based on best engineering judgement were required in order to perform the calculations when all variables were not known.

Calculations for Boiler Plant emissions were based on published AP-42 emission factors and coal use and analysis records for the FMPC during 1988.

### Discussion

The SARA 313 chemicals included in this addendum are a summary of the SARA Title III, Section 313 report, required by SARA legislation. This report is submitted to the Environmental Protection Agency (EPA) and Ohio EPA each year on July 1 for the previous calendar year, and contains chemicals on the EPA's toxic substance list. Any listed chemical manufactured in excess of 50,000 lb, processed in excess of 50,000 lb, or otherwise used in excess of 10,000 lb at a facility during 1988 must be reported. The manufacturing and processing threshold will decrease to 25,000 lb for 1989 reporting.

The FMPC prepared this report because the publishing date of the Environmental Monitoring Report for 1988 was June 1, 1989, and the SARA 313 summary was not available until July 1, 1989.

## FMPC Chemical Release Information for 1988

Chemical Name	Type of Release	Quantity Released (lb/kg)	Major Release Sources	Basis of Estimate
<i>Summary of SARA 313 Report</i>				
Ammonia	Air: fugitive	6,800/3,100	Chemical Process	Published Emission Factors
Hydrochloric Acid	Air: fugitive	120/50	Ancillary Uses <sup>1</sup>	Best Engineering Judgement
Hydrogen Fluoride	Air: fugitive	1,020/460	Manufacturing/ Processing Manufacturing/ Processing	Published Emission Factors
	Air: point source	9,200/4,200		Best Engineering Judgement
Methanol	Air: fugitive	500/230	Chemical Processing Aid	Published Emission Factors
	Air: point source	160/70	Chemical Processing Aid	Published Emission Factors
	water: Great Miami River	2,800/1,300	Chemical Processing Aid	Best Engineering Judgement
Nitric Acid	Air: fugitive	7,300/3,300	Chemical Processing	Published Emission Factors
Sodium Hydroxide (solution)	none	N/A	Ancillary Use <sup>2</sup>	Best Engineering Judgement
Sodium Sulfate (solution)	water: Great Miami River	480,000/220,000	Byproduct	Best Engineering Judgement
1,1,1 trichloroethane	Air: fugitive	19,000/8,600	Ancillary Use <sup>3</sup>	Best Engineering Judgement
Sulfuric Acid	none	N/A	Ancillary Use <sup>4</sup>	Best Engineering Judgement
<i>Section Two: Boiler Plant Emissions</i>				
Particulates	Air: stack emissions	30,400/13,800	Fossil Fuels Combustion	Stack Testing
Sulfur Dioxide	Air: stack emissions	816,000/370,000	Fossil Fuels Combustion	AP-42 Emission Factors <sup>5</sup>
Nitrogen Oxide	Air: stack emissions	366,000/166,000	Fossil Fuels Combustion	AP-42 Emission Factors
Carbon Monoxide	Air: stack emissions	130,800/59,300	Fossil Fuels Combustion	AP-42 Emission Factors
Non-methane Volatile Organic Compounds	Air: stack emissions	1,800/825	Fossil Fuels Combustion	AP-42 Emission Factors

1. Chemical processing aid to decontaminate equipment and materials. The waste HCL is pH neutralized and released to the general sump.

2. Used to neutralize acidic waste streams.

3. Used as a cleaner and degreasing agent.

4. Chemical processing aid during pH adjustment and regeneration of ion exchangers.

5. Calculations were based on AP-42 emission factors and 1988 FMPC coal use and analysis records.