

Sarah G. Collins
(314) 694-3860

MONSANTO BEGINS DIOXIN
CLEAN-UP AT LOCAL PLANT

ST. LOUIS, March, 26 -- Monsanto Company said today it has begun the clean-up of five buildings at its John F. Queeny Plant that are contaminated with low levels of dioxin. According to Monsanto, the contamination which is not considered to be a health hazard to employees nor a threat to the environment, consists of encrusted grit and residue from beams, crevices, and cracks in the buildings.

"We have an extensive clean-up plan in place that has been approved by the federal EPA," Fred L. Thompson, Queeny Plant Manager, said. "Three of the five buildings will be decontaminated in four to six weeks. Work in the remaining structures will be finished within the next few months."

The buildings will be completely sealed during the decontamination process. A variety of techniques will be used to remove the contaminated grit and residue from the interiors including vacuuming, scraping, and high-pressure water cleaning.

"All waste material collected during the removal process will be placed and sealed into 25-gallon fiber drums. These --2 MICC:
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containers will then be set in 55-gallon steel drums for final disposal by high temperature incineration at a waste disposal facility in Texas," Mr. Thompson explained.

Maximum dioxin levels in the five buildings range from 1.92 parts per billion (ppb) to 24.24 ppb. "However, given dilution by non-contaminated residues during the clean-up, the waste material resulting from the clean-up will be well below these concentrations," Mr. Thompson said.

The dioxin contamination was detected by Queeny environmental experts last year in a plant-wide sampling program. During the past several months, plant personnel reconfirmed the results of the sampling analyses, developed plans for the clean-up operation, notified local officials, and received approvals for the project from the appropriate regulatory agencies.

"Though the Queeny Plant has never been involved with chemical processes normally associated with the formation of dioxin, it did reprocess quantities of the herbicide 2,4,5-T at times between 1949-1964," Mr. Thompson said. "It is now known that the herbicide can contain dioxin as an unwanted contaminant and that the situation at the plant is related to our past herbicide reprocessing."

The Queeny Plant, located on South Second Street in St. Louis, produces chemicals for industrial and commercial products including pharmaceuticals, plasticizers, detergent ingredients, and agricultural chemicals. Approximately 900 employees work at the plant.

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QUESTIONS & ANSWERS -- J. F. QUEENY PLANT DIOXIN CLEANUP

Q1. What is Monsanto doing to clean up its dioxin-contaminated buildings at the JFQ Plant?

A1. Monsanto will begin (has begun) cleanup of four dioxin contaminated buildings at its John F. Queeny Plant (Buildings AA, Q, QQ and WW as of late March/early April). The contamination consists of encrusted grit and residue from beams, crevices and cracks in the buildings. The cleanup process should take about one month. A fifth building will also be decontaminated within the next several months.

Q2. What's involved in the cleanup?

A2. Each building will be completely sealed. Then several techniques will be used to remove the contamination including vacuuming, scraping, shoveling, solvent wiping and high pressure water cleanings.

The waste material collected (including protective clothing, gloves) during the removal process will be placed and sealed into 25-gallon fiber drums, and set in 55-gallon steel drums in preparation for final disposal by high temperature incineration.

Water used in the cleaning effort will be subject to sedimentation, filtration, and activated carbon treatment to completely remove organic chemical contaminants before discharge to the sewer.

Q3. Where will the waste be incinerated?

A3. At an approved hazardous waste incinerator in Deer Park, Texas (Rollins Environmental Services), pending approval by state and federal regulatory authorities.

Q4. Do you expect to get regulatory approval and if so, when? What happens if you don't?

A4. We have received written approval from the U.S. (federal) EPA.

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- Q5. How will the drums be transported to Texas?
- A5. By van-type (enclosed) tractor trailers under all applicable RCRA regulations.
- Q6. What precautions will be taken?
- A6. Monsanto personnel will accompany the shipment to assure its proper handling enroute and to verify its safe arrival at the disposal site.
- Q7. Will JFQ employees be involved in the cleanup?
- A7. The actual cleanup work will be done by O. H. Materials Company of Findlay, Ohio. JFQ Environmental personnel will supervise the operation.
- Q8. Has the State mandated the cleanup?
- A8. No, this is a voluntary action on Monsanto's part. However, the State DNR, Federal EPA, St. Louis Health Commissioner and local office of OSHA have been notified and are completely aware of the operation.
- Q9. What dioxin concentrations are we talking about?
- A9. The maximum dioxin levels range from 1.92 parts per billion (ppb) to 24.24 ppb. The waste material resulting from the cleanup will be well below these concentrations given the dilution by non-contaminated residues during the cleanup.
- Q10. (If asked specifically) What were the levels in each building?
- A10. Q Building up to 1.92 ppb
ZZ Building up to 2.13 ppb
WW Building up to 3.6 ppb
QQ Building up to 11.83 ppb
AA Building up to 24.24 ppb

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Q11. Aren't the contamination levels highly dangerous? They are above one ppb.

A11. The one part per billion safety guideline recommended by the Federal Centers for Disease Control (CDC) was intended for residential sites only and does not apply to industrial locations. The guideline is based on the highly unlikely assumption that a small child would eat one gram of dioxin-contaminated soil every day for several years while at the same time being exposed to another gram every day through skin contact. This obviously does not apply to any past or present situation of JFQ. It is also important to emphasize that the contamination is in areas of the buildings where there has been little potential for human contact (corners, crevices, beam tops).

Q12. So you are saying the dioxin contamination is not hazardous?

A12. There is absolutely no indication that these areas of dioxin contamination have ever posed any danger to our employees.

Q13. How can you say that?

A13. There has never been a case reported of chloracne, the hallmark of dioxin exposure, among our employees. Consequently, we have never had a reason to suspect a dioxin-related problem, nor do we have one now.

Q14. If dioxin is in there, how easily could it have spread through the air?

A14. Not very likely since the residues consist of hardened, encrusted particles. In order to collect the samples used in the analytical process, particles were literally scraped off the surface. Therefore, the danger of dioxin floating in the air was virtually non-existent.

During the cleanup operations, each building will be completely, thoroughly sealed so that there will be no chance for any dioxin-tainted waste, particles to become airborne.

Q15. What about 20-30 years ago when it was being handled, i.e., how did it get on top of beams and rafters?

A15. It obviously was in the air at some point, years ago, but it is equally obvious that no one has suffered adverse affects.

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Q16. Are any of the contaminated buildings in use today? If so, what is each used for?

A16. Yes. Portions of AA building are currently utilized for manufacturing of aroma esters (for fragrances: soaps, perfumes). WW building is a research/pilot plant facility. ZZ building is an active warehouse and fluid packaging facility

Q17. Do you plan to continue using the buildings or will you ever demolish them?

A17. There are tentative plans to demolish Q, QQ, and ZZ buildings within the next two years. AA will probably be retained for manufacturing purposes.

Q18. What prompted Monsanto to undertake the cleanup operation?

A18. About one year ago, Monsanto announced it had undertaken a dioxin sampling program at JFQ. The areas involved in this current program were found to contain low level contamination. Even though the contamination does not pose an environmental hazard or health threat, we are committed to cleaning up the plant site.

Q19. Did Queeny ever manufacture dioxin?

A19. The plant has never been involved with chemical processes which are usually associated with the formation of dioxin. However, between 1949 and 1964, the Queeny Plant from time to time processed the herbicide 2,4,5-T it received from another Monsanto location. Though the material was never manufactured here, the 2,4,5-T shipped to Queeny could have been contaminated with dioxin since dioxin can be formed as a by-product in the herbicide manufacture. Consequently, we sampled in those areas where 2,4,5-T was handled.

Q20. What did the sampling program involve?

A20. Samples of scrapings and wipe samples were taken from buildings where we had reason to suspect that dioxin contaminated raw materials had been stored or processed. Samples were analyzed at EPA accredited laboratory facilities operated by Monsanto Research Corporation in Dayton, Ohio.

Q21. How much material was handled at Queeny over the years?

A21. It varied from year to year; anywhere from zero to just over one million pounds.

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Q22. What processes at your plant produce dioxin?

A22. None. Our concern is with the dioxin that may have come in with the herbicide material more than twenty years ago.

Q23. What do you mean when you say 2,4,5-T was reprocessed at the plant?

A23. It was used in other herbicide products as a raw material, 2,4,5-T can be used to produce several other herbicide products including Silvex®.

Q24. Have the regulatory agencies asked about dioxin at Queeny?

A24. Yes. There have been occasions in the past several years when a regulatory agency has contacted the plant about dioxin. In 1979 NIOSH expressed an interest in three Monsanto plants, including Queeny, in preparation for a study the agency was undertaking. After a review of Queeny health and production records, NIOSH did not include Queeny in the study.

In 1980 EPA listed Queeny in its Dioxin Surveillance Report. And, during 1983, the plant was contacted by the EPA (regional) and Missouri Department of Natural Resources as part of the agencies study and/or survey activities.

EPA Region VII requested data on our dioxin sampling program last March. Finally, the EPA performed its own sampling at our plant in August of 1984; however, their results have not yet been made available to us.

Q25. Could the Queeny Plant have contaminated the groundwater in the past with dioxin?

A25. We do not expect that the groundwater has been contaminated from dioxin. The solubility of dioxin, for example, in water is well below the one ppb concern level and consequently migration into groundwater is very unlikely and not a concern. Furthermore, dioxin is reputed to bind tightly to other substances, such as soil, and resist migration.

Q26. What did you do with the wastes generated in your 2,4,5-T or other herbicide operations?

A26. Though after more than 20 years we do not have extensive records, we did dispose of all plant wastes in accordance with the environmentally accepted practices of the time. For instance, solid waste was landfilled; liquid waste was sent to the sewer.

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Q27. Do you store dioxin waste at the Queeny Plant?

A27. No, we do not. However, we will have the waste material collected during the cleanup process until it is transported to the Federally-approved waste incineration facility.

Q28. While the dioxin waste material is at JFQ, how will it be stored?

A28. It will be placed in special 25 gallon fiber drums which will then be overpacked in 55 gallon steel drums for added security. These will be placed in a fully secured presently vacant warehouse prior to shipment for incineration.

Q29. What does the Queeny Plant currently produce?

A29. Numerous chemicals used in a variety of industrial and commercial products.

Q30. Where and how does Queeny dispose its wastes today?

A30. Chemical wastes are disposed of at several RCRA approved hazardous waste disposal sites located throughout the U.S. We utilize hazardous waste landfill facilities and incineration facilities as appropriate for specific wastes. Specific locations include: Wright City, Missouri; Baton Rouge, Louisiana; Deer Park, Texas; Emelle, Alabama; Calvert City, Kentucky; and others.

Q31. What is dioxin?

A31. Dioxin is the common, though imprecise, name given to 2,3,7,8 tetrachlorodibenzo-para-dioxin, a trace impurity first identified by a German scientist in 1957. Actually, there are 75 known isomers of dioxin, but 2,3,7,8 TCDD has attracted the most attention.

Q32. What are the health effects of dioxin?

A32. While dioxin is extremely poisonous to guinea pigs, it is far less toxic to other laboratory animals. There has never been a human death attributed to dioxin poisoning. The only known long-term human effect associated with dioxin exposure is chloracne, a skin condition that is characterized by blackheads on the cheekbones, neck and sometimes the back.

Q33. Is dioxin the only chemical that causes chloracne?

A33. No. There are other chemical contaminants capable of producing this condition.

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