

EFFLUENT AND EMISSION CONTROL

Reduce pollutants in effluents and emissions from Monsanto operations to meet corporate targets, going beyond those levels either required for regulatory compliance or necessary to protect health and the environment.

PROGRAM

EFFLUENT CONTROL: Control options for both direct and indirect (i.e., to Publicly Owned Treatment Works - POTW) liquid discharges from Monsanto operations will be developed consistent with compliance dates in permits or other enforceable instruments and to meet internal Monsanto needs. Substances subject to such controls will include those listed pursuant to Section 307(a) of the U.S. Clean Water Act, those substances known to be present in proposed or promulgated effluent limitation guidelines, or other site-specific pollutants identified by the plant which appear to warrant consideration, including those reported via SARA Title III, Section 313. For ex-U.S. locations, use a site-specific list which is equivalent to the U.S. EPA lists.

For each location where any of these substances are used or produced, address the following:

1. **Regulatory compliance** — Develop specific information necessary to identify control options to ensure compliance with regulatory-driven limitations in permits or other enforceable instruments. Such information should include substance quantification profiles at reasonable levels of confidence and could include factors such as variations due to seasonal effects, product mix, hydraulic loading, production capacity, waste treatment variables, or other site-specific parameters. Timetables for this effort should be developed on a site-specific basis, consistent with needs to meet legally enforceable compliance.
2. **SARA Section 313 substances** — Conduct a site-specific substance-by-substance review of significantly reported SARA Section 313 releases (for both direct and indirect discharges) for those substances not addressed by limitations in permits or other enforceable instruments. Within the framework of the corporate waste minimization program, reduce the quantities of such releases.
3. **Water quality** — Conduct an aquatic safety assessment to determine the measurable impacts, if any, of Monsanto's effluents on receptor water quality. This should cover both direct and indirect discharges (if appropriate), with the latter impacts based on POTW effluent, where possible, including judging Monsanto's contribution to

the POTW's effluent. Details for this assessment and appropriate response actions should be developed based on individual site-specific needs.

Operating units will annually review, and adjust as necessary, the priorities and timetables for the above programs.

EMISSION CONTROL: Monsanto intends, by the end of 1992, to reduce air emissions, worldwide, by 90% for the chemicals reported on the SARA Section 313 reports for 1987. Beyond 1992, Monsanto will work toward an ultimate goal of zero emissions for these same chemicals. The baseline in the U.S. for this reduction will be the chemicals and quantities on the 1987 SARA Section 313 emissions report, with comparable programs being developed for the ex-U.S. operations. Operating units will establish and implement plans to achieve these reductions and will issue annual progress reports.

Conduct an assessment of potential human health impacts for selected routinely emitted air pollutants and develop appropriate control strategies to reduce identified potential unreasonable risk of harm to human health in surrounding communities. In addition to providing additional understanding of the potential human health impact from Monsanto plant operations, this information will facilitate Monsanto responses to regulatory proposals and future permit needs.

The list of air pollutants to be studied include: (a) those listed and regulated under Section 112 of the U.S. Clean Air Act; (b) those currently being reviewed as candidates for listing by EPA as Section 112 pollutants; (c) those for which EPA has established cancer unit risk values; (d) those contained on the International Agency for Research on Cancer (IARC) groups 1 and 2A lists; and (e) other site-specific pollutants identified by the plant which appear to warrant consideration (including those in significant quantities reportable via SARA Section 313). For ex-U.S. locations, use any local regulatory lists which are equivalent to the U.S. EPA lists.

Each Monsanto location will carry out the following program:

EFFLUENT AND EMISSION CONTROL *(continued)*

1. Identify, for each air pollutant selected for review, all emission point sources (ongoing, continuous, and intermittent), as well as area and volume sources where the substances are released into the atmosphere.
2. Estimate for the selected air pollutants, their emission rates from each source.
3. Rank each of the selected air pollutants to determine their relative priorities for further evaluation using a chemical prioritization protocol established by the Monsanto Air Steering Committee which utilizes workplace exposure guides and estimated emission rates.
4. Develop work plans to complete the detailed assessment of priority 1 and major 2 pollutants by 7/1/89 (by date consistent with local needs for ex-U.S. locations). For remaining prioritized pollutants, work plans and further evaluation will be conducted within the confines of existing resources.
5. Estimate the potential maximum downwind concentration for each pollutant at receptors representative of the exposed population, utilizing appropriate dispersion modeling techniques incorporating refined quantification of emissions based upon relative priorities (i.e., ranging from point source measurements for priority 1 to best estimates for priority 4).
6. Assess the potential for human health impacts at community receptor points using the results of the dispersion analysis, and determine if there is, or is not, a potential for unreasonable risk of harm to human health.

7. Define appropriate, cost effective controls to reduce risks to acceptable levels where a potential human health concern exists and take actions to implement such reductions.

For U.S. locations, complete the first six steps above for priority 1 and major priority 2 pollutants by 7/1/89, complete step seven on a timetable consistent with local needs, and for the remaining prioritized pollutants by a date consistent with resource availabilities. For all ex-U.S. locations, complete the seven steps for all priorities by dates consistent with local needs.

GENERAL: The following program elements will be implemented as required.

1. Sample the significant emission and effluent release points of each new or modified process after startup to confirm that no pollutant, in an amount having potential to endanger health or the environment, exceeds those levels specified by the design and/or contained within any applicable permits.
2. Operating Companies will periodically report data on permit exceedances and reportable releases (including those reportable under CERCLA), with performance to be reviewed annually. During 1989, develop uniform corporate reporting criteria and obtain ESH Committee approval.

(Revised and Approved by Environmental, Safety & Health Committee April 25, 1989.)

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