→ Freeman Corrective Action File
FID# 246 004 330
① Ed Lynch
② IEMP File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

OCT 21 1987

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

OCT 23 RMD

Russell L. Cerk, President
Freeman Chemical Corporation
P.O. Box 247
Port Washington, Wisconsin 53074

Re: Administrative Order on Consent
Freeman Chemical Corporation
Port Washington, Wisconsin
Docket Number V-W-88-R-002

Dear Mr. Cerk:

This letter is to correct the October 20, 1987 letter transmitting the fully executed copy of the Administrative Order on Consent. The docket number on that letter was incorrectly stated as V-W-87-C-021. The correct docket number is V-W-88-R-002. Please excuse any inconvenience that this may have caused.

Your cooperation in resolving this matter is appreciated.

Very truly yours,

William H. Miner, Chief
Hazardous Waste Enforcement Branch

Enclosure

cc: William Rosbe, w/enclosure
Ed Lynch, w/enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

IN THE MATTER OF: FREEMAN CHEMICAL CORPORATION P. O. BOX 247 PORT WASHINGTON, WISCONSIN 53074 WID 980 615 439 Proceeding Under Section 3008(h) of the Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments of 1984, (42 U.S.C. §6928(h)).	ADMINISTRATIVE ORDER ON CONSENT U.S. EPA DOCKET NO. DIRECTOR'S FINAL FINDINGS AND ORDERS

V-W- 88 R-002

I. JURISDICTION

This Administrative Order on Consent (Consent Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (U.S. EPA) by Section 3008(h) of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984, (HSWA), 42 U.S.C. §6928(h), and delegated to the Regional Administrator by U.S. EPA Delegation Nos. 8-31 and 8-32 on April 16, 1985, and May 15, 1986.

Freeman Chemical Corporation agrees to undertake all actions required by the terms and conditions of this Consent Order and consents to and will not contest U.S. EPA jurisdiction under §3008(h) to issue this Consent Order.

II. PARTIES BOUND

1. This Consent Order shall apply to and be binding upon Freeman Chemical Corporation (hereinafter referred to as "Respondent"), the Wisconsin Department of Natural Resources (WDNR), U.S. EPA, and any person, officer, director, employee, agent, consultant, laboratory, independent contractor, successor or assign acting in any party's behalf.

2. The undersigned representative for each party certifies that he or she is fully authorized by the party whom they represent to enter into the terms and conditions of this Consent Order and to legally bind such party to this document.

3. The Respondent shall give notice of this Consent Order to any successor-in-interest at least thirty (30) days prior to the transfer of interest and shall contemporaneously verify in writing to U.S EPA that such notice has been given. Any sale or transfer by Respondent of any or all of its Saukville, Wisconsin facility will not relieve Respondent of its obligations under this Consent Order.

4. Respondent, U.S. EPA and WDNR shall each provide a copy of this Consent Order to all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Consent Order within seven (7) days of the effective date of this Consent Order or of such retention, whichever comes first.

III. STATEMENT OF PURPOSE

The objective of this Consent Order and plans implemented thereunder is to protect the public health and the environment through the prevention or reduction of the release or migration of hazardous waste or hazardous constituents to the groundwater, surface water, and soil in and around Respondent's facility. (Respondent's facility, for the purposes of this Consent Order, is all contiguous land and structures owned by Respondent and located in Saukville, Wisconsin). This objective is achieved through the investigation of contaminated groundwater, surface waters, soil, and through implementation of appropriate corrective measures. This objective shall be accomplished pursuant to the provisions set forth in this Consent Order and Attachment I, Scope of Work.

IV. FINDINGS OF FACT

Groundwater and soil on the Respondent's facility is contaminated with hazardous waste constituents as a result of plant operations at the facility. Some of the contamination has migrated off-site onto neighboring property. A major source of groundwater contamination is a seepage pit (dry well) used from 1952 to 1965 to dispose of D001 waste. Specific information pertaining to releases of hazardous waste to the environment can be found on page 5 of this Consent Order in the section titled "Releases to the Environment".

The following constitutes an outline of facts upon which this Consent Order is based.

Background Information

1. The Respondent is a Delaware corporation doing business in the State of Wisconsin. Respondent's registered agent is Milwaukee Office of Corporations Trust Company, 1209 Orange Street, Wilmington, Delaware 19801.

2. From 1948 and continuing to the present the Respondent has operated a polyester, alkyd, and urethane synthetic resin manufacturing plant on Railroad Street in the Village of Saukville, Ozaukee County, Wisconsin 53080.

3. On and subsequent to November 19, 1980, Respondent owned and operated a hazardous waste management facility located at its Saukville, Wisconsin plant. Respondent is treating and storing wastes which are listed as hazardous wastes under Section 3001 of RCRA, 42 U.S.C. §6921, and Chapter NR 181, Wisconsin Administrative Code. These hazardous wastes are rinse solvents and spill residues (U.S. EPA hazardous waste no. F003, Wis. Adm. Codes s.NR 181.16), reaction water (D001, s.NR 181.15), and waste resins (F001, s.NR 181.16).

4. On June 27, 1980, the Respondent submitted to the U.S. EPA a notification of its hazardous waste activity as required by Section 3010(a) of RCRA, 42 U.S.C. §6930(a). On November 3, 1980, the Respondent submitted to U.S. EPA a RCRA Part A permit application as required by Section 3005(a) of RCRA, 42 U.S.C. §6925(a), for the treatment (incineration) and storage of hazardous waste at the facility. Revisions to the Part A application were submitted on April 29, 1985, and December 16, 1985. On March 3, 1983, the Respondent submitted a Part B permit application with revisions submitted on July 27, 1983, May 8, 1984, January 24, 1985, and July 1, 1986.

5. Five different waste streams, identified in the Part A permit application, are generated at Respondent's facility:

a. Solvents (F003 and D001): Rinse solvent, consisting of xylene and other hydrocarbons, and process solvents, including xylene and toluene, are used and stored in the production area, and then transferred to above ground storage tanks (totaling 13,000 gallons capacity) for storage prior to incineration on site.

b. Reaction Water a.k.a. Acid Water (D001): This waste is generated during resin production and includes the solvents toluene (110 mg/l), ethyl benzene (27 mg/l), and phenol (55 mg/l).

c. Clean Up Wastes (U-listed wastes): These wastes are produced by small spills of U-listed wastes throughout the plant and are disposed of off-site.

d. Waste Resins (F001): Test samples, rejected resins, and filter cake that if, in a liquid form, is absorbed onto sawdust and incinerated on-site.

e. Incinerator Ash: The ash from the present incinerator is disposed

of off-site. The proposed incinerator will burn only liquids and will generate little or no ash.

6. Three underground tanks were used prior to 1980 for storage of gasoline, diesel fuel, and caustics. Barrel storage occurred at various locations throughout the facility.

7. Respondent's facility consists of 10.8 acres and is located in an area of rolling to relatively flat terrain. Glacial till, glaciolacustrine, and glaciofluvial deposits overlie dolomite bedrock. The glacial deposits range from 10 to 25 feet in thickness. The land in the vicinity of the facility slopes from west to east towards the Milwaukee River, located approximately a quarter mile east of the facility. Surface water and groundwater in the till flows toward the river.

8. The Laubenstein warehouse property is located immediately west of Respondent's facility. From 1965 through 1971, the Laubenstein warehouse was occupied by Northern Signal Company, an electrical parts manufacturer. In the early 1970's Waters Instruments, Inc. purchased the stock of Northern Signal Company, and plant operations moved to Rochester, Minnesota. J&T, a roofing company, currently occupies the building, and Milton Parlow is the current owner of the property.

Releases to the Environment

1. Since facility operations were initiated in 1948, spills of raw materials, resins and by-products have occurred. Spills have occurred at the incinerator site, from at least one pipeline leak, and at the railroad siding. Releases are also suspected to have occurred at the tank sites and barrel storage areas. Additionally, at least two tanker spills have occurred at the tanker parking areas. The spills resulted in overland flow from the facility to an adjacent church yard in 1979 and to a school yard to the north in the late 1970's as well.

Respondent addressed the spills by removing sod and excavating soil. (Potential sources of groundwater contamination are depicted in Figure 1.)

2. Most contaminated groundwater samples (from the water table, upper and deep dolomite) exhibit an "acid water" odor. The odor is found in two deep wells, the Laubenstein well (an abandoned well located in a warehouse on the Laubenstein property) and city water supply well #2. The odor originates from Respondent's reaction water (D001). From 1948 to 1952 reaction water was disposed of in the Milwaukee River. From 1952 to 1965 reaction water was disposed of in a seepage pit (dry well) near the western property boundary. The seepage pit is currently covered with asphalt. From 1965 to the present, reaction water has been incinerated at the the facility.

3. In 1979, trace organic chemicals and an "acid water" odor were identified in the municipal water supply in Saukville. City well #2, located approximately 600 feet northwest of the Respondent's facility, was found to be contaminated and was removed from municipal use. Groundwater samples from this well contained detectable levels of benzene, toluene, trichloroethylene and xylene. A distinct chemical odor was identified similar to the odor present at the facility. Respondent has continued to use city well #2 as a source of noncontact cooling water. This water is eventually discharged to the Milwaukee River under a WPDES permit.

4. Groundwater contamination has been documented on the Respondent's facility and in the surrounding area, in both the glacial deposits and bedrock. For example, results of a November 28, 1985, sampling event are shown in Table 1. Well locations are depicted in Figure 2. Groundwater monitoring under RCRA has not been conducted because the facility has not operated a land disposal unit since 1965.

5. All of the hazardous wastes or hazardous waste constituents identified in

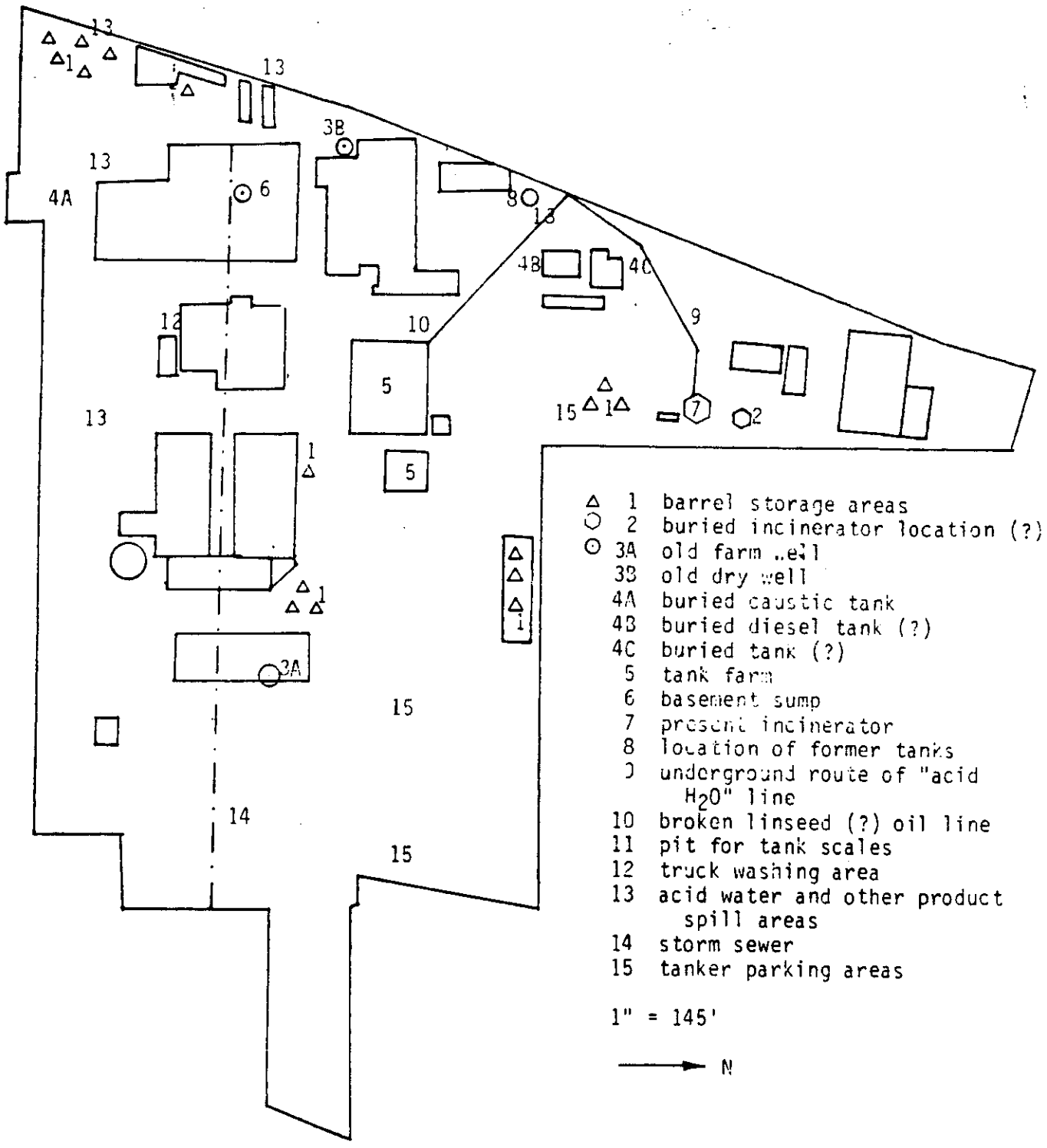

FIGURE 1 - Potential Sources of Groundwater Contamination

Partial sampling results for freeway, November 28, 1985

Location	Tank	Well-3	Well-5	Well-8	Well-10	Well-11	Well-12	Well-7	Well-13	Well-14	Well-15	Well-21	Well-2	Well-20	Well-22	Well-23	Well-24
Methylene chloride	2.4			4.5	7.3	1.1	[illegible]	2.5		5.1		1.2	38.9	4.4			1.5
Toluene		2.8					12000.						340.0			2.2	
Ethylbenzene		1.4			1.2		2200.		520.				4400.0				
m,p-xylene		2.							1300.0								
o-xylene		33.		1.0					270.						5.7		
1,2-trans-dichloroethylene			1.1	130.			1400.0				2600.0			3.2	1600.0		31.
Vinyl chloride				1.2							29.0			3.7	31.		
Trichloroethylene				2000.							7400.0						2.0.
Benzene				31.0			23 [illegible]						390.				
Trichlorofluoromethane					1.5												
1,1-dichloroethylene											4.1						
Chlorobenzene											1.7						
1,1,1-trichloroethane																	2.0

*Raw values in DDD

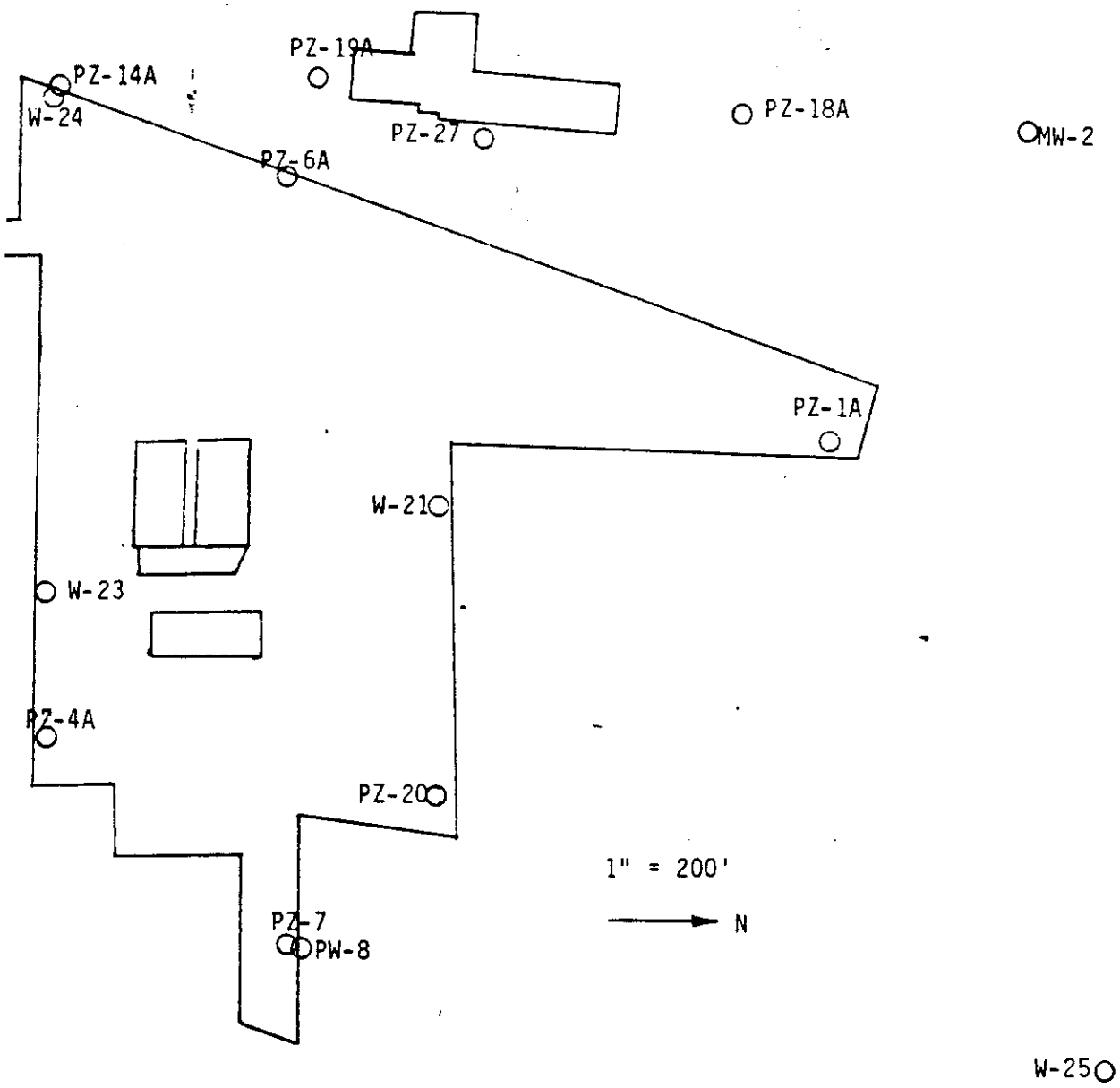

FIGURE 2 - Location of Monitoring Wells

Table 1 are considered toxic. Benzene, trichloroethylene (TCE) and vinyl chloride are known or suspected carcinogens. At low levels, the hazardous waste constituents listed in Table 1 can affect the central nervous system and damage internal organs. These contaminants represent a threat to human health by ingestion and/or absorption. (References: The Merck Index, Tenth Edition; Dangerous Properties of Industrial Materials, Sixth Edition; The Condensed Chemical Dictionary, Tenth Edition). Therefore, the presence of these contaminants may pose a threat to human health and the environment.

6. The Laubenstein well was cased to 30 feet and was an open hole to its depth of 450 feet. Geophysical studies showed that the well casing was damaged. Also, the well was unprotected at the surface for a long period of time. The condition of the well allowed contaminated shallow groundwater to flow downwards into the dolomite. The well was used previously by a dairy and possibly by other operations located at the site. Respondent repaired the well in fall, 1986, to prevent further contamination of the dolomite from leakage through the well.

7. Based on groundwater quality data, solvent concentrations are highest in the glacial materials. The sum of volatile organic compounds (VOCs) in the shallow groundwater is approximately 400 mg/l near the tank farm, 150 mg/l near the dry well, 28 mg/l near the truck scales, 32 mg/l near the southwest barrel storage area, and 4.5 mg/l south of the Laubenstein warehouse.

8. Contamination in the shallow dolomite appears to be more widespread, but of lower concentration than in the glacial materials. The sum of VOCs in the shallow dolomite (upper 100 feet) is approximately 2.1 mg/l at the Laubenstein well, 4.0 mg/l northeast of the tank farm and 0.2 mg/l at the barrel storage area. Lower concentrations of contaminants are found near the south property line and at unused private water supply wells northeast of the Respondent's facility.

9. Hazardous waste constitutents have also been detected in the deep dolomite aquifer (100 to 500 feet below the land surface). A packer was placed in the Laubenstein well to isolate the upper 100 feet. The lower portion of the well was then pumped at 50 gpm for five days. TCE was consistently detected at about 0.012 mg/l throughout the test, indicating that contaminants have spread into the deep dolomite aquifer. City well #2 has shown trace levels (usually less than 0.001 mg/l) of TCE and, occasionally, other hazardous waste constituents.

10. TCE has been found in monitoring wells on Respondent's facility. According to Northern Signal Company's June 25, 1981, response to a U.S. EPA request for information, while Northern Signal occupied the Laubenstein property they used TCE for degreasing metal parts and disposed of waste TCE sludge on the Laubenstein property grounds.

11. Soil contamination has been identified at Respondent's facility. Soil samples collected during the soil boring and monitoring well installation program were routinely sniffed and given a qualitative odor classification. The highest levels of soil contamination (judged by odor tests) were found:

a. At the tank farm in the central area of the facility;
b. On the church property, northeast of the site where previous spills have occurred;
c. Along the southwestern property line near a barrel storage area;
d. In the area of the abandoned dry well; and
e. North of the truck scales where solvent containers are located.

Diffusion and shallow groundwater movement have carried the contaminants away from these central areas so that contaminated soil is frequently found at Respondent's facility and also to the northeast and southwest of the facility.

Site Investigations Performed

1. In 1983, subsurface investigations were initiated to define site geology and hydrogeology and to delineate areas of contamination. The investigation area included Respondent's facility, the Laubenstein property, the cemetery to the south, the Logeman Brother's facility to the southwest, the church property to the northeast, and the area between the facility and the Milwaukee River. Between September and December, 1983, 49 borings were installed on Respondent's facility and on surrounding areas. The borings included the installation of thirteen water table observation wells and three nested piezometers. In 1985, a number of existing monitoring wells were abandoned or replaced. Four piezometers within the dolomite bedrock, two new water table observation wells, and one deep piezometer were installed.

2. A number of studies have been conducted to determine the site geology, hydrogeology, and extent of contamination. On March 4, 1986, Respondent submitted a report to WDNR and U.S. EPA titled "Summary 1985 - Interim Remedial Investigations Report" dated February 28, 1986, prepared by Hatcher, Inc., Respondent's consultant. This report presents data collected during 1985, summarizes all site investigations and presents a proposed remedial action program.

Additional documents concerning the remedial investigation include the following:

a. "Hydrogeologic Assessment at Saukville, Wisconsin," dated October 1, 1983, prepared by Olver, Inc. and received by WNDR on October 10, 1983.

b. "Hydrogeologic Assessment at Saukville, Wisconsin - Interim Report" dated June 20, 1984, prepared by Olver, Inc. and received by WDNR on July 10, 1984.

c. "Hydrogeologic Assessment at Saukville, Wisconsin - Municipal Well Pump Tests and Laubenstein Well Packer Pump Tests," dated January 10, 1985, prepared by Olver, Inc. and received by WDNR on January 14, 1985.

d. "Summary, Hydrogeologic Assessment Activities, Saukville, Wisconsin," dated January 11, 1985, prepared by Hatcher, Inc. and received by WDNR on January 14, 1985.

e. "Groundwater Monitoring Data, Saukville, Wisconsin, Winter and Spring, 1985", prepared by Hatcher, Inc., dated June 14, 1985, and received by WNDR on June 18, 1985.

Site Hydrogeology

1. Glacial till, glaciolacustrine, and glaciofluvial deposits overlie dolomite bedrock at Saukville. Unconsolidated deposits range from approximately 10 to 25 feet in thickness. In general, sand, silt, and clay are present near the land surface and overlie a laterally continuous layer of lake sediments (varved silts and clays). Dense glacial till exists beneath the lacustrine deposits in the north and east portions of the property. Beneath the till and lacustrine deposits is a thin layer of glacial outwash over the bedrock surface.

2. Soil borings and seismic refraction surveys show the bedrock surface at the site to be pinnacled with occasional deep, narrow, closed depressions (possibly sink holes). A deep depression in the bedrock, filled with more than 150 feet of clay, silt and sand, is in the northeast corner of Respondent's facility. A bedrock high occurs near the center of Respondent's facility. At four locations

the bedrock (the Niagara dolomite) was cored to a depth of 65 to 85 feet. The cores show that the dolomite is severely solutioned and highly fractured.

3. The water table is located approximately 5 to 12 feet below the land surface at the Respondent's facility. The water table, which is in the unconsolidated materials, follows the slope of the topography and flows east and southeast toward the Milwaukee River.

4. The dolomite aquifer is semi-confined by the surficial glacial and lacustrine materials. As measured in the summer of 1985, a groundwater high in the bedrock exists in the west central portion of Respondent's facility corresponding to the bedrock high. Groundwater in the dolomite aquifer flows in every direction away from this high. However, flow in the dolomite is predominantly west (toward the Laubenstein well), northwest (toward City Well #2), and east/southeast (toward the Milwaukee River). The location of a divide through the western third of the Respondent's facility is apparently controlled by pumping of city well #2.

5. A "cone of depression" exists at the Laubenstein well, even though it is not pumped. This cone appears to be a secondary effect caused by the pumping of city well #2. A dolomite piezometer, well #22, was installed between city well #2 and the Laubenstein well. When city well #2 is pumped, the water level in the Laubenstein well falls 20 to 30 feet while there is only a small response in water levels at well #22. This indicates that the Laubenstein well and city well #2 are probably hydrogeologically interconnected by one or more solution channels.

6. The Village of Saukville (pop. 3631 - 1985 census) pumps groundwater from the dolomite to provide the village water supply. There are four village water

supply wells: city well #1, approximately 1,200 feet northeast of the facility; #2, approximately 600 feet northwest of the facility and 750 feet north of the Laubenstein well; #3, on the east side of the Milwaukee River; and #4, approximately 4,000 feet north of the facility.

Interim Corrective Measures

1. Respondent is conducting a three-tiered corrective action program to address contamination in the surficial glacial materials, the upper dolomite aquifer and the deep dolomite aquifer. These corrective measures are being conducted at Respondent's facility and in the adjacent church property. Actual implementation of the corrective measures began in May, 1986, following WDNR review and approval of the plans for such corrective measures. As of December 1986, the following wells and other equipment necessary to implement the corrective measures have been installed:

a) Three Ranney collection systems have been installed to draw contaminated water from the glacial soils to central collection points. These systems, similar to a series of French drains, consist of gravel-filled trenches approximately 15 feet deep located near the the top of the bedrock, with a collection pipe at the bottom of the trench. Collected groundwater will gravity drain to a central manhole, for each Ranney collector. From there it will be discharged to the Village of Saukville wastewater treatment plant. It is estimated that 8 gpm will be collected by the three systems.

b) Four six-inch diameter withdrawal wells are installed in the upper dolomite. Groundwater will be pumped from the wells and mixed with water from the deep dolomite aquifer.

This water will be used as noncontact cooling water for plant operations.

c) One deep dolomite withdrawal well has been installed at Respondent's facility to address contamination of the deep dolomite aquifer. Groundwater will be mixed with water from the upper dolomite and used as cooling water. Respondent has proposed that city well #2 (used exclusively by Respondent for cooling water) and city well #1 be taken out of service in order to avoid spreading of the contaminated groundwater and to control groundwater flow directions. City well #3 (on the east side of the Milwaukee River) has been repaired by Respondent and is used for municipal water supply. Proposed changes to the municipal water supply have been approved by the Village of Saukville and the WDNR.

2. In addition to the groundwater clean-up program, Respondent is implementing measures to eliminate potential contamination sources by excavation, plugging, paving and reconstruction techniques. These measures include:

a. Removal of buried and unused tanks;

b. Exhumation and sealing of the old dry well area;

c. Reconstruction of all floor sumps;

d. Removal and reconstruction of the tank farm and removal or flushing of all buried raw material pipes;

e. Paving of active areas of the plant and a comprehensive surface water control program;

f. Construction of an enclosed truck unloading facility; and

g. Locating and sealing an old farm well on the property.

3. The WDNR Bureau of Waste Water Management is requiring Respondent to collect and treat stormwater runoff prior to discharge via storm sewers to the river. Respondent is paving a large portion of the facility grounds to facilitate stormwater collection. The surface water will be sampled and treated, if necessary, prior to discharge under a WPDES permit to the river.

V. CONCLUSIONS OF LAW

Based on the Findings of Fact set out above, and the administrative record, the Regional Administrator of the U.S. EPA has made the following conclusions of law and determinations:

1. Respondent is a "person" within the meaning of Section 1004(15) of RCRA, 42 U.S.C. §6903(15);

2. Respondent is the owner or operator of a facility that has operated or is operating subject to Section 3005(e) of RCRA, 42 U.S.C. §6925(e);

3. Certain wastes and constituents thereof found at the facility are hazardous wastes or constituents thereof as defined by Section 1004(5) of RCRA, 42 U.S.C. §6903(5). These are also hazardous wastes or hazardous constituents within the meaning of Section 3001 of RCRA, 42 U.S.C. §6921 and 40 CFR Part 261;

4. There is or has been a release of hazardous wastes and/or hazardous constituents into the environment from Respondent's facility; and

5. The actions required by this Consent Order are necessary to protect the public health or welfare or the environment.

VI. COMPUTATION OF TIME

1. In computing any period of time prescribed in this Consent Order, the day

of the act from which the designated period of time begins to run shall not be included. All time limits in this Consent Order, unless otherwise specified, refer to calender days.

2. Any time prescribed in this Consent Order shall only be enlarged pursuant to Section XVI of this Consent Order or by written mutual agreement of all three parties.

VII. WORK TO BE PERFORMED

1. All corrective measures work to be performed by the Respondent pursuant to this Consent Order shall be under the direction and supervision of a qualified professional engineer or geologist. Prior to the continuation of any corrective measures work at the facility, the Respondent shall notify the U.S. EPA and WDNR in writing of the name, title, and qualifications of a proposed engineer or geologist to be used in continuing the corrective measures work. Any such engineer or geologist shall first be subject to approval by the U.S. EPA and WDNR, which approval shall not be unreasonably withheld or delayed.

2. All corrective measures work shall be in accordance with RCRA, its implementing regulations, applicable Wisconsin laws and implementing regulations, and applicable guidance, including, without limitation "RCRA Ground Water Monitoring Technical Enforcement Guidance Document", September, 1986.

3. Attachment I to this Consent Order provides a Scope of Work (SOW) for the completion of corrective measures work at Respondent's facility and is incorporated into and made a part of this Consent Order. The Respondent shall implement all work detailed in the SOW, as approved by U.S. EPA and WDNR.

4. Work that is performed pursuant to this Section and the SOW shall be reviewed as specified in Section VIII, Reports.

5. Based on the foregoing, it is hereby AGREED TO AND ORDERED that the following corrective action work shall be performed:

a. Within twenty (20) days of the effective date of this Consent Order, the Respondent will provide analyses results for laboratory certification for the laboratory chosen by Respondent to provide the analyses required under the terms of this Consent Order. This certification shall be based on a performance audit on a minimum of two performance evaluation samples. In the event of any disapproval of certification by U.S. EPA, U.S. EPA may require that Respondent either select another laboratory for laboratory certification, or allow the original laboratory to analyze a second round of test blanks. Ten (10) days will be allowed for the analysis of a second round of test blanks by either the new or the original laboratory.

b. Respondent shall submit to U.S. EPA and WDNR a Completion Report (Site Construction Documentation Report) within thirty (30) days after the effective date of this Consent Order, in accordance with Task 1 of the SOW. The report shall describe past and current conditions at the facility, document contamination, and verify all aspects of the corrective measures program.

c. Within thirty (30) days of the effective date of this Consent Order the Respondent shall submit to the U.S. EPA and WDNR, in accordance with Task 2 of the SOW, a schedule for implementing corrective measures and investigations at the facility.

d. Within sixty (60) days of the effective date of this Consent Order, the Respondent shall submit to the U.S. EPA and WDNR, in accordance with Task 3 of the SOW, support plans for conducting corrective measures and investigations at the facility.

VIII. REPORTS

1. Respondent shall submit to U.S. EPA and WDNR quarterly written progress reports which describe the actions which have been taken during the previous quarter toward achieving compliance with this Consent Order. Reports shall be submitted within fifteen (15) days after the end of the quarter during which such activities are in progress, beginning with the full calendar quarter following the effective date of this Consent Order. At a minimum, quarterly reports shall include:

a. A description of the actions taken and the progress made toward completing the tasks as described in the SOW;

b. The date actions were completed;

c. An identification of any event which may cause a delay in completing any future tasks, as provided in Section XVI of this Consent Order;

d. Results of sampling and tests received by Respondent; and

e. The activities scheduled for the next quarter.

If the U.S. EPA and WDNR determine that any modification to the progress reports is needed, such modifications will be incorporated into the subsequent quarterly written progress report.

2. Respondent shall submit to U.S. EPA and WDNR an annual report on the anniversary of the effective date of this Consent Order. The report shall be submitted pursuant to Task 5B of the SOW, and include the status of corrective measures to date, how the objectives of the corrective measures are being met, a summary of the data collected during the year, and a projection for future actions.

3. In addition to the foregoing reports, the Respondent shall submit to the U.S. EPA and WDNR, according to the schedule submitted by the Respondent under Task 2 of the SOW, other required plans and reports.

4. The U.S. EPA and WDNR shall jointly review all plans and reports, (other than the quarterly progress reports) submitted pursuant to this Consent Order, and within forty-five (45) days of receipt of such plans or reports, the U.S. EPA shall notify the Respondent in writing, of the modifications which must be made prior to approval of any such plans or reports, which approval shall not be unreasonably withheld or delayed. In the event more time is required for review, U.S. EPA will notify Respondent within thirty (30) days of receipt of a report.

5. Should U.S. EPA and WDNR disapprove of any plans or reports (other than the quarterly progress reports), the Respondent shall submit a revised plan or report to the U.S. EPA and WDNR incorporating the required modifications within thirty (30) days of receipt of any written notice of disapproval.

6. Within thirty (30) days of receipt of any revised plan or report (other than the quarterly progress reports), the U.S. EPA shall notify the Respondent in writing of approval or disapproval of such revised plan or report. In the event of any such disapproval, the U.S. EPA notice shall specify the reason for disapproval. Subject to Section XVIII of this Consent Order, the Respondent shall implement any specified modifications to any such revised plan or report.

7. Documents, including all reports and approvals, shall be submitted to the following addresses or to such other address as the parties hereinafter may designate in writing:

A. Those documents to be submitted to U.S. EPA and WDNR should be sent to:

(2 copies)
United States Environmental Protection Agency
Hazardous Waste Enforcement Branch (5HE-12)
230 South Dearborn Street

(3 copies)
Chief
Hazardous Waste Management Section
Wisconsin Dept. of Natural Resources
P.O. Box 7921
Madison, Wisconsin 53707

Chicago, Illinois 60604
Attn: Marian Barnes
RCRA Enforcement Section

(2 copies)
Franklin Schultz
Solid Waste Coordinator
P. O. Box 12436
2300 North Martin Luther King Drive
Milwaukee, Wisconsin 53212

B. Those documents to be sent to the Respondent should be sent to:

Russell L. Cerk
Vice-President of Manufacturing
Freeman Chemical Corporation
P.O. Box 247
217 Freeman Drive
Port Washington, Wisconsin 53074

Roger Hatcher, Ph.D.
President, Hatcher, Inc.
Suite 101
1523 Huguenot Road
Midlothian, Virginia 23113

Notice to the individuals listed above shall constitute complete satisfaction of any notice requirement of this Consent Order with respect to U.S. EPA, WDNR, and Respondent.

IX. ADDITIONAL WORK

The U.S. EPA or WDNR may determine that additional investigatory work, corrective measures, and/or engineering evaluation, in addition to any work detailed in the SOW, is necessary to thoroughly conduct corrective measures work at the facility. If the annual evaluation conducted under Task 5B of the SOW determines that the corrective measures do not meet the stated objectives of such corrective measures, Respondent will submit a proposal for additional work. Subject to Section XVIII of this Consent Order, the Respondent shall implement, after review and approval by U.S. EPA and WDNR, any additional work which is determined to be necessary to thoroughly conduct corrective measure activities at the facility.

X. FINANCIAL ASSURANCE

1. Within thirty (30) days of the effective date of this Consent Order, the

Respondent shall provide financial assurance using one or more of the mechanisms allowable under 40 CFR 265.143 for the corrective measures to be undertaken at the facility.

2. The financial assurance mechanism may divide one construction expenditure from another and may divide construction expenditures from operational expenditures. The amount of financial assurance may be adjusted to reflect the approved completion of construction items. Each year on the anniversary of the provision of financial assurance, the Respondent shall adjust the amount of financial assurance covering incomplete construction by the method set out in 40 CFR 265.143.

3. If the Respondent fails to perform any of the terms or conditions of this Consent Order, then the financial assurance will be available to U.S. EPA to perform such terms or conditions, provided that prior to drawing upon any financial assurance instrument, U.S. EPA shall notify the Respondent in writing of the alleged failure to perform and provide the Respondent with a reasonable period of time in which to remedy the alleged non-performance.

XI. PROJECT MANAGERS

1. On or before the effective date of this Consent Order, Respondent, U.S. EPA and WDNR shall each appoint a Project Manager (PM), and one alternate, to oversee the implementation of this Consent Order. The parties shall notify each other, within fourteen (14) days of effective date of this Consent Order, of the name, address and telephone number of the designated and alternate PM. Respondent's PM, and alternate, shall be a qualified engineer or geologist with the responsibility to direct and supervise all on-site work. Respondent's PM, or alternate, shall be on-site when any work under this Consent Order is being conducted and shall be on call for the pendency of this Consent Order.

2. U.S. EPA, WDNR, and the Respondent each have the right to change their respective PM or alternate. Such a change shall be accomplished by notifying the other parties in writing at least fourteen (14) days prior to the change.

3. The U.S. EPA PM shall have the authority, in the event of an emergency, to halt any activities being conducted under this Consent Order at the facility.

4. The absence of the U.S. EPA or WDNR PM from the facility shall not be cause for stoppage of work. During the course of implementation of the Consent Order, the PMs shall, whenever possible, operate by consensus, and shall attempt to resolve disputes informally through good faith discussion of the issues.

XII. COMPLIANCE WITH APPLICABLE LAWS

All work undertaken by the Respondent pursuant to this Consent Order shall be performed in compliance with all applicable federal and State laws and regulations, including without limitation, all Occupational Safety and Health Administration, and Department of Transportation regulations. The Respondent shall be responsible for obtaining all federal, State or local permits which are necessary for the performance of the work.

XIII. ACCESS

1. U.S. EPA, WDNR and/or any U.S. EPA or WDNR representative, including U.S. EPA or WDNR contractors, are authorized to enter at reasonable times and freely move about the facility for the purposes of, inter alia: interviewing facility personnel and contractors concerning work conducted pursuant to this Consent Order; inspecting records, operating logs, and contracts related to work performed or to be performed pursuant to this Consent Order; reviewing the progress of the Respondent in carrying out the terms of this Consent Order; conducting such sampling and tests as U.S. EPA, WDNR or their representative deem necessary;

using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to U.S. EPA and WDNR by the Respondent. The Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this paragraph.

2. Within forty-five (45) days of the effective date of this Consent Order, the Respondent shall obtain or will use best efforts to obtain access agreements and permission to undertake any activities required by this Consent Order beyond the facility boundary. "Best efforts" as used in this Section shall include, at a minimum, a certified letter from Respondent to the present owners of such property requesting access agreements to permit the Respondent, U.S. EPA, WDNR, and/or authorized representatives of U.S. EPA and WDNR to have access to such property. Such agreements shall provide access for the U.S. EPA, WDNR, and/or authorized representatives of the U.S. EPA and WDNR and shall be incorporated herein by reference. In the event that such access agreements are not obtained within the time referenced above, the Respondent shall notify the U.S. EPA and WDNR regarding both the lack of, and efforts to obtain such access agreements.

3. Nothing in this Section limits or otherwise affects U.S. EPA's or WDNR's right of access and entry pursuant to applicable laws, including RCRA and CERCLA.

XIV. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. The Respondent shall make the results of all sampling and/or tests or other data generated by the Respondent, or on behalf of the Respondent, pursuant to implementation of this Consent Order, available to the U.S. EPA and WDNR, and shall submit these results in the quarterly progress reports as described in Section VIII of this Consent Order.

2. At the request of the U.S. EPA or WDNR, Respondent shall provide split or duplicate samples to the U.S. EPA or WDNR of any samples collected by Respondent pursuant to the terms of this Consent Order. The Respondent shall give the U.S. EPA and WDNR fourteen (14) days advance notice before sampling. Respondent agrees to cooperate with representatives of the U.S. EPA and WDNR and to permit such representatives to take samples, including split samples, at all locations at the facility. Copies of the results of any such samples shall be provided to the Respondent by the U.S. EPA and WDNR.

3. Pursuant to applicable federal laws and regulations, the Respondent may assert a confidentiality claim with respect to any or all of the information submitted pursuant to the terms of this Consent Order. Such an assertion must be made when the information is submitted. Analytical data shall not be claimed as confidential by the Respondent. Disputes over confidentiality shall be handled in accordance with 40 CFR Part 2, Subpart B. Information determined to be confidential by the U.S. EPA in accordance with applicable federal laws and regulations will be protected accordingly. If no such claim accompanies the information when it is submitted to the U.S. EPA, or if the information is determined not to be confidential in accordance with federal laws and regulations, the information may be made public by the U.S. EPA. The U.S. EPA shall provide written notice to the Respondent in the event of any such determination.

XV. RECORD PRESERVATION

The Respondent agrees to preserve, during the pendency of this Consent Order, and for a period of three (3) years after its termination, all records, documents, and information relating to the performance of the work at the facility and the removal of waste materials from the facility, including sample analyses, chain

of custody records, manifests, contracts, trucking logs, bills of lading, receipts, records pertaining to traffic routing, destination of waste materials, volume and chemical nature of such materials, correspondence, and other documents produced during the work.

Respondent further agrees that within five (5) days of the effective date of this Consent Order or of retaining or employing an agent, consultant or contractor, whichever comes first, Respondent will enter into an agreement, to be confirmed in writing within fifteen (15) days, with its agents, consultants and/or contractors whereby its agents, consultants and/or contractors will be required to maintain and preserve during the pendency of this Consent Order and for a minimum of three (3) years after its termination, all records and documents within their respective possession which relate in any way to this Consent Order or to hazardous waste management and disposal at the facility.

U.S. EPA and WDNR shall have access to such records for inspection and copying. At the end of the three (3) year period, prior to destroying any such records, the Respondent shall notify the U.S. EPA and the WDNR and give U.S. EPA and WDNR an opportunity to copy such records. The Respondent further agrees to make available to the U.S. EPA and WDNR any employees with knowledge of relevant facts concerning the performance of the work for purposes of investigation, information gathering, or testimony related to the work.

XVI. FORCE MAJEURE AND EXCUSABLE DELAY

1. Respondent shall perform the requirements under this Consent Order within the time limits set forth or approved or established herein, unless the performance is prevented or delayed solely by events which constitute a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and

beyond the control of Respondent, including its consultants and contractors, which could not be overcome by due diligence and which delays or prevents performance by a date required by this Consent Order. Such events do not include unanticipated increased costs of performance, changed economic circumstances, or normal precipitation events.

2. Respondent must notify U.S. EPA in writing fifteen (15) days after it becomes aware of events which it knows or should know constitute a force majeure. Such notice shall estimate the anticipated length of delay, including necessary demobilization and remobilization, its cause, measures taken or to be taken to minimize the delay, and an estimated time table for implementation of these measures. Respondent shall adopt all reasonable measures to avoid and minimize the delay. Failure to comply with the notice provision of this Section shall be grounds for U.S. EPA to deny Respondent an extension of time for performance.

3. If Respondent demonstrates to U.S. EPA that the delay has been or will be caused entirely by circumstances not reasonably foreseeable and beyond its reasonable control including its consultants and contractors, which could not have been overcome by due diligence, the time for performance for that element of the SOW shall be extended for a period equal to the delay resulting from such circumstances. This shall be accomplished through written amendment to this Consent Order pursuant to Section XXI. Such an extension does not alter the schedule for performance or completion of other tasks required by the SOW unless these are also specifically altered by amendment of the Consent Order or underlying plan. In the event that U.S. EPA and Respondent cannot agree that any delay or failure has been or will be caused entirely by circumstances not reasonably foreseeable and beyond the reasonable control of Respondent, which could not have been overcome by due diligence, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance Section XVIII, Dispute Resolution.

XVII. DELAY IN PERFORMANCE/STIPULATED PENALTIES

Unless excluded under Section XVI, Force Majeure and Excusable Delay, Respondent shall pay the sums set forth as stipulated penalties for failing to comply with the terms of this Consent Order:

1. For the first week that Respondent fails to submit a report or document according to schedules contained in this Consent Order, or otherwise fails to achieve the requirements of this Consent Order, it shall pay into the United States Treasury, the sum of $1,000.00 as stipulated penalties. For each subsequent week that Respondent fails to submit a report or document according to schedules contained in this Consent Order, it shall pay the sum of $2,000.00 per week as stipulated penalties. Checks should be addressed to the Treasurer of the United States of America and shall be forwarded to the U. S. Environmental Protection Agency, P.O. Box 70753, Chicago, Illinois 60673.

2. The stipulated penalties set forth in this Section do not preclude the U.S. EPA from electing to pursue any other injunctive or declaratory remedies or penalties which may be available to the U.S. EPA by reason or failure of the Respondent to comply with any of the requirements specified in paragraphs 1 and 3 of this Section.

3. If the Respondent fails to comply with any of the requirements contained in this Consent Order or the attached SOW, the U.S. EPA may elect to pursue any remedies or sanctions which may be available to the U.S. EPA, including without limitation, assessing statutory penalties pursuant to Section 3008(a) of RCRA, 42 U.S.C. §6928(a), or assessing stipulated penalties pursuant to paragraph 1 of this Section.

XVIII. DISPUTE RESOLUTION

1. The Project Managers shall, whenever possible, operate by consensus. The

Project Managers shall first attempt to resolve informally all matters concerning the work arising from a difference of opinion among the Project Managers.

2. In the event that there is an unresolved difference of opinion among the Project Managers with respect to any interpretation of this Consent Order, or to any actions at or related to the facility, including the manner in which the work has been, is being or will be done, the U.S. EPA, WDNR, and the Respondent will negotiate in good faith to resolve the difference of opinion. In the event that the difference of opinion is not resolved by good faith negotiations, any party may notify the other parties that a dispute has arisen. The dispute will be resolved in the following manner: the Respondent shall notify the U.S. EPA and WDNR in writing as to the specific disagreement within fourteen (14) days from the time the dispute arises. Within fourteen (14) days of receipt of such notification, if the U.S. EPA concurs with the position of the Respondent, the U.S. EPA will modify the Consent Order to include the necessary variances of the required work. If the U.S. EPA does not concur with the position of the Respondent the dispute shall be deemed resolved in favor of the U.S. EPA and written notice shall be provided to the Respondent.

XIX. RESERVATION OF RIGHTS

1. U.S. EPA and WDNR expressly reserve all rights and defenses that they may have, including the right both to disapprove of work performed by Respondent and to request that Respondent perform tasks in addition to those stated in the SOW as provided in this Consent Order and subject to the limitations herein. Subject to the provisions of this Consent Order, Respondent reserves all rights and defenses it may have.

2. Compliance by Respondent with the terms of this Consent Order shall not

relieve Respondent of its obligations to comply with RCRA or any other applicable State or federal law.

3. Except for the work consented to herein if Respondent is performing or has performed the work in a timely and satisfactory manner, U.S. EPA and WDNR reserve the right to take any enforcement action pursuant to CERCLA, RCRA, or any other available legal authority, including without limitation, the right to seek injunctive relief, including an action to compel implementation of corrective measures, cost recovery, monetary penalties, and punitive damages.

4. U.S. EPA and WDNR reserve the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and response/corrective actions as they deem necessary to protect public health or welfare or the environment. Absent an immediate hazard, U.S. EPA and/or WDNR will not perform work consented to herein if Respondent is performing said work in a timely and satisfactory manner. U.S. EPA may exercise its authority under CERCLA to undertake removal actions or remedial actions at any time. In any event, U.S. EPA reserves its right to seek reimbursement from Respondent for such additional costs incurred by the United States. Notwithstanding compliance with the terms of this Consent Order, Respondent is not released from liability, if any, for the costs of any response actions taken by U.S. EPA or WDNR.

5. Nothing in this Consent Order is intended by the parties to be an admission of fact or law by Respondent. In agreeing to the issuance of this Consent Order, Respondent does not admit the facts, determinations or allegations contained herein, and specifically does not admit any liability with respect to the facility.

XX. INDEMNIFICATION

1. The Respondent agrees to indemnify and save and hold harmless the United States

Government, the State of Wisconsin, their agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of, acts or omissions of the Respondent, its officers, employees, receivers, trustees, independent contractors, agents, or assigns, in carrying out the activities to this Consent Order. U.S. EPA and WDNR are not parties to any contract involving the Respondent at the facility.

2. Respondent, by this agreement, does not assume any liability arising from the acts or ommissions of U.S. EPA, WDNR, or their agencies, departments, agents or employees during the course of any activities conducted pursuant to this Consent Order.

XXI. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

1. The effective date of this Consent Order shall be seven (7) days from the date it is signed by the Regional Administrator of the U.S. EPA, Region V.

2. This Consent Order may be amended only by mutual agreement of U.S. EPA, WDNR and the Respondent. Any such amendments shall be in writing and shall have as the effective date, that date on which such amendments are signed by the U.S. EPA.

3. Any reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon written approval by the U.S. EPA and the WDNR, incorporated into this Consent Order by reference. In addition, any determination made by U.S. EPA pursuant to Section XVIII, Dispute Resolution, shall be incorporated into this Consent Order.

4. No informal advice, guidance, suggestions, or comments by the U.S. EPA or WDNR regarding reports, plans, specifications, schedules, and any other writing submitted by the Respondent will be construed as relieving the Respondent of its obligations to obtain such formal approval as may be required by this Consent Order.

XXII. TERMINATION AND SATISFACTION

The provisions of this Consent Order shall be deemed satisfied upon receipt by the Respondent of written notice from the U.S. EPA that the Respondent has demonstrated that all of the terms of this Consent Order, including any additional work which the U.S. EPA or WDNR may determine to be necessary pursuant to Section IX of this Consent Order, has been completed to the satisfaction of the U.S. EPA and WDNR. Specifically, corrective measures work will continue, at a minimum, until the objectives stated in Task 4 of the SOW are met. Upon such demonstration by the Respondent, said written notice shall not be unreasonably withheld or delayed.

XXIII. COVENANT NOT TO SUE

Upon successful completion of all requirements of this Consent Order, U.S. EPA and WDNR covenant not to sue or bring any civil, judicial or administrative action against Respondent for work satisfactorily performed. U.S. EPA, WDNR and Respondent intend that such covenant not to sue shall apply solely to liability for work satisfactorily performed pursuant to the terms of this Consent Order, and shall not be a release of any other claim which U.S. EPA or WDNR may have. Except with respect to work satisfactorily performed, this Consent Order does not release Respondent from responsibility or liability for any other response actions at the facility or any other responsibilities or liabilities under RCRA, CERCLA, or any other federal or State law; nor does this Consent Order release Respondent from any responsibility or liability it may have to maintain the facility in an environmentally safe manner. U.S. EPA is specifically without authority to waive any natural resource claims which the United States may have under Sections 107(a)(4), and (f) of CERCLA. It is not the purpose of this Consent Order nor the intention of the parties to release any other persons or entities not parties to this Consent Order from any claim or liabilities which they may have.

IT IS SO AGREED:

BY: _____ 8-19-87
Freeman Chemical Corporation Date
Respondent

TITLE: V-P. Mfg.

BY: _____ _____
Kathryn Curtner Date
Wisconsin Department of Natural
Resources

TITLE: _____

BY: _____ 10-9-87
Basil G. Constantelos, Director Date
Waste Management Division
U.S. EPA, Region V

IT BEING SO AGREED, IT IS HEREBY ORDERED THIS 14th DAY OF
October, 1987.

BY: _____
Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V

IT IS SO AGREED:

BY: _____ _____
Freeman Chemical Corporation — Date
Respondent

TITLE: _____

BY: Kathryn Durtner _____ 9/2/87
Kathryn Durtner — Date
Wisconsin Department of Natural
Resources

TITLE: Asst Administrator for Enforcement

BY: _____ _____
Basil G. Constantelos, Director — Date
Waste Management Division
U.S. EPA, Region V

IT BEING SO AGREED, IT IS HEREBY ORDERED THIS _____ DAY OF

_____, 198 .

BY: _____
Valdas V. Adamkus
Regional Administrator
U.S. EPA, Region V

ATTACHMENT I

Scope of Work

for Continuing Corrective Measure Activities

at Freeman Chemical Corporation

PURPOSE

The purpose of this SOW for continuing corrective measure activities at Respondent's facility is to document investigations and corrective measures which have been conducted, to conduct investigations, and to continue to operate corrective measures to remedy the release of and effects of releases of hazardous waste and hazardous waste constituents to the environment from Respondent's facility.

SCOPE

The corrective measures work consists of the following tasks:

Task 1 - Description of Past and Current Conditions
Task 2 - Schedules
Task 3 - Support Plans
Task 4 - Work to be Performed
Task 5 - Evaluation of Groundwater Collection System
Task 6 - Reports

TASK 1- DESCRIPTION OF PAST AND CURRENT CONDITIONS

Submit a Completion Report (Site Construction Documentation Report) including the items listed below. The report will describe past and current conditions at the facility, and include information pertinent to the contamination at the facility. The report will also describe corrective measures which have been or are being conducted at the facility. Work that has previously been conducted by the Respondent which meets any requirement of Task 1 may be submitted or referenced (if previously submitted) by the Respondent to satisfy that requirement.

A. Facility Background

Summarize the location, facility physiography, and hydrogeology. Describe the history of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities that have occurred and are occurring at the facility. This summary shall at a minimum include:

1. Map(s) depicting the items outlined below. All maps shall be of sufficient detail and accuracy to locate and report all current and future work performed at the site.

    a. General geographic location;

    b. Property lines, with the owners and land use of all adjacent property clearly indicated;

c. Topography, waterways, wetlands, floodplains, water features, and drainage patterns;

d. All tanks, buildings, paved areas, and wells;

e. All solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980;

f. All known past solid or hazardous waste treatment, storage and disposal areas regardless of whether they were active on November 19, 1980; and

g. All known past and present product and waste underground tanks or piping.

2. A history of solid and hazardous waste treatment, storage, and disposal activities at the facility.

3. A description of current production operations at the site.

B. Nature and Extent of Contamination

Summarize existing information on the nature and extent of contamination, including the following:

1. The sources of contamination, including the location of each source, and the quantity of raw materials, and solid and hazardous waste;

2. Details on known past product and waste spills including date, volume, nature, location and clean-up activities; and

3. A description of the degree and extent of contamination at the facility and in the vicinity of the facility, in the air, soil, sediments, surface water, and groundwater.

C. Behavior and Characteristics of Contaminants

Document the behavior of contaminants in the subsurface. Include the following factors for the odor, and the specific aromatic and chlorinated compounds:

1. Density and solubility of the contaminants in groundwater;

2. The transformation of contaminants with time and/or mixing with other contaminants and the geological media; and

3. Rate and direction of contaminant movement.

D. Investigation of Off-Site Property

1. Document the known nature and extent of contamination that exists and/or existed on adjacent property, including the Laubenstein property, church

property, and public and private property. Document corrective measures that have been taken to eliminate the contamination in these areas.

2. Document efforts that have been made to reach an agreement with Waters Instruments and other parties to investigate the nature and extent of contamination on the Laubenstein property.

E. Village of Saukville Water Supply

1. Document efforts that have been made to ensure that contamination from the facility is not affecting the quality or quantity of the public water supply for the Village of Saukville, and for any private wells being utilized for drinking water within the village limits.

2. Draw two or more flow charts designating the existing and projected future source and treatment of all groundwater and surface water used by the facility and by the Village of Saukville. Also diagram how the water used by the facility is disposed.

3. Describe the chemical source of the odor in the water from the dolomite wells. Document efforts that have been made to analytically determine the source of the odor.

F. Construction Documentation Corrective Measures

Document corrective measures which have been undertaken and are being undertaken at the facility to remedy the release of and effects of releases of hazardous waste and hazardous waste constituents to the environment from the facility. Verify and document all aspects of the installation of the equipment used for the corrective measures in accordance with the details of the May 12, 1986, letter from Richard O'Hara, WDNR to Russell Cerk, Freeman Chemical Corporation, outlined below.

1. A plan sheet or sheets, documenting the location of the Ranney collector trenches and manholes, groundwater monitoring wells, spot elevations of the base of the trenches, and location of pipes interconnecting the withdrawal systems. The plan sheet(s) should be based on a 1-inch to 100 foot scale (or less) topographic map with maximum 2-foot contour intervals and indicate property boundaries, survey grid and north arrow, homes, buildings, water supply wells, utility lines, man-made features, soil-boring and observation well locations, and other pertinent information.

2. A comprehensive narrative explaining how construction of the groundwater collection system was accomplished along with an analysis of data obtained from testing the collection system. This report should include an appendix containing all of the raw data from field and laboratory testing work.

3. Documentation of the corrective measures taken to eliminate potential sources of contamination, including: removal of unused/buried tanks, exhumation of the "dry well", reconstruction of floor sumps, removal and reconstruction of the tank farm, surface water control measures, construction of the enclosed tank unloading facility, and location and removal of the old farm well.

4. A series of 35 mm slides or color prints documenting all major aspects of the corrective measures program.

G. Objectives and Evaluation of Corrective Measures

Describe the objectives for the corrective measures. Also evaluate each of the corrective measures that are being implemented at the facility in the following areas:

1. Useful life. Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Corrective measures shall be evaluated in terms of the projected service lives of its component technologies.

2. Reliability. Realiability is a way of measuring the risk and effect of failure. Evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies has been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measures have the flexibility to deal with uncontrollable changes at the facility.

3. Safety. This evaluation shall include threats to the safety of the nearby community and environment as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

TASK 2- SCHEDULES

Develop a project schedule which identifies the initiation and completion times of corrective measures being performed at the facility. Also, develop a schedule for the submittal of work to be conducted under Task 4 of this SOW.

TASK 3- SUPPORT PLANS

Develop and submit the following plans for investigations and for conducting corrective measures at the facility.

A. Sampling Plan

Prepare a sampling plan for the investigation of contamination in the environment and for evaluating the effectiveness of the groundwater collection system. The plan shall include the objectives of sampling and other items stated below. The plan shall include sampling the groundwater for the hazardous waste constituents listed in the proposed Appendix IX of 40 CFR 262.

1. The objectives of the sampling plan is to:

   a. Provide specific guidance for all field work;

b. Provide a mechanism for planning and approving sampling activities;

c. Ensure that sampling activities are limited to those that are necessary and sufficient;

d. Provide a common point of reference for all parties to ensure comparability and compatibility between sampling activities performed; and

e. Provide information on work limitations, list authorized personnel, safety precautions, and detail decontamination procedures and emergency information.

2. The sampling plan should include the following additional items:

a. Investigation and evaluation objectives;

b. Parameters to be sampled for;

c. Sampling locations;

d. Justification for sample type and location;

e. Collection methods;

f. Sample number and frequencies;

g. Analytical procedures, including methods verification and standard operating procedures;

h. Quality assurance/quality control;

i. Operational plan and schedule;

j. Monitoring well and piezometer construction materials and techniques; and

k. Safety requirements.

B. Data Management Plan

Develop and initiate a data management plan to document and track investigation data and results. This plan should identify and set up laboratory and data documentation materials and procedures, and project-related progress and documents. Also identify the State and federal bureaus that must be notified of the designated activities that will be occurring on-site. The data management plan shall address the following:

1. The data record shall include:

a. Unique sample or field measurement code;

b. Sampling or field measurement location and sample or measurement type;

c. Sampling or field measurement raw data;

d. Laboratory analysis ID number;

e. Property or component measured; and

f. Result of analyses (e.g. concentration).

2. The following data shall be presented in tabular displays:

a. Unsorted (raw) data;

b. Sampling results for each medium;

c. Data reduction for statistical analysis;

d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and

e. Summary data.

3. The following data shall be presented in graphical formats:

a. Sampling location and sampling grid;

b. Boundaries of sampling area, and areas where more data are required;

c. Levels of contamination at each sampling location;

d. Geographical extent of contamination;

e. Contamination levels, averages, and maxima;

f. Changes in concentration in relation to distance from the source, time, depth or other parameters;

g. Features affecting intramedia transport; and

h. Potential receptors.

C. Community Relations Plan

Prepare a plan, based on on-site discussions, for the dissemination of information to the public regarding investigation and corrective measures work, including but not limited to, groundwater sampling results. Opportunities for comment and input by citizens, Village of Saukville officials, and community groups must also be identified and incorporated into the plan.

D. Operation and Maintenance Plan for Corrective Measures

Prepare an Operation and Maintenance Plan to cover both implementation and long term maintenance of the corrective measures. The plan shall be composed of the following elements:

1. Description of normal operation and maintenance (O&M)

   a. Description of tasks for operation;

   b. Description of tasks for maintenance, including but not limited to maintenance of surface pavement for soil protection;

   c. Description of prescribed treatment or operation conditions; and

   d. Schedule showing frequency of each O&M task.

2. Description of potential operating problems

   a. Description and analysis of potential operation problems;

   b. Sources of information regarding problems; and

   c. Common and/or anticipated remedies.

3. Description of alternate O&M

   a. Should systems fail, alternate procedures to prevent undue hazards must be available. In particular, discuss how cooling water and municipal drinking water supplies will be protected in the event of any system failure.

   b. Analysis of vulnerability and additional resource requirements

4. Safety plan

   a. Description of precautions for site personnel; and

   b. Safety required in event of systems failure.

5. Description of equipment

   a. Equipment identification;

   b. Maintenance of site equipment; and

   c. Replacement schedule for equipment and installed components.

6. Records and reporting mechanisms required

   a. Daily operating logs;

b. Laboratory records;

c. Records for operating costs;

d. Mechanism for reporting emergencies;

e. Personnel and maintenance records; and

f. Quarterly reporting.

TASK 4- WORK TO BE PERFORMED

Work to be performed shall follow the schedule established in Task 2 and the support plans established in Task 3.

A. Village of Saukville Water Supply

Develop and implement (with U.S. EPA and WDNR approval), a plan to protect the quantity and quality of potable water available to the Village of Saukville in the future if contamination from the facility limits the quantity and quality of available potable water. Also, develop and implement, if possible and economically feasible, a plan to eliminate the odor in the water from dolomite wells.

B. Exposure Information (Potential Receptors)

Submit a report, including the information identified below, describing the hazards associated with contamination at the facility and the human and environmental systems that are potential receptors of the contamination.

1. Provide a list of contaminants from the facility determined to be present in the environment. Document the following toxicological properties for each contaminant:

   a. Metabolism;

   b. Acute, subacute, chronic toxicity;

   c. Carcinogenicity;

   d. Mutagencity;

   e. Teratogenicity/reproductive effects;

   f. Epidemiological evidence; and

   g. Other health effects, and aquatic species toxicity.

2. Provide data on the type and extent of human contact with contaminated media, including:

   a. Recreational, industrial, or agricultural uses of surface water draining the site;

b. Location and type of groundwater users;

c. A description of the ecology overlying and adjacent to the facility; and

d. A description of any endangered or threatened species on or near the facility.

C. Groundwater Protection Standards

Prepare and provide information to support the U.S. EPA's and WDNR's selection of groundwater protection standards (acceptable "clean" level of contaminants in the groundwater) for all of the Appendix IX constituents found in the groundwater. The groundwater protection standards will consist of one of the following:

1. The respective value (MCL) given in Table 1 of 40 CFR 264.94, if the background level of the constituent is below that given in Table 1;

2. The background level of that constituent in the groundwater;

3. A U.S. EPA approved Alternate Concentration Limit (ACL); or

4. The value given in Wisconsin Administrative Rule NR 140.

D. Soil Protection Standards

Excavated soil from the site is subject to treatment and restricted use as specified in an August 8, 1986, and June 10, 1987, letter to Russell Cerk, Freeman Chemical Corporation from Richard O'Hara, WDNR.

TASK 5- EVALUATION OF GROUNDWATER COLLECTION SYSTEM

Evaluate the effectiveness of the groundwater collection system to perform its intended function by conducting groundwater monitoring for volatile organic compounds.

A. Groundwater Monitoring

Until such time as the groundwater monitoring system submitted under Task 3 is approved, groundwater monitoring will be consistent with an October 21, 1986, letter to Russell Cerk, Freeman Chemical Corporation, from Richard O'Hara, WDNR, and include any subsequent approved changes.

B. Annual Evaluation

Annually, make an evaluation, based primarily on the analytical data and water flow rates, of the effectiveness of the groundwater collection systems. The evaluation shall be submitted in the form of an annual report, including source and volume of groundwater collected and treated during the year, and a summary of water quality from monitoring wells; collection devices, and the treatment system.

TASK 6 - REPORTS

Listed below is a schedule for the submittal of reports and information required by the SOW and Section VIII of this Consent Order.

Submission	Time
Completion Report (Task 1)	30 days after the effective date of this Consent Order
Schedules (Task 2)	30 days after the effective date of this Consent Order
Support Plans (Task 3)	60 days after the effective date of this Consent Order
Work conducted pursuant to Task 4	as determined in Task 2
Groundwater Monitoring Data (Task 5A) and Progress Reports	quarterly
Evaluation of Corrective Measures (Task 5B)	annually