

October 14, 1991

Preparedness Statement
Former Krummrich Landfill

Monsanto Company and the Illinois Environmental Protection Agency have been negotiating a consent agreement for the company to assess the conditions at the former Krummrich landfill in Sauget, Ill., and to evaluate alternatives for corrective action.

This process will determine what action is required to ensure the long-term protection of public health and the environment. Monsanto is committed to carrying out the work carefully and correctly.

Public input will be sought during the process. Once the consent agreement is entered in St. Clair County Circuit Court, Monsanto will hold a public meeting to explain the investigation, to answer questions and to hear the concerns of area residents.

An environmental engineering firm will investigate conditions at the site and recommend alternatives for remedial action. The firm was hired by Monsanto, subject to the approval of the Illinois Environmental Protection Agency (IEPA). The study is expected to take approximately a year and a half. The findings will be presented at a second public meeting. The IEPA will closely monitor the study and will select the corrective action it believes is appropriate. If Monsanto agrees, Monsanto will carry out the corrective action, again with IEPA oversight.

DSW 136815

STLCOPCB4036775

The 36-acre landfill was used from 1959-1977 to dispose of waste from the Krummrich plant and from other Monsanto facilities in the St. Louis area. The landfill was capped with clay, in accordance with state law for closing landfills, covered with soil and seeded. It is completely fenced.

The landfill does not represent current Monsanto waste-disposal practices. It was built more than 30 years ago, in compliance with existing state law, but landfill designs were not as sophisticated then and the state of environmental knowledge was not as advanced as it is today.

Today, the Krummrich plant no longer uses landfills to dispose of routine process waste from its chemical manufacturing operations. Great emphasis is placed on waste-minimization efforts. The plant reuses and recycles materials wherever possible. The next preferable option is to destroy or treat the waste, with land disposal the last option.

The Krummrich plant's efforts are part of a voluntary program announced by Monsanto in 1988 to reduce air emissions of toxic chemicals by 90 percent by the end of 1992. Monsanto Chemical Company, the largest operating unit of Monsanto Company, has targeted a 70 percent reduction in the amount of organic and toxic inorganic waste released into the environment by the end of 1995.

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DSW 136816

STLCOPCB4036776

Message Points
Former Krummrich Landfill

- Monsanto Company and the Illinois Environmental Protection Agency have been negotiating a consent decree for the company to assess the conditions at the former Krummrich landfill and to evaluate alternatives for corrective action. This process will determine what action is required to ensure the long-term protection of public health and the environment.
- The public will be kept informed about the project and will have a chance to comment. Monsanto will hold public meetings before the investigation begins and to announce the results of the investigation and feasibility study.
- The investigation and feasibility study are expected to take approximately a year and a half. The work will be done by an experienced environmental engineering firm hired by Monsanto, subject to the approval of the Illinois Environmental Protection Agency.
- Monsanto is committed to the future economic development of the Metro East area. We pledge to carry out the appropriate corrective action carefully and correctly.
- The IEPA will closely monitor the project and will select the corrective action which it believes is appropriate.
- The landfill operated 1959-1977 to dispose of waste from the Krummrich plant and other Monsanto facilities in the St. Louis area.
- The landfill was built more than 30 years ago, in compliance with existing state law, but landfill designs were less sophisticated then and the state of environmental knowledge was much less advanced than it is today.
- The Krummrich plant no longer uses landfills to dispose of routine process waste from its chemical manufacturing operations. Waste elimination and minimization efforts receive highest priority. Efforts are made to reuse and recycle materials wherever possible. Incinerating waste is viewed as the next-best option. Landfilling is viewed as the last option.
- These efforts are part of a voluntary initiative announced by Monsanto in 1988 to reduce air emissions of toxic chemicals by 90 percent by the end of 1992.

DSW 136817

Monsanto

FROM

(NAME-LOCATION-PHONE) Kevin S. Cahill (4-7518) G4WD

DATE: October 11, 1991

cc: L. J. O'Neill
L. W. Wassell

SUBJ: DEAD CREEK TESTING

REF:

TO: D. G. Bartolanzo - A2SP
D. R. Bishop - A2SP
R. G. Dahlen - G4EM
B. J. Gilhousen - E2NK
C. F. Navarrete - G4NA
R. G. Potter - G4NH
D. L. Sliney - G4NJ
M. W. Winkel - G5NA

Attached please find a copy of a press release to be issued by the Krummrich plant this morning regarding sample collection in Sector B of Dead Creek, and two adjacent sites.

The sampling is being conducted to determine the chemicals present in that portion of the creek, and identify options for corrective action.

We did not initially plan on issuing a release on the testing program, however, under pressure from the Illinois Environmental Protection Agency, it was determined that a release should be issued. Protection of long-term relationships with the agency drove this decision.

The release will be forwarded to the Illinois Bureau of the St. Louis Post-Dispatch, and other Metro East journals.

We are prepared to address media inquiries on the sampling program.

Kevin S. Cahill /a

DSW 136818

STLCOPCB4036778

NEWS

Monsanto

FOR RELEASE IMMEDIATE

Andi Smith, Monsanto
618/482-6322 (W)
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MONSANTO TO COLLECT SAMPLES FROM DEAD CREEK

Sauget, Illinois, October 11, 1991 -- Beginning Monday, October 14, Monsanto Company will be collecting soil samples from a portion of Dead Creek and adjacent sites to determine the types of chemicals present. The chemicals have come from a number of industrial and commercial sources over the past 75 years.

The Illinois Environmental Protection Agency is being kept informed of the sampling, as part of a long-range, environmental program by Monsanto to evaluate whether corrective action is warranted or feasible.

The part of the creek being tested runs from Queeny Avenue to Judith Lane in Sauget and Cahokia and is fully enclosed by a chain-link fence. Adjacent sites are also a part of the sampling due to their proximity to the creek.

None of the property is owned by Monsanto, however the owners of the properties are cooperating with Monsanto and its sampling program.

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DSW 136819

Confidential & Privileged

Questions and Answers
Former Krummrich Landfill

1) When will the consent decree be finalized?

We have been negotiating in good faith with the Illinois Environmental Protection Agency and the Illinois Attorney General's Office. The consent agreement hopefully will be entered this fall.

2) How long have the negotiations been going on?

Major progress in the negotiations have been made since last June. While we would all agree we wish it had been settled sooner, there is no impact on public health. If there was an impact, it would have been settled sooner.

3) Was Monsanto sued by the state of Illinois over this landfill?

The Illinois Attorney General's office filed a lawsuit in 1982 in connection with the landfill. The suit is still pending. Before and after the suit, we have taken steps to protect the public health and the environment. We have placed a two-foot-thick clay cap over the landfill, in accordance with state law at that time for closing landfills, and planted grass on it to help prevent seepage of rainwater through the landfill. We also began a groundwater monitoring program and completed a \$1.5 million program to install rocks and sand along the riverbank to control erosion.

4) Did Monsanto wait to get sued before it acted?

We have not waited to take action in connection with the landfill. In 1979, we placed a two-foot-thick clay cap over the landfill and planted grass on it to help prevent seepage of rainwater through the landfill. About a decade ago, we began monitoring groundwater at the site. And in 1985, we completed a \$1.5 million project to install rocks and sand along the riverbank to help control erosion.

5) What types of work will the remedial investigation and feasibility study involve?

It will include additional, more extensive groundwater monitoring to determine the extent and movement of the waste. The work will also involve checking the integrity and coverage of the clay cap already in place over the landfill.

DSW 136820

6) Who will do the work?

An experienced environmental engineering firm hired by Monsanto, subject to the approval of the Illinois Environmental Protection Agency.

7) What firm is it?

Geraghty & Miller Inc.

8) How long will the work take?

Approximately a year and a half.

9) How much will the remedial investigation and feasibility study cost?

In excess of \$1 million.

10) What will be Illinois Environmental Protection Agency's role in the remedial investigation and feasibility study?

The Illinois Environmental Protection Agency will closely monitor the project and will select the corrective action. If Monsanto and IEPA disagree over what corrective action is appropriate, the court can be called upon to decide.

11) What will be the court's role in the remedial investigation and feasibility study?

The St. Clair County Circuit Court will enforce the terms of the consent agreement and must approve the Illinois Environmental Protection Agency's choice of corrective action.

12) What remedial options will be considered?

We plan to look at a number of options aimed at protecting the public health and the environment. They include adding more cover, building a slurry wall between the landfill and the river, and pumping and treating the groundwater.

13) What do you mean by adding more cover?

Increasing the size and/or thickness of the two-foot-thick clay cap that has been in place since 1979.

DSW 136821

14) What's a slurry wall?

An underground wall to restrict or reduce the flow of groundwater into the Mississippi River.

15) What do you mean by pumping and treating groundwater?

Pumping the groundwater and treating it to remove the waste, either at the American Bottoms Wastewater Treatment Plant or at a plant that would be built near the landfill site. The treated groundwater would then be discharged to the river.

16) Why can't the waste be dug up and moved elsewhere?

While we are not ruling out any options, we believe it would be unfeasible and perhaps risky to disturb the waste and move it elsewhere for disposal, even if another disposal site could be found. It could harm the environment rather than protect it.

17) Will incineration be an option?

While we are not ruling out any options, the large volume of material involved and the mixture of chemicals would make incineration more difficult. Digging up the waste and transporting it to an incinerator would increase the likelihood of public exposure to the material.

18) Is the Times Beach incineration remedy applicable here?

The contamination at Times Beach is virtually all one chemical -- dioxin. In addition, the dioxin is limited to the first 12 inches of soil, so excavation is easier. The landfill is much deeper than that.

19) Monsanto has been researching the use of bioremediation to clean up hazardous waste sites. Why not use it here?

While we are not ruling out any options, bioremediation would be extremely difficult. That's because the depth of the landfill would make it almost impossible to deliver nutrients evenly and efficiently to enable the bacteria to destroy the waste. Nonetheless, we plan to study this technology.

DSW 136822

20) What will assure that the most appropriate form of remediation is chosen?

The court and the Illinois Environmental Protection Agency will provide external review to ensure that the work is done right. Monsanto has a strong investment in the future economic development of the Metro East area and is committed to carrying out the appropriate corrective action carefully and correctly.

21) How big is the landfill?

Thirty-six acres.

22) Where is it located?

On the west side of Illinois Route 3, near the Krummrich plant.

23) Is this in a flood plain?

Yes.

24) What would happen to the landfill in a flood?

The clay cap would help prevent water from seeping through the landfill and would protect the site. There are no exposed chemicals.

25) Why was it built next to the Mississippi River?

The landfill was built more than 30 years ago, in compliance with existing state law, but landfill designs were less sophisticated and the state of environmental knowledge was much less advanced as it is today. The site is in close proximity to several other landfills and waste-disposal facilities. Today, we would do a number of things differently, including choosing a location. In addition, modern landfills have improved engineering and design features, including impermeable liners.

26) How much waste is in the landfill?

An estimated 262,500 tons.

27) Where did the waste come from?

Mainly from the Krummrich plant, but also from other Monsanto facilities in the St. Louis area.

DSW 136823

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28) What kinds of chemicals are in the landfill?

They include chlorinated hydrocarbons, chlorophenols, nitrophenols, chlorobenzene, nitrochlorobenzene, creosols, waste sulfuric acid, waste caustic soda, waste solvents and filter sludges.

29) What health risks are posed by these chemicals? Are they dangerous?

Some of the chemicals are considered hazardous if they are not contained properly. The materials in the landfill are contained and there is little likelihood of public contact. Thus, there is believed to be no health risk. The goal of our investigation and remedial action is to protect the public health and the environment.

30) When was the landfill used?

The landfill operated from 1957 to 1977.

31) Are wastes from the landfill leaking into the Mississippi?

A small amount of material is believed to be entering the river.

32) What's the content of the leaking waste?

Analysis of leachate and sediment samples by the Illinois Environmental Protection Agency has indicated a variety of organic compounds, including chloroaniline, PCBs, chloronitrobenzene, dichloroaniline, chlorophenol and di chlorophenol. The material is flowing into the river at a very slow rate. While any leak is a concern, it is an infinitesimal amount compared to the flow rate of the Mississippi, which is about 1 million gallons per second.

33) Was dioxin found in the leaking waste?

Extremely low levels of dioxins and furans were detected in some samples. There are many chemicals in the dioxin family, however, and these were not 2,3,7,8-TCDD -- the type found at several dozen sites in eastern Missouri. The dioxins found in the samples were not a concern from a public health standpoint.

34) When was this leakage first detected?

In 1981. A short time later, we began a \$1.5 million project to install rip-rap to extend the riverbank and to control erosion. Approximately 90,000 tons of rock and sand were placed on the 2,300-foot riverbank. The project was completed in 1985.

35) How much waste is leaking?

While it is difficult to determine precisely, based on computer models, our consultants have estimated a flow rate of 76 pounds a day. We are not so concerned about the amount, however, as with the impact. While any leak is a concern, this is an infinitesimal amount compared to the flow rate of the Mississippi River, which is about 1 million gallons per second.

36) Has anything been done to stop the leaks?

Things have been done. We placed a clay cap over the landfill in 1979 and completed a \$1.5 million project in 1985 to install rip-rap to extend the riverbank and to control erosion. Approximately 90,000 tons of rock and sand were placed on the 2,300-foot riverbank. Both projects were designed to minimize present leakage and to help prevent more future leakage into the river.

37) What effect do the leaks have on fish and aquatic life in the Mississippi?

They are not believed to have any effect. The amount of material entering the river is infinitesimal compared to the flow of the river, which is about 1 million gallons of water per second.

38) What effect do the leaks have on communities downstream who draw their drinking water from the river?

There are no nearby communities downstream that draw their drinking water from the Mississippi River. Any material from the landfill that enters the river would be undetectable by the time it reaches downstream water users. (NOTE: The nearest community is Chester, about 75 miles downstream).

39) From a technical standpoint, is it possible to stop the waste from leaking into the river?

Experts could debate how "possible" this could be with enough reasons, money and time. In this instance, the reasons, not to mention the money and the time, may not warrant it.

DSW 136825

40) Why was the landfill closed?

As our environmental standards increased, we restricted chemical disposal and then closed the landfill entirely.

41) Where has the Krummrich plant disposed of its chemical waste since the landfill's closure?

Monsanto has a philosophy that the best way to deal with hazardous waste is to avoid making it in the first place. At the Krummrich plant, landfills are no longer used to dispose of routine process waste from its chemical manufacturing operations. The plant reuses and recycles materials wherever possible. The next preferable option is to treat or destroy the waste, with disposal the last option. Some chemical process waste is incinerated off-site.

42) Has anything been done to mitigate environmental damage at the landfill since its closure?

The landfill was capped with clay and grass was planted in 1979. In 1985, we completed a \$1.5 million project to install rip-rap to extend the riverbank and to control erosion. Approximately 90,000 tons of rock and sand were placed on the 2,300-foot riverbank. Groundwater monitoring has been conducted for about ten years.

43) How will area residents and community leaders be kept informed about the project?

We will hold public meetings to explain the project and to answer questions. One will be held before the assessment of conditions at the site begins. Another will be held to discuss the results of the study and options for corrective action. We will also establish a repository at the Krummrich plant containing documents pertaining to the project. The documents will be available for public review.

44) Where can people see the investigation report and other documents pertaining to the project?

We plan to set up a repository at the Krummrich plant in the near future that will contain documents pertaining to the project. Repository materials will be available for public use.

DSW 136826

45) What is Monsanto doing to prevent future hazardous waste problems like those at the former Krummrich landfill?

Monsanto is working to reduce pollution from its operations, with the top priority being to avoid making waste in the first place. In 1988, we voluntarily initiated a program to reduce air emissions from toxic chemicals by 90 percent by the end of 1992. The goal was later broadened to include releases to all environmental media. Monsanto Chemical Company, the largest operating unit of Monsanto Company, has targeted a 70 percent reduction in the amount of organic and toxic inorganic process waste released into the environment by the end of 1995.

46) How many other hazardous waste sites in the Sauget area that Monsanto is involved in? When will they be cleaned up?

Our Sauget plant has been in operation for more than 70 years. At an undetermined number of sites, Monsanto may be one of several responsible parties. We will be working with the Illinois Environmental Protection Agency and other parties in coming up with plans to investigate and remediate the sites as appropriate.

DSW 136827

October 14, 1991

REVISED VIDEO COPY POINTS FOR FORMER KRUMMRICH LANDFILL

- 1) WHATEVER THE FINAL VERSION, OUR PLAN WILL PROTECT THE PUBLIC HEALTH AND THE ENVIRONMENT.
- 2) PUBLIC COMMENT WILL BE SOUGHT AND CONSIDERED CAREFULLY.
- 3) THE LANDFILL DOES NOT POSE ANY IMMEDIATE HEALTH OR ENVIRONMENTAL PROBLEMS, BUT WE WILL RESPOND FULLY AND WILLINGLY TO THE STATE'S CONCERNS.
- 4) MONSANTO AND THE ATTORNEY GENERAL'S OFFICE CLEARLY AGREE ON THE COURSE OF ACTION WE ARE ABOUT TO PURSUE.

DSW 136828