United States General Accounting Office

GAO FAX TRANSMITTAL SHEET

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To: (name and address)
Tim Mulholland - Wisconsin DNR

Telephone No.608-266-0061 Fax Telephone No.608-267-2768 Date 12/03/92
From: (name and address)

Marcia McWreath

Telephone No.214-855-2768 Fax Telephone No. 214/855-2758
Subject:

Case summaries of Freeman Chemical/Cook Composites and Janesville

Additional Information

Tim - as promised, these are the abbreviated case studies of two facilities we looked at in WI. Unfortunately, they are so short as to not give an in-depth picture of the complexities of what can happen in corrective action. These case studies are 2 of 18 that will be included as Vol. II of our corrective action report. I have taken the liberty of putting you on the mailing list for the report. Many thanks.

Marcia

Acknowledgement Requested

1. ____ Yes X No

2. 12 pages, including this cover sheet, are being transmitted

3. If all pages are not received, call Marcia

OPR:OIMC

GAO Form 224 (Rev. 7/90)

DEC-04-1992 07:24 FROM GAO DALLAS R.O. TO 9160826727768 P.01

RESIN MANUFACTURER IN SUAKVILLE, WI

Location:	Saukville, Wisconsin, about 1,000 feet away from the Milwaukee River
Manufactures:	Polyester, alkyd, and urethane synthetic resins
Waste Sites:	Hazardous waste storage areas, incinerator, and an old dry well
Hazardous Waste Operations Began:	1949
Waste Concerns Surfaced:	1979
Hazardous Constituent(s):	Xylene, toluene, ethylbenzene, trans-1,2-dichloroethylene, benzene
Resources at Risk:	Underlying shallow and deep aquifers
Extent of Known Contamination:	Both the shallow and deep aquifers are contaminated both on- and off-site
Permit Status:	June 1989
Required Corrective Action:	Pump and treat contaminated groundwater

In 1979 the Wisconsin Department of Natural Resources initiated investigations in Saukville, Wisconsin, to determine the source of odors residents reported smelling in their drinking water. The department identified one of three municipal wells as being the source of the odor problem, but subsequent sampling did not identify the contaminants. The Department recommended that the village use the well only when necessary to maintain pressure during high demand. The village constructed a new municipal well and discontinued using the old well. In 1980 EPA detected benzene and trichloroethylene in samples taken from the well but levels were too low to warrant taking any enforcement action. Following spills at the facility, in 1983 the department requested that the facility initiate investigations to define site geology and hydrogeology and to delineate any areas of contamination. Studies indicate that both the upper (glacial) and lower (dolomite) aquifers are contaminated with volatile organic constituents[1] and that contamination has spread off-site. Contamination, however, is not affecting municipal wells used by the village.

The Waste Facilities

The facility has been used since 1949 to manufacture polyester, alkyd, and urethane synthetic resins. Alkyd resins are used in the coatings industry to make paints and varnishes, and polyester resins are sold to the reinforced plastics industry for use in fiberglass boats and molded polyester parts. Urethane resins are widely used for insulation and seating applications. The facility, centrally located in the village of Saukville, Wisconsin, has several buildings, a truck washing area, as well as parking areas on its 11-acre site. The Milwaukee River flows through the village and to the east of the plant site, approximately 1,000 feet from the main plant area.

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[1]Including xylene, toluene, ethylbenzene, benzene, and trans-1,2-dichloroethylene which are toxic in nature.

Permitted in June 1989 to store and incinerate hazardous waste, the facility stores hazardous waste in tanks for subsequent on-site incineration. In previous years the facility had disposed of hazardous waste on site by pouring reaction water down a dry well or by burning in a crude incinerator. These two areas--the well and the old incinerator location--are the primary sources of groundwater contamination at the facility. There is also some concern about spill areas all over the 11 acre site. The most universal constituents representing the highest concentrations at the site are the aforementioned volatile organic constituents.

On the west side of the facility an electrical parts manufacturer operated between 1951 and 1971. It used trichloroethylene for degreasing metal parts and disposed of waste sludge on the property. The waste has apparently contaminated shallow groundwater beneath the property, and a 450-foot deep well on the property may have allowed waste to reach the deep aquifer. The facility has repaired the well to prevent any further contamination. The current owner of the property is relying on the facility to address contamination on its property under the facility's corrective action plan. According to the EPA facility manager, the facility and the company have entered into a cost sharing arrangement for activities that the facility undertakes on the other property.

Interim Measures Have Halted the Spread of Groundwater Contamination

As a result of negotiations between the facility and the Wisconsin Department of Natural Resources following the discovery of contamination at the site, a series of observation and monitoring wells were installed. In addition, the facility conducted a hydrogeologic assessment of the site by conducting pump tests on municipal water supply wells as well as the well on the adjacent property. As a result of information obtained during site

investigations, in May 1986 the facility undertook a three-tiered program to address contamination in the glacial and dolomite aquifers. Measures proposed and undertaken include the installation of (1) a collection system to draw contaminated water from the upper soils and aquifer, (2) withdrawal wells from the upper dolomite aquifer to draw contaminated groundwater, and (3) a withdrawal well from the lower dolomite aquifer to draw contaminated water.

In addition, the facility undertook several other measures to eliminate potential contamination sources by excavating, plugging wells, paving, and reconstructing areas of the site. The facility has been actively pumping and sampling contaminated groundwater from the site since 1986. Groundwater is either treated or discharged into the Milwaukee River, depending on the contaminants found in the water. Studies conducted by the facility indicate that pumping efforts have halted the spread of contamination away from the site. The facility has also had an on-going program to monitor municipal and private wells in Saukville. Municipal water wells used by the village are reportedly clean. Two private wells tested have shown evidence of contamination and these have since been decommissioned. Discharge from the facility into the Milwaukee River meets drinking water standards.

Corrective Action Will Require Additional Work

According to the EPA facility manager, after completing the 1986 action plan and after taking the above interim measures, the facility requested EPA to issue it a corrective action consent order (3008(H) order) so that it could be assured that actions taken at the facility under agreement with the state would also satisfy EPA corrective action requirements. As a result of this request, EPA, the state of Wisconsin, and the facility jointly entered into a consent agreement in October 1987.

According to the EPA facility manager, the actions the facility had taken up until that point were viewed by EPA as being interim measures. As a result, EPA combined the RFI/CMS study phases for the facility. The ultimate remedial action that will be selected for the facility will including pumping and treating, just as the facility is currently doing.

The EPA facility manager said that the corrective action order imposed by EPA, however, did require the facility to undertake additional work. Soil testing is required both on and off site. The EPA facility manager also said that the soil testing will be a major undertaking as the facility had previously covered about 90 percent of the site with asphalt as a means of controlling the further spread of contamination. The issue of soil contamination, the complications associated with the asphalt cover, and its effect on further contamination will be subject to further study and risk assessment. In addition, the groundwater collection system in the upper aquifer has resulted in lowering the water table. Hence, contamination is being suspended in the upper, drier soils rather than leaching through to the groundwater for subsequent extraction and treatment. This will also be subject to further study. An additional work plan to cover these concerns has been ordered by EPA and the facility is preparing the work plan.

Final Corrective Action Measures Have Yet to Be Selected

The facility has adhered to the original schedule for submitting tasks and plans under the 3008(H) corrective action order issued in 1987. Some support plans, which were originally submitted in December 1987, have yet to receive final approval largely because of delays associated with developing an adequate quality assurance plan for sampling and analysis. The EPA facility manager said that the facility's contractor required over 2 years to develop what EPA thought was an acceptable plan. Several drafts

were submitted to EPA during 1988, 1989, 1990 and 1991 which EPA found deficient. However, the contractor was subsequently replaced with a new contractor who is revising the prior work submitted. It was believed that the new contractor will, because of its prior experience at another hazardous waste facility requiring cleanup, will quickly be able to develop an acceptable plan. Delays in approving the plan have not, according to the EPA facility manager, delayed work at the site.

The EPA facility manager said that the ultimate corrective action measure selected for the site will include pumping and treating the groundwater. The major unresolved question that currently exists, however, is the extent of soil contamination and the risks posed. A risk assessment will be performed as part of the corrective measures study to determine what impact soil contaminants could have on human health and the environment. The EPA facility manager stated that it will take many years to ultimately clean up the site. While the ultimate goal will be to eliminate all the volatile organic constituents, this will likely be impossible. As a result, clean-up standards will likely be established as part of the risk assessment.

JANESVILLE DISPOSAL FACILITY
FID#154010560

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1. On p. 1, the sentence in the first paragraph about cleanup authorities should also be changed per comment 3 below.

2. The State of Wisconsin apparently <u>did</u> sign the consent agreement pertaining to the remedial investigation and feasibility study, as indicated in the middle of page 3. [I misread this statement originally.] The portion of the GAO document which I received did not discuss the consent decree for the Remedial Design and Remedial Action (RD/RA); Wisconsin did not sign the latter consent decree.

3. My understanding of the situation is that RI/FS activities were conducted under <u>both</u> CERCLA and RCRA authorities, but that the RD/RA (approximately equivalent to a RCRA Corrective Measures Implementation) is being conducted <u>under CERCLA</u> with RCRA as an ARAR. Thus, the paragraph (middle of p. 3) describing the cleanup authorities for the units is likely not accurate.

4. Page 4 has a paragraph about air contamination at/around the "old and new landfills" [I believe this means the 1978 and 1985 Sites.] Although I have not reviewed any health & safety plans for the facility, I am unaware that masks are worn when working "around these sites." I accompanied an EPA inspector on a land disposal facility inspection at the 1985 Site in November 1992; no mention of masks was made although we spent only a limited amount of time at that site. Perhaps the statement in GAO's narrative refers to a requirement of excavation, construction, and/or drilling activities [activities I have not personally observed] at the facility, rather than to routine inspections and groundwater monitoring. GAO should clarify this statement.

Tim - here are my comments based on a limited review, of course). Hope this will do. Stop by if there are Qs.
Cindy

LANDFILL IN JANESVILLE, WI

Location:	About 1.5 to 2 miles north of downtown Janesville, Wisconsin, and about 1,200 feet east of the Rock River
Manufactures:	City landfill
Waste Site(s):	Three regulated and unregulated landfill units and ash beds
Hazardous Waste Operations Began:	1950
Waste Concerns Surfaced:	Groundwater contamination confirmed in 1983
Hazardous Constituent(s):	Trichloroethene, acetone, manganese, arsenic and methane gas
Resources at Risk:	Groundwater, surface water, air
Extent of Known Contamination:	Groundwater, surface water, air
Permit Status:	Not subject to permitting
Required Corrective Action:	Capping, pumping and treating groundwater, venting and flaring gases
Areas of Special Concern:	Air, Rock River

12/4/92

Cindy –

TOP PRIORITY! (Unless Mark or ED overrule!). Could you please review this Corrective Action Summary for Janesville and, if necessary, write a ~~or~~ two to support/refute/clarify? And, all of this needs to be done ASAP. I have to provide a comment memo to GAO on Monday pm. I'll be in by 8:00 am to discuss. Thanx!

Russ

The land disposal facility, which operated between 1950 and 1985, has monitored groundwater since 1972. However, it was not until 1983, when groundwater monitoring data from the early 1980's was summarized and a site visit was conducted, was groundwater contamination confirmed. The high levels of volatile organic compounds found at two units at the facility resulted in these units being proposed for the National Priorities List. Groundwater is contaminated with volatile organic compounds and this contamination has migrated off site in the direction of the Rock River. Methane is migrating off site along the northern boundary through the soil. The facility is being cleaned up under both Superfund and RCRA corrective action authorities. Final measures to address contamination at the site are currently being implemented. They include pumping and treating groundwater, upgrading covers on units, and installing gas extraction/flaring systems.

The Waste Facilities

The facility is a city landfill and disposal facility covering about 65 acres about 1.5 to 2 miles from Janesville, Wisconsin. The facility operated between 1950 and 1985, when the last of its four disposal units closed. The Rock River flows about 1,200 feet west of the site, with groundwater under the site flowing to and discharging into the river. During its operation, both municipal and industrial wastes were disposed of. Industrial wastes include solvents, paints, paint thinners, used oils, petrochemicals, and plating wastes.

The first disposal area is an unlined, uncapped dump site that occupies about 15 acres. Wastes were burned prior to disposal and the area was abandoned in 1963 when capacity was reached. The second disposal area, an unlined but capped old landfill, covers about 18 acres; it was used between 1963 and 1978. The area was licensed by the state to accept municipal and industrial wastes.

The third disposal area, a clay-lined and capped landfill, covers about 16 acres; it operated between 1978 and 1985. It was licensed by the state to accept municipal and industrial wastes. The fourth area consists of unlined and lined ash beds where industrial liquids and sludges were disposed of and allowed to evaporate or dry. The resultant dry sludge was then removed for disposal in the landfills. The ash beds, which were licensed to receive hazardous waste, operated from 1974 to 1985. Between 1983 and 1985 the beds were excavated and closed. The state approved final closure of both the newer landfill and the ash beds in November 1986.

Three of the four units are leaking volatile organic compounds into the groundwater--the ash beds and both the old and the new landfills. Contamination has been found in the upper aquifer both on and off site. While this aquifer is used as a source of drinking water, no wells are in the vicinity of the facility, and drinking water supplies are not in imminent danger. In addition, both the old and the new landfills evidence high levels of methane gas that probably serve as a carrier of volatile organic constituents and may affect air quality.

Early Attempts to Close Facility Failed

Newspaper articles in the early 1970s addressed closing one of the landfills at facility due to concerns about the high groundwater and the highly permeable soils. As early as 1975, on site groundwater monitoring wells detected contamination at the old landfill. Contaminants included lead, chromium, and phenol. The state issued a closure order for the old landfill unit in 1975, and the new landfill was constructed with a clay liner. In May 1983 a preliminary assessment of the old landfill was completed. The assessment found heavy metals and volatile organic constituents in the groundwater. Following the assessment both the ash beds and the old landfill were proposed for the National Priorities List,

and in 1985 the facility closed the new landfill and completed closing all the ash beds. The EPA facility manager said that the new landfill was not investigated and scored for the National Priorities List because, in 1983, it did not appear to be causing problems. Subsequently, this unit was found to be a source of groundwater and air contamination.

Site Cleanup Being Addressed
Under Superfund and RCRA

EPA, the state of Wisconsin, the city of Janesville, and several potentially responsible parties whose waste was disposed at the facility finalized a consent agreement in December 1986 to conduct a remedial investigation of the site and a feasibility study to address contamination. The old landfill and the ash beds are being investigated and cleaned up under both Superfund and RCRA regulations, while the new landfill, the dump, and all remaining contiguous property are being investigated and cleaned up under RCRA. Both Superfund and RCRA were included in the 1986 agreement at the request of a primary potentially responsible party that asked that RCRA regulations be included so that RCRA would not bring an action after Superfund actions had been completed at either the old landfill or the ash beds.

The workplan for conducting the site investigation was approved in August 1987 and the investigation continued through 1989, when EPA approved the final report. Contaminants detected in the groundwater and caused by the old and new landfills as well as the ash beds include volatile organic compounds (including acetone and trichloroethene). Some metals, such as manganese and arsenic have also been detected. This contamination has slowly moved off site towards the river. However, some contaminants found between the facility and the river may be due to another company that is located between the two and which had a trichloroethane spill in 1985. This facility is being separately investigated by the state.

The old and new landfills are also emitting methane and volatile organic compounds into the air. Soils at the ash beds and both the dump and the old landfill are also contaminated, which could result in additional groundwater contamination. Surface waters and sediments in the Rock River have low levels of contamination that are not considered a threat to human health and the environment.

The greatest threat posed by the facility is to individuals breathing air at or around the old and new landfills. According to the EPA facility manager, employees wear masks when working around these sites. While the groundwater contamination poses some threat, it is not an immediate threat as it is not being used for drinking water. Because only low levels of contaminants have currently been found in the river, the risk to river organisms is low. However, groundwater testing on-site shows medium to high levels of contamination and the groundwater discharges into the river.

Cleanup Actions Underway

In December 1989, EPA issued a Record of Decision that described the corrective measures to be implemented at the facility. Measures include installing a gas extraction and flaring system at the old and new landfills, placing new caps over the landfills and the ash beds, and pumping and treating contaminated groundwater. Even though EPA issued its decision in 1989, it was not finalized until January 1992 because of lengthy negotiations

Wisconsin Department of Natural Resources

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TELEFAX COVER SHEET

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FAX NUMBER: 214/855-2758

SUBJECT: Case Studies Review

FROM: Tim Mulhollland

OFFICE PHONE #: 608/266-0061

DATE: 8 December 1992

A TOTAL OF 4 PAGES WILL FOLLOW
(Excluding this Cover Sheet)

COMMENTS:

Marcia - Sorry that this is a day late. Hard copy will follow. We hope that this will help!

Tim