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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-6669

Mr. Briand C. Wu, Deputy Project Officer
Emergency Response Section
Western Response Unit
U.S. Environmental Protection Agency
11th Floor
230 South Dearborn St.
Chicago, Illinois 60604

August 12, 1986

TAT-05-F-01034

Reference: Oconomowoc Electroplating Company
Ashippun, Wisconsin
TDD# 5-8605-21

Dear Mr. Wu:

On May 28, 1986, the Technical Assistance Team (TAT) was tasked by the U.S. Environmental Protection Agency (U.S. EPA) to conduct a site assessment of the Oconomowoc Electroplating Company, Inc. (OEC), located in Ashippun, Dodge County, Wisconsin. The directive required the TAT to evaluate the impact of OEC's discharges on the adjacent wetlands by collecting and analyzing sediment samples from the wetland areas. This letter details the TAT's recommendations pursuant to this task. The TAT's findings of this inspection and sampling are detailed in the attached site assessment report. All information pertinent to the past activities at this site was obtained from the Wisconsin Department of Natural Resources (WDNR) files and the U.S. EPA.

Due to ongoing enforcement activities associated with the facility, no inspection was made of the interior of OEC. Therefore, the site assessment and sampling activities were limited to the OEC's effluent discharge area and the potentially contaminated wetlands associated with the Davy Creek south of the facility.

Of major concern is the area surrounding the OEC's effluent discharge point where preliminary analytical results of sediments have indicated up to 38,700 ppm chromium, 33,100 ppm nickel, 73,600 ppm zinc, and 1820 ppm cyanide. Due to the unrestricted access to the wetlands, and the proximity of this area to residences and a recreational area, a direct contact threat exists. In addition to these threats, the presence of such high levels of metals and cyanide in the sediments can be highly toxic to fish and other wildlife posing a potential contamination threat to the food chain. Also of concern is the threat of potential releases of acid by OEC coming in contact with cyanide in the sediments resulting in the release of hydrogen cyanide gas.

Due to the threats to both human health and the environment, the following recommendations are proposed based on the site inspection and the preliminary sample analytical results:

- A systematic sampling survey be initiated in the wetland area adjacent to OEC, both up and down stream of Davy Creek, to evaluate the extent of contamination.
- Dredging and/or relocation of Davy Creek be postponed until the extent of contamination study is complete.
- RCRA authorities be advised of the present sample analytical results and corrective measures be taken to prevent further releases from the OEC into the wetland area.

The limited sediment sampling by the TAT served only to verify the presence of heavy metal and cyanide contamination in the area concerned. This should in no way imply that the contamination is confined to the OEC's discharge area and along the Davy Creek Channel. In order to define and characterize the extent of contamination in the wetland areas, a detailed systematic sampling program should be implemented. This sampling program should be conducted in the early fall as the water level in the wetlands may be lower at that time and will alleviate the access difficulties caused by the marshy conditions, high levels of water, and thick grass. Sampling should incorporate locations upstream of Davy Creek from the OEC facility as a sample

retrieved from the upstream area was found to contain high concentrations of metals. Bottom sediments from the Rock River, downstream of the Davy Creek junction should also be analyzed in order to determine if the contaminants have been flushed into the Rock River. Due to the distinctively high concentrations of metals and cyanide detected in samples collected close to the OEC's effluent discharge area, sampling in this area should be conducted at relatively closer intervals. This would help in demarcating the severely contaminated zones for potential excavation of sediments and also reveal any contaminant dispersion trends towards the surrounding wetlands. It is also recommended that deep sediment samples be collected at predetermined locations in order to characterize the vertical extent of contamination in the sediments. The chemical analysis of sediment samples may be restricted to selected elements as guided by the preliminary sample analytical results. However, the analysis should characterize the forms of chromium and cyanide as free or complex forms to determine their reactivity.

Due to the heavy siltation in the Davy Creek over the past several years, its flow into the Rock River has been severely restricted. This has resulted in the flooding of several local home basements. Furthermore, the impounded water has flooded adjacent agricultural lands. To alleviate this problem, the Dodge County Drainage Board proposed in 1983 to dredge and/or relocate the Davy Creek Channel. The U.S. EPA expressed concern regarding the possible release of contaminated water and sediment downstream into the Rock River. The recent preliminary sampling by the TAT documents the presence of contaminants covering potentially large areas. As such, it is recommended that any dredging activities be postponed until the extent-of-contamination study is complete. If and when dredging activities are implemented, careful consideration should be given to the gradual release of water into the Rock River. As the water is released, it should be monitored for possible contamination.

Depending on the results of the extent-of-contamination study, it may be necessary to excavate the severely contaminated areas of the wetlands in order to prevent the migration of heavy metals and cyanide into the Rock River. Finally, it is recommended that RCRA enforcement authorities be advised of the present contaminated condition of the wetlands in order to take necessary actions to prevent further releases from the OEC facility. In

addition, local and state authorities should be advised to inspect the interior of the OEC facility in order to ensure that operations are conducted in a manner that would not pose any further threats to human health or the environment.

If you have any questions or need additional information, please feel free to contact us.

Very truly yours,

ROY F. WESTON, INC.

S. Babusukumar
Environmental Scientist

Scott D. Springer
Technical Assistance Team
Leader, Region V

SB/sg

Enclosures

SITE ASSESSMENT

FOR

OCONOMOWOC ELECTROPLATING COMPANY
ASHIPPUN, WISCONSIN

Prepared For:

U.S. Environmental Protection Agency
Region V
230 S. Dearborn Street
Chicago, Illinos

CONTRACT NO. 68-95-0017

TAT-05-F-01055

TDD# 5-8605-21

Prepared by:

WESTON-SPER
Technical Assistance Team
Region V

August 1986

1.0 INTRODUCTION

On May 28, 1986, the Technical Assistance Team (TAT) was tasked by the U.S. Environmental Protection Agency (U.S. EPA) to conduct a site assessment of the Oconomowoc Electroplating Company, Inc. (OEC), located in the town of Ashippun, Dodge County, Wisconsin (Figure 1). The purpose of this site assessment was to evaluate the impact of discharges from the OEC facility on the nearby Davy Creek and its associated wetlands by collecting and analyzing sediment samples throughout the wetland area. As an initial phase of this investigation, seven sediment samples were collected from the wetlands and analyzed for Hazardous Substance List (HSL) metals as well as cyanide.

The following report details TAT's findings pursuant to this task. Also included in this report is a brief review of the history and prior investigations at this site as gathered from the Wisconsin Department of Natural Resources (WDNR) files, and discussion with representatives of the WDNR.

2.0 SITE HISTORY

OEC is an electroplating facility, located at W2573 Oak Street, Ashippun, Wisconsin (Figures 1 and 2). The facility, which has been in operation since 1960, is presently active in plating operations including cadmium, chromium, copper, nickel, tin, and zinc.

In 1972, OEC constructed two, unlined, settling ponds to supplement their waste water treatment system. Both ponds, which measure 20 feet by 40 feet and 8 feet deep, have accumulated large volumes of sludges. In the past, untreated plating sludges have overflowed the settling ponds into the adjacent wetlands, causing plating sludges to accumulate in Davy Creek and its associated wetlands.

3.0 PRIOR SITE INVESTIGATIONS

3.1 State and Local Response

No regulatory inspection reports were available for the OEC facility on a local, state, or federal level prior to 1972. Since then, numerous inspections of the site by WDNR personnel have confirmed that OEC has been continuously in violation of regulatory compliance.

In August 1978, OEC was denied a Wisconsin Pollutant Discharge Elimination System (WPDES) permit by the WDNR for the following reasons: 1) failure to meet the compliance schedule deadline to improve their waste water treatment system; 2) failure to meet effluent limitations; and, 3) failure to monitor the effluent and analyze effluent samples in accordance to the methods specified in their permit. OEC's existing waste water treatment system was determined to be inadequate to ensure that effluent limitations would be achieved at all times. Furthermore, it was

determined that the OEC's facilities for sample analysis were inadequate. Thus, the WDNR felt that OEC did not have the ability to assure compliance with the terms stipulated in the permit.

In 1979, the effects of the waste discharges by OEC was investigated by the Solid Waste Management Division of the WDNR. Analytical results of a sediment sampling survey (conducted by the WDNR in 1979) of the wetlands adjacent to the facility confirmed the presence of high concentrations of heavy metals specifically up to 19,000 ppm chromium, 15,000 ppm nickel, 14,000 ppm copper and 4,400 ppm cadmium. Analysis of soils from the nearby wetlands also showed comparable concentrations of metals.

After a complete investigation, the State of Wisconsin filed suit against OEC in 1981 for alleged violations of the discharge permit. Although the guilty decision against OEC was entered in the Dane County Circuit Court in March 1981, OEC continued operating its discharge system. Subsequently, in April 1982, the state moved for remedial sanctions against OEC for contempt of court. After a hearing on May 10, 1982, OEC was ordered to cease discharges.

In 1983, the Dodge County Drainage Board proposed to dredge and rechannelize a 5,000 foot stretch of the Davy Creek near the OEC facility in order to alleviate the flooding problem created by continuous siltation of the creek over the years. However, the U.S. EPA and the U.S. Army Corps of Engineers disapproved the dredging proposal because they believed that dredging would increase the migration of contaminated sediments into the Rock River.

The WDNR confirmed the spread of contamination after analysis of samples obtained in 1984 from the plating wastes within the OEC facility revealed the presence of nickel, copper, cadmium, tin and cyanide. The WDNR also documented seepage of plating wastes through concrete waste troughs located within the OEC facility. Furthermore, stored drummed wastes have also been observed leaking onto the ground near the plant walls, possibly contaminating the underlying shallow ground water. The WDNR's report on this sampling was not available at this time.

Past analysis of ground water sampling efforts by the WDNR, in residential and two monitoring wells within the vicinity of OEC, have indicated elevated levels of metals and volatile organic compounds (VOCs). Samples from residential wells showed high concentrations of cadmium, zinc, nickel, whereas those from the monitoring wells located on the OEC site revealed the presence of 1,1-dichloroethane, 1,1,1-trichloroethane, perchloroethylene and trichloroethylene. Analysis for subsequent ground water samples of the same wells was carried out by WDNR in April 1986 and is not available at the time of this report.

3.2 Federal Response

In May of 1983, the Field Investigative Team (FIT) of the U.S. EPA performed a preliminary assessment of the site. As a result of this assessment, the site received a Hazard Ranking Score (HRS) of 31.86 and was placed on the National Priority List (NPL).

In 1985, a Remedial Investigation/Feasibility Study (RI/FS) was proposed by the U.S. EPA. However, due to the interim status of the Superfund re-authorization, the RI/FS could not be implemented.

On June 12, 1986, TAT members S. Babusukumar and J. Markarian visited the WDNR offices in Madison, Wisconsin, and discussed the status of the OEC site with Mr. Dennis F. Kugle of the Hazardous Waste Management Division, and Mr. Robert Weber of the WDNR's waste water unit. During this meeting, the TAT was briefed of the past and present activities of WDNR at this site. Mr. Weber indicated to the TAT that during a sampling effort in 1979, he observed what he believed to be thin layers of heavy metal sludges overlying soils in locations close to the OEC's effluent discharge area.

4.0 SITE ASSESSMENT

On June 12 and 13, 1986, TAT members Babusukumar and Markarian performed a site assessment of the area during which sediment samples were collected from the wetlands along Davy Creek adjacent to the OEC facility.

The facility is bordered to the north, west, and south by Oak Street, Eva Street, and Elm Street, respectively, and occupies approximately a five-acre tract of land in a semi-residential area of the town of Ashippun (Figure 2). Located immediately east of the facility is a "thermogas" distributor. As shown in Figure 2, Davy Creek flows about 400 feet south of the OEC towards the Rock River. The Rock River, which is located approximately one mile southwest of OEC, flows south.

Upon arrival at the site, the TAT inspected OEC's effluent discharge area which is located immediately south of Elm Street. The discharge pipe runs underneath Elm Street, enters the wetlands, and extends to the perimeter of the Davy Creek. At the time of this inspection, a continuous flow of clear water was observed from the effluent discharge pipe. The area around the OEC's effluent discharge point appeared to contain several patches of stressed vegetation, each area encompassing approximately 100 square yards. Thin veneers of yellow, green, and pink colored sediment were also observed in these patches.

Presently, access is unrestricted to the wetlands from all surrounding areas. This is of specific concern near the OEC's effluent discharge point, where residences border the wetlands

west of the OEC facility. Furthermore, two caretakers of the Farmer's Park area, located about 1000 feet west of the OEC facility along the wetlands have been observed walking into the wetlands frequently to recover unbroken clay pigeons from trap and skeet shooting activities.

After the inspection of the discharge area, the TAT proceeded to investigate both up and down stream of Davy Creek near the OEC facility. It was noted that the entire area from the intersection of Main Street to the Rock River consisted of water over three feet deep and contained low-lying wetlands covered with tall, grassy vegetation. No main channel for Davy Creek was discernible due to the flooding and vegetative cover from the Main Street intersection to its confluence with Rock River. It should be noted that the TAT's inspection of the wetland area was performed on a limited basis because movement was inhibited by three feet of water and dense vegetation measuring over six feet high.

The interior of the facility was not inspected due to the ongoing enforcement actions against OEC.

5.0 SAMPLING AND ANALYTICAL RESULTS

During the site investigation, the TAT conducted a preliminary sediment sampling survey in the wetlands in order to assess and initially characterize the extent of contamination caused by the OEC facility's discharge. High water levels and decomposed vegetative cover hindered sediment sampling deeper than six inches. Due to the abundance and presence of surface humus, two eight-ounce jars were filled at each sample location to provide a sufficient quantity of material for analysis. Seven sediment samples were collected during this sampling effort and subsequently analyzed for HSL metals and cyanide under a TAT Special Project by Aqualab, located in Bartlett, Illinois. The sample locations are indicated in Figure 2 and a brief description of each location is presented in Table 1. The analytical results of these samples, listed in Table 2, indicate high concentrations of metals in all the samples collected and high cyanide concentrations in three of the seven samples. The highest concentrations of metals and cyanide were detected in samples from the area between OEC's discharge point and the adjacent stretch of Davy Creek. Of particular concern are the concentrations of chromium, copper, nickel, zinc, and cyanide with values ranging up to 38,700 ppm, 6,560 ppm, 33,100 ppm, 73,600 ppm, and 1820 ppm, respectively. These concentrations are considerably higher than normal background levels. The cyanide concentrations were higher only in samples collected from locations 1, 2, and 3. All samples from the remaining locations indicated cyanide concentrations of less than 1 ppm.

The sample taken from location 4 near the confluence of Davy Creek and the Rock River contained comparatively lower but still appreciable concentrations of metals than the other locations. Surprisingly, analysis of the sample from location 6 showed high

concentrations of metals (Table 2). It should be pointed out that sample location 6 is located upstream of the OEC discharge area. This indicates that migration of contaminants were not restricted to Davy Creek downstream of the OEC discharge. The flooding conditions may have influenced the migration of contaminants in different directions within the wetlands.

6.0 THREATS TO HUMAN HEALTH AND ENVIRONMENT

The concentrations of metal and cyanide contaminants present in the associated wetlands of Davy Creek, near the OEC facility as revealed by the analytical results of seven sediment samples are found to present substantial and imminent threats to both human health and the environment.

Due to the unrestricted access of the discharge area, a direct contact threat exists particularly near the OEC's effluent discharge point. Neighboring adults, children, and domestic animals can easily come in contact with the highly toxic levels of heavy metals and cyanides present in these wetlands. Also, the close proximity of the farmers recreational area substantiates this threat. Direct exposure to high concentrations of metals through respiration or ingestion can result in a variety of toxic effect to humans. As seen from the sediment analytical results, zinc, copper, nickel, and chromium show very high concentrations in the wetlands adjacent to OEC. All four of these metals are known to cause serious damage to the respiratory system and lungs in humans. Additionally, overexposure to copper can cause liver and kidney disorders. Nickel can cause cancer of the lungs, pneumonitis, and allergic asthma. Excess chromium in the body can cause histologic fibrosis of the lungs.

Analytical results of samples taken near the OEC's discharge point have shown cyanide concentrations up to 1820 ppm. Even though the reactivity of the form of cyanide present is not yet known, a threat of potential release of hydrogen cyanide gas exists. In the event that a large quantity of an acidic substance is released by the facility in this area, the probability of it reacting with the cyanide contaminants is high. If this were to occur, effects to human and animals in the immediate area may include nausea, skin irritation, respiratory tract damage, and possibly, even death.

Furthermore, continued discharge of plating waste into the wetlands around Davy Creek can potentially impact not only aquatic life and terrestrial life, but also adversely affect the vegetation in and around the wetland area. As a result, there is an increased chance of contamination entering into the food chain.

In addition, due to the shallow ground water table in the area, and the heavy usage of ground water as drinking water supply, a substantial threat is present to the residential water supplies. All residents within three miles radius of OEC use ground water for their needs. Limited contamination of the surrounding ground water has already been documented by the WDNR from monitoring

wells and at residential wells in close proximity to the OEC facility and as a result, many water supplies could be affected.

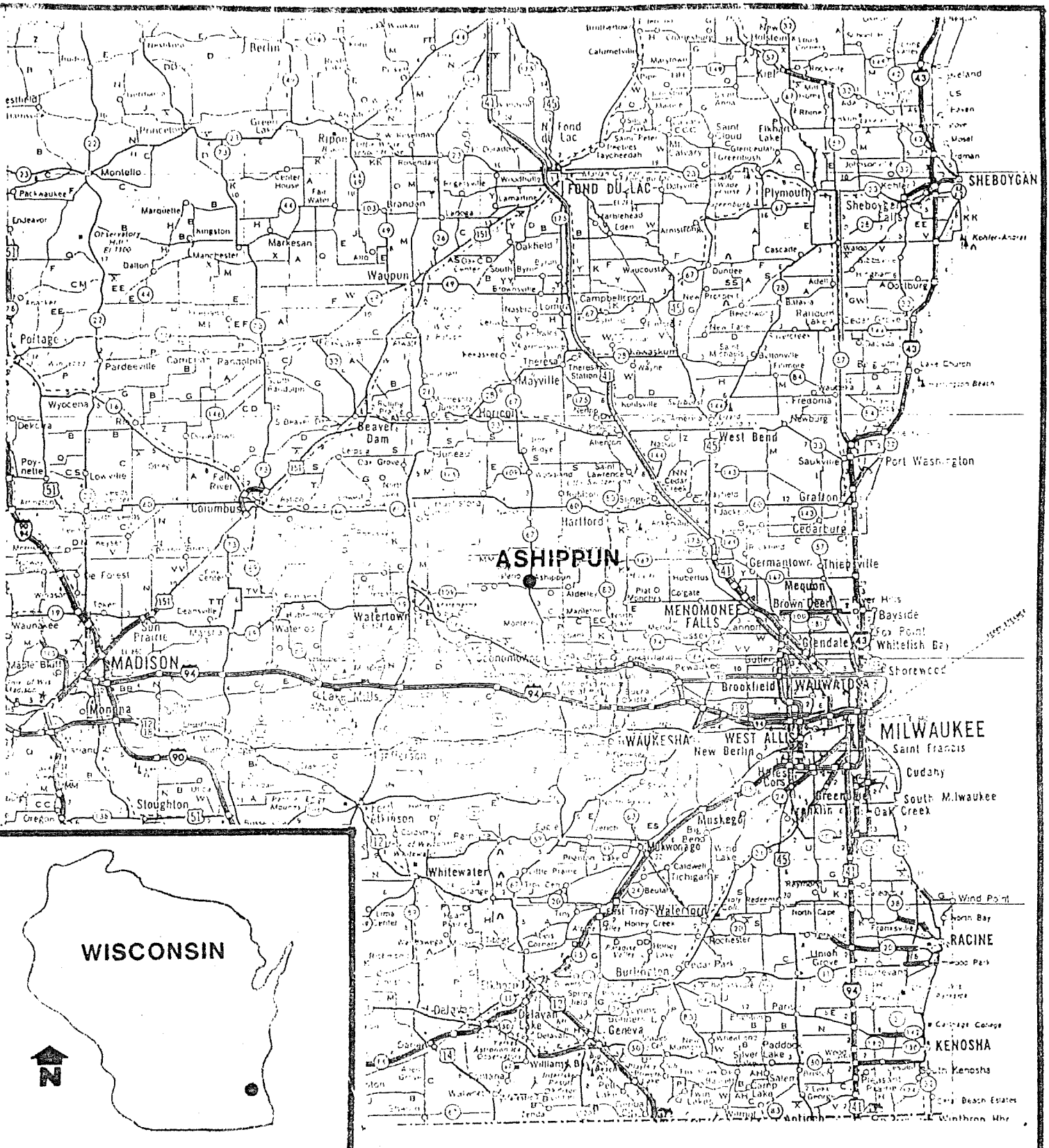

FIGURE 1

LOCATION MAP

SCALE: 1 INCH= 12.5 MI

ROY F WESTON, INC

WESTON

ENVIRONMENTAL CONSULTANTS DESIGNERS

DRAWN	DATE	DES. ENG.	DATE	TDD #
S. Babus-Kumar	07/06/86			5-8605-21
CHECKED	5/5/86	APPROVED		5223
O'Rourke				

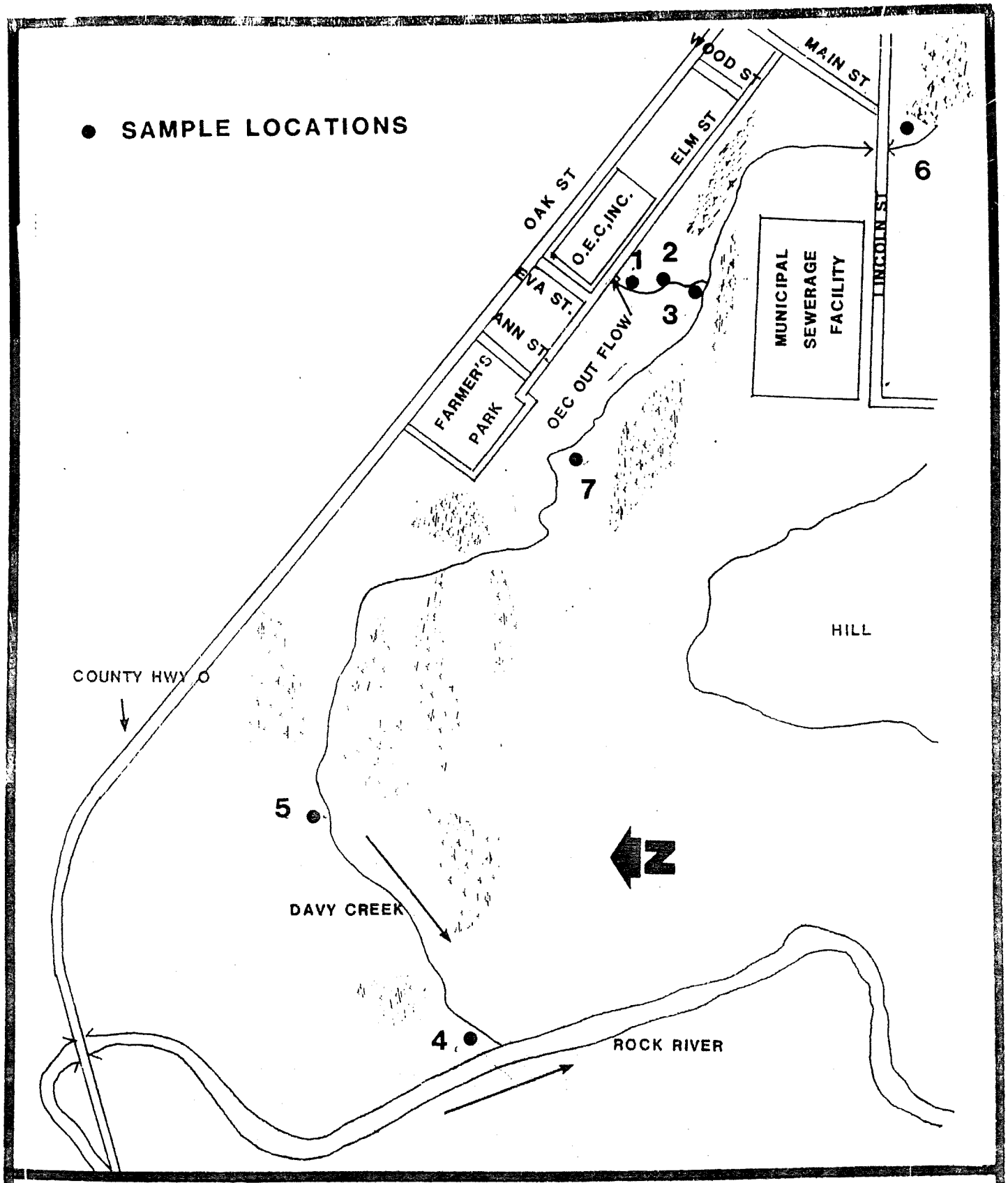

FIGURE 2: SITE MAP AND SAMPLE LOCATIONS

NOT TO SCALE

OCONOMOWOC ELECTROPLATING COMPANY INC.

ASHIPPUN, WISCONSIN

08/01/86

WESTON DESIGNERS CONSULTANTS

TABLE 1

TAT SAMPLE LOCATIONS
OCONOMOWOC ELECTROPLATING COMPANY
ASHIPPUN, WISCONSIN
JUNE 12-13, 1986

Location/Sample #	Location
Location 1 (S-83)	30 feet off Elm Street, along OEC discharge point
Location 2 (S-84)	50 feet off Elm Street, along OEC discharge point (area contains stressed vegetation)
Location 3 (S-85)	OEC drainage confluence with Davy Creek
Location 4 (S-86)	Davy Creek's confluence with the Rock River
Location 5 (S-87)	1500 feet upstream along Davy Creek from Rock River
Location 6 (S-88)	Wetlands adjacent to intersection of Main and Lincoln Streets
Location 7 (S-89)	Wetlands adjacent to discharge of sewage plant into Davy Creek

TABLE 2

ANALYTICAL RESULTS OF TAT SAMPLING
OCONOMOWOC ELECTROPLATING WETLANDS SAMPLING PROGRAM
ASHIPPUN, WISCONSIN
June, 1986
(Values are in Parts Per Million)

Element	Typical Soil[1] Range	Typical Soil[1] Average	#1 S83	#2 S84	#3 S85	#4 S86	#5 S87	#6 S88	#7 S89
			Wetlands Sediment Samples						
Antimony	2-10	--	38.80	43.40	75.80	26.30	<1.00	8.38	23.30
Arsenic	1-50	10.00	0.20	0.50	2.60	0.50	1.10	7.10	8.10
Beryllium	0.1-40	6.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00
Cadmium	0.01-0.7	0.06	149.00	593.00	1690.00	35.80	102.00	1.10	45.20
Chromium	1-1000	100.00	1560.00	38700.00	15300.00	64.30	306.00	13.20	16.30
Copper	2-100	30.00	946.00	1510.00	6560.00	51.90	82.40	14.10	41.10
Lead	2-200	10.00	92.70	301.00	372.00	29.50	<1.00	20.30	382.00
Mercury	0.01-0.3	0.03	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02
Nickel	5-500	100.00	993.00	33100.00	16600.00	189.00	256.00	17.90	465.00
Selenium	0.1-2.0	0.50	0.50	<0.10	<0.50	<0.10	0.30	0.60	<0.50
Silver	0.01-5.0	0.05	7.57	7.55	25.80	1.05	0.86	0.43	<0.50
Thallium	--	5.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00
Zinc	10-300	50.00	12400.00	16300.00	73600.00	179.00	236.00	34.90	174.00
Cyanide	--	--	90.00	300.00	1820.00	<1.00	<1.00	<1.00	<3.00

Notes:

[1]Source: EPA, 1983
-- = no data

Values reported on a dry weight basis.

NOV 19 1987

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Southern District Headquarters
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711-5397

November 18, 1987

4190
Notice of Violation

Mr. Edward Marshall
Oconomowoc Electroplating Company, Inc.
W2573 Oak Street
Ashippun, WI 53003

Dear Mr. Marshall:

There are two additional areas of state wastewater regulations (beyond those that are the involved in case 86-CV-640) that Oconomowoc Electroplating Company, Inc. (OECI) appears to have violated and is apparently still violating. These areas are:

1. The WPDES permit compliance schedule that required OECI to upgrade its effluent monitoring system; and

2. The WPDES permit discharges effluent limitations.

3. Wastewater sampling requirements.

Concerning No. 1, OECI hasn't yet completed submitting plans and specifications (required December 31, 1986) for an upgraded wastewater monitoring system. Accordingly, OECI hasn't constructed (required March 31, 1987) the system and put it into operation (required April 30, 1987).

Concerning No. #2, OECI's discharge monitoring reports (DMRs) for the period of June 10, 1985, (permit issuance date) through September 30, 1987, (the most recent DMR) show OECI violated 56 daily limitations (maximum or minimum) out of 600 samples reported on 7 pollutants (cadmium, hexavalent chromium, copper, nickel, zinc, suspended solids and pH) and 82 monthly averages out of the 139 averages available (during the period) on 9 pollutants (cadmium, hexavalent chromium, copper, nickel, silver, zinc, cyanide, oil and grease, and suspended solids). For the more recent period of January 1, 1987, through September 30, 1987, OECI's DMRs show OECI violated 4 daily maximum limitations out of 19 samples reported on 2 pollutants (copper and zinc) and 14 monthly averages out of the 22 averages available on 3 pollutants (cadmium, copper and zinc).

Concerning No. 3, OECI doesn't collect, preserve, or analyze effluent samples according to requirements of its WPDES permit and NR 219, Wis. Adm. Code. OECI doesn't collect and hold the metal sample(s) in a closed, refrigerated container and doesn't ensure that the hexavalent chromium sample is analyzed within 24 hours of collection.

OECI is risking further Department enforcement actions because of these apparent violations. You can reduce that risk by taking measures to resolve these matters. I ask that you send me a written reply within 7 days that explains what OECI has done or is doing to resolve these matters. Please contact me if you have questions.

Sincerely,

Ronald Curtis

Ronald F. Curtis
District Enforcement Specialist

RFC:cmw
cc: Dave Brodzinski - Horicon Area Office
Bob Weber - Southern District
Mike Hammers - WW/2
Steve Wickland - Department of Justice
Scott Hansen, Reinhart Law Firm, 111 East Wisconsin Avenue, Suite 1800, Milwaukee, WI 53202

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

File Ref: 4430

July 23, 1987

Craig A. Bartelt
Oconomowoc Electroplating Company, Inc.
W2573 Oak Street
Ashippun, WI 53005

SUBJECT: Oconomowoc Electroplating Company, Inc.
WID 006100275
Surface Impoundment Closure plan
Incompleteness Letter

Dear Mr. Bartelt

We have completed our preliminary review of the revised surface impoundment closure plan for Oconomowoc Electroplating Company, Inc. (OECI) received May 19, 1987. The revised plan contains most of the items requested in the previous incompleteness letter, dated February 17, 1987. However, the following items still need to be addressed before we can complete our review.

A major obstacle to obtaining a closure plan approval is the lack of review fees. The Department cannot approve the plan without the $1500 fee (s. NR 181.55(5)(i) Wis. Adm. Code).

There also remain a number of omissions in the closure plan. These omissions must be addressed before the Department can approve the closure plan. Remaining omissions are :

1) OECI must prepare a long-term plan in accordance with s. NR 181.42(9) and NR 181.44(14) Wis. Adm. Code. The plan must describe the activities and frequency required to maintain and monitor the integrity of the cover and provide a cost estimate for long-term care.

contingency

2) OECI must provide proof of financial responsibility as required by s. NR 181.42(10) Wis. Adm. Code.

3) Unless OECI is able to demonstrate that all hazardous waste, contaminated soil and contaminated groundwater have been removed, OECI must meet the requirements of s. NR181.42(9) and s. NR 181.44(14) Wis. Adm. Code. Implementation of these requirements should be addressed in a contingency section of the plan.

4) The closure plan cannot be approved until the s. NR 181.49 Wis. Adm. Code groundwater monitoring plan is prepared and submitted for Department approval.

The closure plan states that OECI will not be involved in any of the activities affecting off-site contamination. The current RI/FS is being handled through Superfund. Though you are not currently involved in this activity, you should be aware that Superfund generally seeks cost recovery for incurred expenses.

REXNORD ENVIRONMENTAL MANAGEMENT

A Unit of Rexnord Technologies

Rexnord Environmental Management
5103 West Beloit Road, Milwaukee, WI 53214
(414) 643-2668

SURFACE IMPOUNDMENT CLOSURE PLAN

Oconomowoc Electroplating Company, INC.

W2573 Oak Street

Ashippun, Wisconsin 53005

May, 1987

Introduction

The following plan was prepared for final closure of the unlicensed surface impoundment at Oconomowoc Electroplating Company, Inc. (OECI)in Ashippun. This plan has been developed in accordance with applicable requirements of NR181, Wisconsin Administrative Code. The surface impoundment will be closed in a manner which will prevent threats to human health and the environment.

Description of Facility

The Oconomowoc Electroplating Company, Inc. facility is located in Ashippun, Wisconsin. This facility has in the past electroplated chrome, gold, silver, copper, nickel, aluminum, zinc, tin, brass and cadmium for the trade. Currently, only aluminum, zinc and chromium are electroplated. This facility is covered under Standard Industrial Code (SIC) 3471. This facility has not obtained a Part A permit.

Description of Surface Impoundment

The surface impoundment is 60 feet long by 80 feet wide with a sidewall depth of 5 feet. There is a concrete divider running lengthwise through the center of the impoundment. The walls are concrete on two sides and sloped gravel on the others. The surface impoundment normally contains between zero and three feet of water depending on rainfall and evaporation. Below the water is a layer of metal hydroxide sludge which varies in depth. The average depth is estimated at approximately two feet. Estimated sludge volume and weight is 15,000 cubic feet and 70 tons. The surface impoundment bottom is packed dirt. Figure 1 presents a sketch of the surface impoundment.

The surface impoundment went into use in November, 1972. After the spring of 1976, no further addition of sludge to the surface impoundment was made. In 1980 approximately 1,008,000 pounds of sludge was removed and properly disposed of at Waste Management's Omega Hills facility. Since 1981 rainwater, which collects in the impoundment, has been periodically pumped out and through OECI's permitted wastewater treatment system. This system consists of the following treatment processes: 1) pH adjustment to 8.0-8.5 with sodium hydroxide; 2) addition of polyelectrolyte; 3) clarification; and 4)

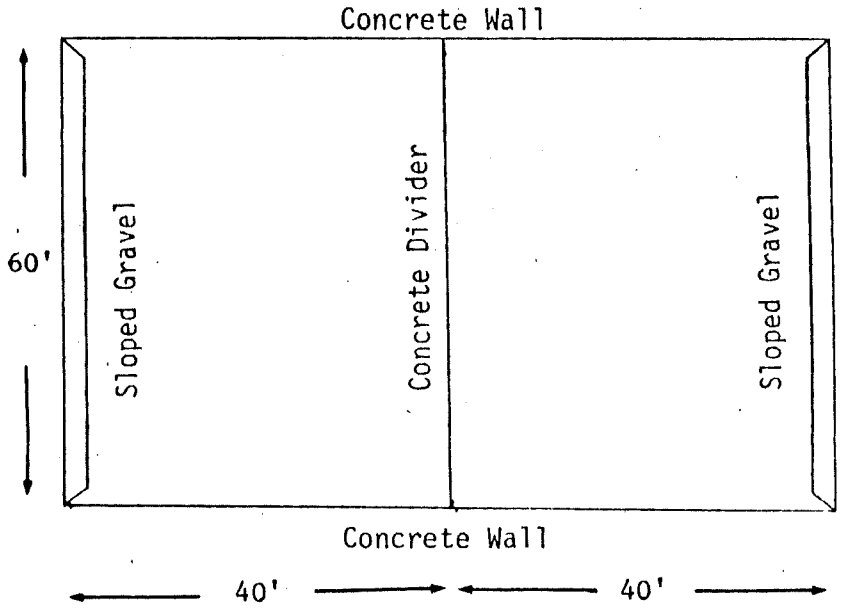

Figure 1. Oconomowoc Electroplating Company, Inc.
Surface Impoundment

activated carbon absorption. The sludge is dewatered using a bag filter. The dewatered sludge is hauled by BFI to the Winthrop Harbor facility in Zion, Illinois for disposal.

The Wisconsin DNR has installed groundwater sampling wells to investigate if leakage from the surface impoundment has occurred.

Hazardous Waste

The sludge contained in this impoundment is a listed hazardous waste (F006). An analysis of the sludge was made in 1981. Table 1 presents applicable results of this analysis.

TABLE 1. SLUDGE ANALYSIS

		Leachable		
Parameter	Total Conc.	pH 5	pH 7	pH 9
As	4.3	<0.146	<0.146	<0.146
Cd	448	82	3	7.2
Cr	6348	1.8	2.6	55.2
Ni	2985	235	51	220
Pb	336	10	10	10
Zn	4384	396	10.8	20
Ag	0.6			
Ba	149			
Cu	8209			
Hg	0.01			
Se	10			

All units are mg/L.

Schedule for Closure

All hazardous materials associated with the surface impoundment will be removed for proper disposal as part of the site closure. This plan will

require 90 days for disposal of all hazardous materials. Table 2 presents a timetable for the major events of this closure plan. The Time to Completion column indicates days after plan approval.

TABLE 2. CLOSURE PLAN TIMETABLE

Event	Time to Completion
Approval of Closure Plan	0
Removal and disposal at a RCRA authorized hazardous waste disposal facility of all surface impoundment contents	90 days
Backfilling and capping of "clean" surface impoundment	150 days
Installation of grass groundcover (seeding, fertilizing and mulching)	180 days
Site inspection and closure certification by Oconomowoc Electroplating and Professional Engineer registered in the State of Wisconsin	240 days

Closure Plan Details

1. Oconomowoc Electroplating's treatment system has sufficient capacity to handle up to an additional 40 gallons per minute of feedwater without overloading. Surface water will be treated by this system. A plastic sheeting covered, three foot high soil berm will be installed surrounding the impoundment to prevent surface runon or runoff.

2. The metal hydroxide sludge will be removed using a backhoe. The treatment system bag filter will be used to dewater the excavated material. The dewatered sludge will be hauled to a RCRA authorized hazardous waste disposal facility by a licensed hazardous waste transporter. Excavation of sludge will continue until the soil interface is visible.

3. Each half of the surface impoundment will be divided into 16 sections using a 15 foot x 10 foot grid system (see Figure 2.). A core sample will be taken to a depth of 6 inches from each of these sections using a thin wall tube sampler.

   Additionally, a total of 10 core samples will be taken from the far northeastern edge of OECI property (see Figure 3), remote from any waste treatment or handling activities to provide background data.

   All samples will be tested for total levels of chromium, zinc, copper, nickel, cadmium and lead. The analytical results of the impoundment samples will be statistically compared to background data using the t-test and a 95 percent confidence interval.

4. Contaminated areas, indicated by failure of the t-test, will be excavated to a depth of one foot using a backhoe. Contaminated soil will be placed in 20 cubic yard rolloff boxes for ultimate disposal at a RCRA authorized hazardous waste facility. The rolloff boxes will be covered during storage to prevent the accumulation of rain water.

   The sampling program and incremental excavation of contaminated soil will continue until all contamination is removed.

5. After the soil analyses indicate that the soil is not contaminated, the surface impoundment will be filled; covered with 2 feet of compacted earth and 6 inches of top soil, seeded, fertilized and mulched.

6. All equipment used in closing this impoundment will be decontaminated using an alkaline detergent. Water produced during equipment decontamination will be treated in OECI's wastewater treatment system.

Off Site Contamination

The US Environmental Protection Agency (Region V) has taken over responsibility for conducting a remedial investigation/feasibility study (RIFS) directed to off-site contamination caused by the surface impoundment

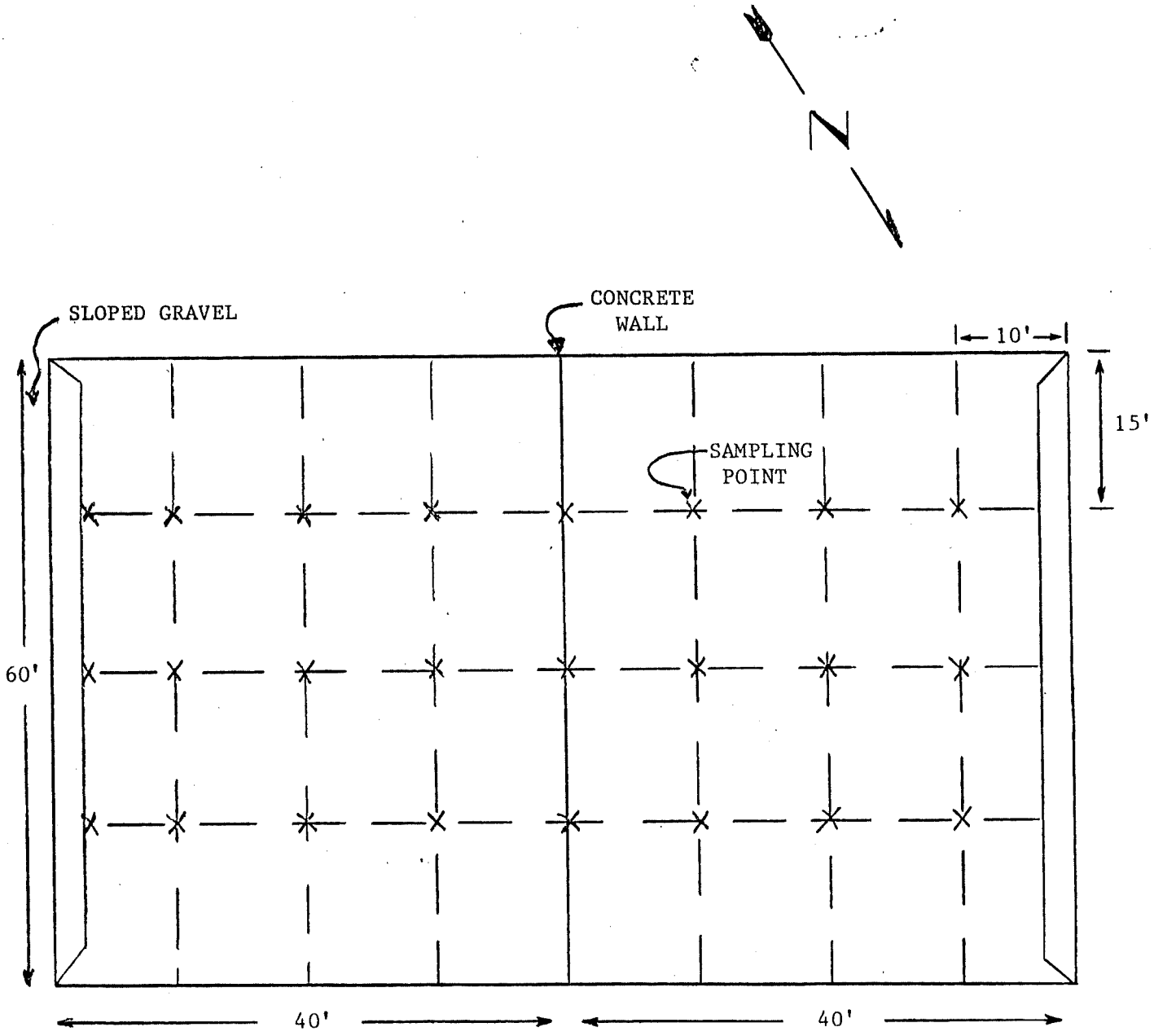

FIGURE 2. SURFACE IMPOUNDMENT SAMPLING GRID

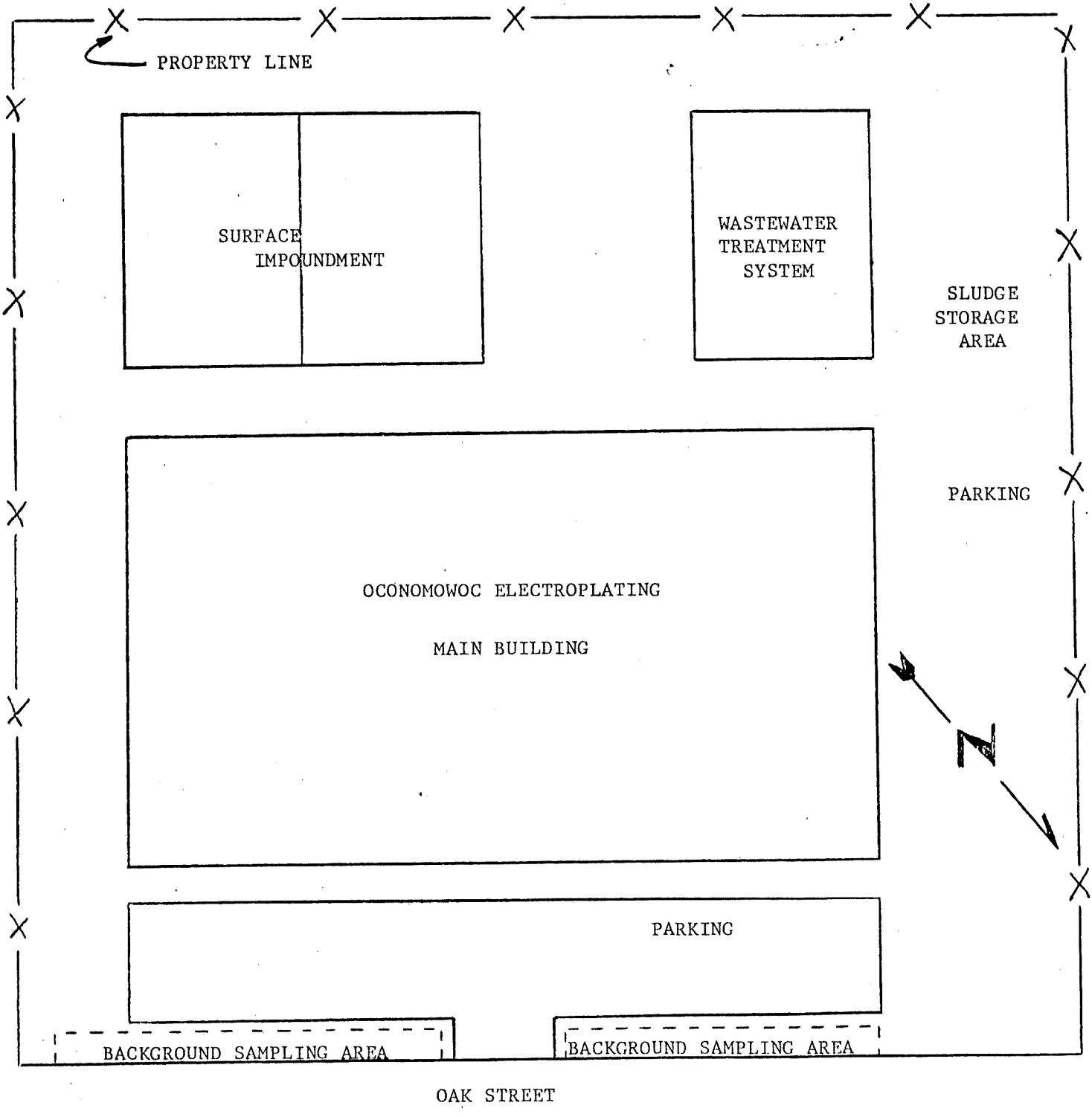

FIGURE 3. BACKGROUND SAMPLE LOCATIONS

because of the identified substantial threat to human health and the environment and OECI's financial situation. The RIFS will determine the degree and extent of surface water, groundwater and soil contamination and identify feasible remediation activities. Phase II of the RIFS will be initiation of the selected activities by an EPA contractor.

OECI will not be involved in any of these activities.

Status After Closure

No further use of the land at the surface impoundment site is planned at this time. There is no anticipated industrial activity that would disturb the area. OECI will use a periodic inspection program to maintain and monitor the integrity of the closed impoundment cover. This program will consist of weekly inspections by OECI personnel during the growing season with daily inspections during springtime wet weather. These inspections will be used to quickly identify and correct breaks in the grass cover caused by erosion etc.

There will be no hazardous waste remaining on-site at the conclusion of closure activities. As stated previously, no waste was placed in the surface impoundment after Spring, 1976. Therefore, a long-term care plan consisting of the described inspection program will be sufficient. Costs associated with this plan are minimal, consisting of labor by OECI personnel, and potentially, grass cover repair work.

Proof of Financial Responsibility

This Closure Plan has been prepared with the knowledge that the total financial resources of Oconomowoc Electroplating Company, Inc. are insufficient to accomplish the closure workscope. Therefore, OECI cannot provide proof of financial responsibility on a scale required for closure and long-term care.

Closure Certification

Each major task of this closure plan will be supervised by a Professional Engineer, registered in the State of Wisconsin. A final site inspection and submittal of a closure certification statement by Oconomowoc Electroplating

Company and approval by a Professional Engineer is required to complete closure of the surface impoundment.

A Closure Documentation Report will accompany the certification to document the closure activities. This report will include:

- the volume of waste removed,
- all analytical data generated in the soil sampling program
- the statistical analysis of all background and impoundment analytical data,
- a description of the method of waste handling and transport,
- the waste manifest numbers from waste shipments,
- "as built" documentation of the extent of excavation, the fill, the cap, final site grades and erosion controls,
- photo documentation of all major closure activities and
- a chronological summary of closure activities and the costs involved.

Professional Engineer Certification

I certify that I have personally reviewed the Closure Plan prepared for Oconomowoc Electroplating Co., Inc. I therefore attest that this plan has been prepared in accordance with good engineering practices. I certify that I am a duly Registered Professional Engineer under the laws of the State of Wisconsin and that I am competent to review this document.

James E. Kane, P.E.
Wisconsin Registration No. 20267
May 5, 1987

SW, Not Inactive File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

February 17, 1987

IN REPLY REFER TO: 4430

Mr. Steve Mertins
Oconomowoc Electroplating Company, Inc.
W2573 Oak Street
Ashippun, WI 53005

SUBJECT: Oconomowoc Electroplating Company, Inc.
WID 006100275
Surface Impoundment Closure Plan
Incompleteness Letter

Dear Mr. Mertins:

We have completed our review of the surface impoundment closure plan for Oconomowoc Electroplating Company, Inc. (OECI) located at W2573 Oak Street, Ashippun, WI, received on November 25, 1986. Based on our review, we find the plan does not address the NR 181 closure and long-term care requirements for your facility. We urge you to consider our following comments in preparing and submitting a closure and long-term care plan that will adequately address the NR 181 requirements. If you do not feel you have the capabilities to conduct this work, we suggest you retain the services of professional consulting firm with experience in this type of work.

The closure plan must detail engineering plans, specifications and a closure and long-term care report addressing portions of NR 181.42(8) and (9), NR 181.44(12) and (14), NR 181.49 and NR 181.51 applicable to closure of the surface impoundments. The attached outlines for these sections of NR 181 along with NR 181 should help you in revising the closure plan. Specifically we have the following comments on your submittal.

1. In the description of the surface impoundment it states that the sludge handling facility will be upgraded. Have plans and specifications been submitted to the Department's Industrial Wastewater Section for their approval? If they have not, please contact Mike Hammers at (608) 267-7640 to discuss when they will be submitted.

2. The description also states that the DNR wells have shown no evidence of contaminant migration. Department sampling results have shown elevated metals concentrations. Since the wells are not on OECI's property, contaminant migration is apparently taking place. Please submit information to substantiate the absence of contaminant migration.

3. The schedule of closure requests an extension from 90 days to 180 days to remove the hazardous waste and contaminated soil. The Department is able to grant an extension if the operator demonstrates that all steps necessary to protect public health and the environment have been taken.

The closure plan does not provide this demonstration. Based on EPA's Technical Assistance Team Report on your facility, it appears that the impoundments are a substantial threat to human health and the environment. Please submit additional information if you wish to pursue this extension. In the absence of this demonstration, all hazardous waste and contaminated soils must be removed with 90 days of the closure plan approval and closure must be completed within 180 days of approval.

4. The closure plan must also include a discussion of NR 181.44(12). Specifically:

   a. Within 60 days of removing the hazardous waste the impoundments must be filled, covered by 2 feet of compacted earth and covered by 6 inches of topsoil.

   b. Within 90 days the site must be seeded, fertilized and mulched.

   c. The facility must be periodically inspected and maintained.

   d. How will the requirements of NR 181.49 will be met? Currently, OECI does not have an approved groundwater monitoring plan or an approved groundwater monitoring system.

5. Runon must be minimized during closure.

   Please describe how this will be accomplished.

6. OECI needs to prepare a long-term care plan in accordance with NR 181.42(9) and NR 181.44(14). The plan must describe the activities and frequency required to maintain and monitor the integrity of the cover and the cost estimate for long-term care.

7. OECI must provide proof of financial responsibility for closure and long-term care as specified in NR 181.42(10). Proof may be established through a bond, deposit with the Department, a letter of credit, a net worth test, or several other alternatives listed in NR 181.42(10).

8. The report states that four soil samples will be collected from the bottom of the lagoons. Four samples does not appear to provide representative sampling. Increase the number of samples, prepare a sampling grid to cover the contaminated areas and include approximate sampling locations on a plan sheet.

9. The report states that soil samples will be analyzed for metals using the Extraction Procedure (EP) test. Also analyze the soils for total metals. Since the waste is a listed rather than a characteristic waste, background must be determined based on total metal concentrations rather than EP concentrations.

10. In establishing background soil concentrations, submit a map showing where background samples will be collected and state how many samples will be collected to establish the 95% confidence limit.

11. The report states that contaminated soils will be removed to a licensed facility. Since the contaminated soils were contaminated by a listed hazardous waste, the contaminated soil is a hazardous waste. Contaminated soil must be removed to a RCRA authorized hazardous waste facility.

12. Unless OECI is able to demonstrate that all hazardous waste and contaminated soil and groundwater has been removed from the surface impoundment area, OECI must meet the requirements of NR 181.42(9) and NR 181.44(14). We recommend that you review these requirements and expand the section entitled "Contingent Plan".

13. The closure plan must be prepared and submitted under the stamp of a registered professional engineer (NR 151.51(1)).

14. Expand the section "Closure Certification". Include:

    a. The soil sampling results used to determine background and excavation depths.

    b. The statistical analysis for background.

    c. As built documentation detailing the extent of excavation, the fill, the cap, final site grades and erosion controls stamped by a registered professional engineer.

    d. Photo documentation of the major closure activities.

    e. Stamped by a registered professional engineer.

Please consider this letter, its attachments and Chapter NR 181 in revising your closure and long-term care plan. You must respond to this letter within 60 days. If you do not, the Department will have no other recourse than to deny your closure plan. Five copies of the closure and long-term care plan must be submitted. The review fee for a surface impoundment closure plan is $1500. The review cannot be completed without it. If you have questions, contact Mark Tusler (608) 266-5798.

Sincerely,

Richard E. O'Hara

Richard E. O'Hara, Chief
Hazardous Waste Management Section
Bureau of Solid Waste Management

REO:MT:fcm/8455V

Enclosure

cc: Joe Brusca - SD
Ron Curtis - SD
Nichol Mamolou - SD/Horicon Area
Steve Wicklund - DOJ
Chuck Slaustas - EPA, Region V-5HS/JCK/13
Rick Karl - EPA, Region V-5HS/JCK/13
Mike Hammers - WW/2

General Closure Plan Submittal Requirements
(NR 181.42(8))

The following requirements apply to all hazardous waste facilities. The closure plan shall include:

1. How and when the facility will be partially and/or fully closed
2. The intended post closure land use
3. A time line for closure and any intervening activities
4. The maximum inventory of wastes in storage or in treatment during the life of the facility
5. Details of any required facility or equipment decontamination
6. A description of how:
   a. Further maintenance and hazardous waste releases will be minimized
   b. Within 90 days all wastes will be removed or managed on-site
   c. Closure will be completed within 180 days of the receipt of the final volume of waste
   d. All required equipment used in the operation of the facility will be decontaminated or disposed of
   e. All equipment required for long-term care will be provided

6031T

Specific Closure Requirements for Land Disposal Facilities (NR 181.44(12) and (13))

Closure plans may be required by the department for any hazardous waste facility which is closed but which was in existence on August 1, 1981. The department may require any of the information outlined below or in NR 181.44(6) (feasibility report); (7) (plan of operation); (10) (minimum design and operation requirements); (11) (monitoring); or NR 181.49 (groundwater monitoring requirements).

I. For facilities without operating licenses, the following is required:

A. Within 60 days after ceasing to accept waste, the following shall be accomplished:

1. A cover consisting of 2 feet of compacted earth (fine grained soils may be specified) shall be applied at a slope greater than 2 percent and less than 33 percent.

2. Surface water must be diverted from the filled area. If flow is diverted over a previously filled area, a 2-foot clay swale must be provided.

3. The finished surface shall consist of 6 inches of topsoil.

B. Within 90 days after ceasing to accept waste, the finished surface shall be seeded, fertilized, and mulched.

C. Post closure inspections will be performed until the fill area has stabilized. Leachate and groundwater monitoring equipment may be required.

D. For surface impoundments, all hazardous waste and contaminated material not approved for on-site disposal must be removed.

II. For facilities with operating licenses, the following is required:

A. Within 60 days after ceasing to accept waste, a final cover shall be constructed with the following features:

1. Provides long-term minimization of infiltration

2. Functions with minimum maintenance

3. Promotes drainage

4. Accommodates settling

5. Has a permeability less than the bottom liner or native subsoils

6. A 2-foot thick top cover with a slope of greater than 3 to 5 percent and less than 25 percent, planted with vegetation to minimize erosion

7. An intermediate 12-inch drainage layer with a permeability not less than 10^{-3} cm/sec, a final bottom slope at least 3 percent, and overlain by graded granular or synthetic filter material

8. An underlying low permeability layer with 2 components: an upper layer which prevents the migration of any liquid, has an upper slope of at least 3 percent, is bounded above and below by 6 inches of bedding material, and is located at least 1 foot below maximum frost depth; and a lower layer consisting of 2 feet of clay with permeability not greater than 10^{-7} cm/sec, constructed at 90 percent modified procter in 8-inch lifts

B. Surface water must be diverted from the filled area. If flow is diverted over a previously filled area, a 2-foot clay swale must be provided.

C. Within 90 days after ceasing to accept waste, the finished surface shall be seeded, fertilized, and mulched.

D. Post closure inspections will be performed until the fill area has stabilized.

E. For surface impoundments, all hazardous waste and contaminated material not approved for on-site disposal must be removed.

6031T

General Long-term Care Requirements
(NR 181.42(9))

I. Long-term Care Will Consist of:

1. Any required monitoring and reporting.

2. Maintenance and monitoring of waste containment systems, drainage control features, slopes, vegetative cover, monitoring equipment and security requirements.

3. Control of erosion, settlement, drainage and land usage.

4. Measures needed to correct contamination caused by leachate or gases generated within the landfill, to protect the environment and prevent hazards to human health.

II. A Long-term Care Plan Shall Provide:

1. A description of the planned monitoring activities and frequencies to comply with the above.

2. A description of the planned maintenance activities and frequencies to ensure the integrity of the cap and final cover, the function of facility monitoring equipment.

3. The name, address and phone number of the facility long-term care contact person.

5228V

Specific Long-term Care Requirements for Land Disposal Facilities
(NR 181.44(14))

I. After Final Closure, the Owner/Operator Shall:

1. Maintain integrity of the final cap, making necessary repairs, etc.

2. Maintain and monitor the backup leachate collection system in accordance with the approved plan of operation.

3. Continue to operate the leachate collection system until leachate is no longer collected.

4. Maintain/monitor the groundwater monitoring system and all applicable requirements of NR 181.49.

5. Prevent runon and runoff from damaging the cover.

6. Protect/maintain all bench marks.

7. Implement measures need to correct contamination caused by leachate or gases.

II. Within 90 days after completion of closure, the owner or operator shall file with the county register of deeds and DNR a plat sheet indicating the location and dimensions of all landfill cells.

5228V

Groundwater Monitoring Requirements
(NR 181.49)

I. For Facilities Which Accepted Hazardous Waste After November 19, 1980 but not After January 25, 1983:

A. The groundwater monitoring system to be approved by the Department shall include, at a minimum:

1. Two or more upgradient monitoring points screened in the upper most aquifer, which are not affected by the facility.

2. Four or more downgradient monitoring points, screened in the upper most aquifer, located between the hazardous waste boundary and the property boundary, and two of which will be set in a well nest configuration.

3. Two or more pore water samplers in the unsaturated zone beneath the waste.

4. Well development during which stabilized pH, TOC and conductivity measurements will be obtained.

B. A leachate monitoring system will be installed for level measurements and sampling.

C. Monitoring wells will be constructed of inert, non-contaminating material, protected, secured and permanently labelled, of minimum 2-inch i.d., with sand pack and grouting.

D. All analyses will be according to Standard Methods or Department approval.

E. Quarterly static water level measurements and monthly leachate level measurements will be taken.

F. The facility will develop and maintain a groundwater sampling and analyses plan.

II. For Facilities Defined Above:

A. Initial background water quality will be established by quarterly sampling in the first year for:

1. EPA drinking water parameters.

2. Groundwater quality parameters (chloride, iron, manganese, phenols, sodium and sulfate).

3. Groundwater contamination indicator parameters (pH, specific conductance, total organic carbon, total organic halogen).

4. Physical characteristics (odor, color, turbidity).

B. For groundwater contamination indicator parameters, four replicate measurements will be taken for each quarterly sample.

C. After the first year, quarterly samples will be analyzed for the above groundwater quality, groundwater contamination indicator, and physical parameters.

D. Replicate measurements for indicator parameters shall be compared to background levels using the Students single-tailed t-test and a 0.01 significance level (for pH, a 2-tailed test at the 0.01 significance level will be used).

E. Results will be submitted to the Department on at least an annual basis.

5228V

Correspondence Memorandum, State of Wisconsin

To: Wendy Wojner SOD
From: Mark Tusler SW/3
Subject: OECI Lagoons

I've gone through the files to determine when the lagoons came under the NR 181 program. Until 1984, the lagoons were part of the industrial wastewater program (NR 181 exempts WPDES systems from its regulations). Mike Hammers 6/1/84 approval letter requires OECI to close the impoundments, in accordance with Bureau of Solid Waste requirements, as soon as possible. Your 9/26/87 file memo indicates that the Department was not sure of how to handle the impoundments. The 3/1/85 stipulation states that the present accumulation of treatment sludge must be managed according to NR 181.21 within 90 days. Though it was not specifically identified, I'd think that this would include the sludge that had accumulated in the lagoons. Brodzinski's 4/30/85 contact form indicates that OECI still doesn't know what to do with the lagoons. The 4/21/85 and 6/3/85 Hammer letters to OECI remind them that proper abandonment of the lagoons is a condition of his previous approval. Cath Hay's 6/10/85 file memo indicates that most of the stored waste has been removed with exception of the lagoon sludge. Your 6/13/85 file memo indicates that you told OECI that because of the relatively dry conditions, it would be a good time to remove the sludge from the lagoons. Your 8/21/85 letter to OECI tells them to clean close the lagoons and fill them with clean fill. A facility contact form notes that the wastewater judgement had caused a time delay in getting the needed action. Your 9/3/85 letter to OECI tells them to get a contractor for clean-up. Once the contractor has been selected, submit a closure plan. Brodzinski's facility contact form states that OECI began pumping contents from the west lagoon into the east lagoon causing the east lagoon to overflow. Brodzinski told them that this was an unpermitted discharge and the lagoons must be properly abandoned. Your 12/4/85 NON cites them for exceeding the 90 day storage requirement and operating an unpermitted hazardous waste lagoon. Your 2/11/86 compliance form notes that the 12/4/85 violations are still outstanding. These violations were carried into the 5/9/86 enforcement record and subsequent referral.

A strict interpretation of NR 181 would indicate that the lagoons came into the hazardous waste program with the 6/1/84 wastewater approval letter. The lagoon sludge ~~was~~ containing hazardous waste and OECI had 90 days to remove it under their generator status. Once OECI exceeded the 90 days, the lagoons became hazardous waste surface impoundments. I would also interpret this 6/1/84 date as notification that OECI intended to close the lagoons. OECI would then have 180 days to complete closure (NR 181.42(8)).

However, the approval letter stated that the lagoons should be closed as soon as is reasonably possible. This ambiguous time frame puts closure into a subjective schedule. Closure is not clearly in the WPDES program or the NR 181 program. In looking at the closure

scheduel

history, the test is "is closure being completed under a reasonable time frame?". A year later, Hammers reminds OECI that closure is a condition. This reminder indicates that the Department is not making acceptable progress at closure. In your 6/13/85 meeting with OECI, you tell them that it would be a good time to remove the sludge. This is followed by your letter telling them to clean close, the 12/4/85 NON for operating a hazardous waste surface impoundment and the 6/2/86 referral. In looking back over the file history, I'd say that we bent over backwards in trying to allow them to close the lagoons in a reasonable time frame and I'd say that this is a good example of stepped enforcement in a very complicated case.

Summary of 1985* Permit Limits Excursions by Oconomowoc Electroplating Co., Inc.

Pollutant (No. of Tests)	Month	Mass Limits (lbs/d)		Conc. Limits (mg/L)		NR 261 Limits (mg/L)	
		Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.
Cadmium (6)	Aug.	-	-	-	1	-	-
	Sept.	-	-	-	1	-	-
	Oct.	-	-	-	1	-	-
Copper (6)	Sept.	-	-	-	1	-	-
	Oct.	-	-	-	1	-	-
	Dec.	-	-	1	1	-	-
Zinc (25)	July	-	-	-	1	-	-
	Aug.	-	1	-	1	-	1
	Sept.	-	-	-	1	-	1
	Oct.	-	-	-	1	-	-
	Nov.	-	-	-	1	-	-
	Dec.	-	1	2	1	2	1

In 1985* no permit limit excursions occurred for total chromium (12), hexavalent chromium (12), lead (6), nickel (25), silver (1), total cyanide (6), cyanide, A (6), total suspended solids (121) or pH (121).

*July through December.

Summary of 1986 Permit Limits Excursions by Oconomowoc Electroplating Co., Inc.

Pollutant (No. of Tests)	Month	Mass Limits (lbs/d)		Conc. Limits (mg/L)		NR 261 Limits (mg/L)	
		Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.
Cadmium (12)	Jan.	-	1	1	1	-	1
	Feb.	-	-	-	1	-	-
	March	-	-	-	1	-	-
	April	-	-	-	1	-	-
	May	-	-	-	1	-	-
	June	-	-	-	1	-	-
	Oct.	-	-	-	1	-	-
	Nov.	-	-	-	1	-	-
Chromium,VI (12)	Feb.	-	-	-	1	-	-
	March	-	-	1	1	-	-
Copper (12)	Jan.	-	-	1	1	-	-
	Feb.	-	-	1	1	-	-
	March	-	-	1	1	-	-
	May	-	-	1	1	-	-
	June	-	-	-	1	-	-
	July	-	-	-	1	-	-
	Oct.	-	-	1	1	-	-
Cyanide, A (12)	Jan.	-	-	-	1	-	-
Nickel (48)	Jan.	-	-	1	1	1	1
Silver (1)	Sept.	-	-	-	1	-	-
Zinc (48)	Jan.	2	1	4	1	4	1
	Feb.	1	1	3	1	3	1
	March	-	-	-	1	-	-
	April	1	1	1	1	1	1
	May	-	1	3	1	3	1
	June	1	1	4	1	4	1
	July	-	1	4	1	4	1
	Aug.	1	1	1	1	1	1
	Oct.	-	-	-	1	-	-
	Nov.	-	1	2	1	2	1
	Dec.	-	-	-	1	-	-

		Min.	Max.		Min.	Max.
pH (248)	Jan.	1	2	March	-	2
	Feb.	-	1	April	1	-

In 1986 no permit limit excursions occurred for total chromium (24), lead (12), total cyanide (12), or total suspended solids (248).

Summary of 1987 Permit Limits Excursions by Oconomowoc Electroplating Co., Inc.

Pollutant (No. of Tests)	Month	Mass Limits (lbs/d)		Conc. Limits (mg/L)		NR 261 Limits (mg/L)	
		Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Monthly Avg.
Cadmium	Jan.	-	-	-	1	-	-
(12)	Nov.	-	-	-	1	-	-
Copper	April	-	-	1	1	-	-
(12)	May	-	-	-	1	-	-
	June	-	-	1	1	-	-
	July	-	-	-	1	-	-
	Aug.	-	-	-	1	-	-
	Sept.	-	-	-	1	-	-
Zinc	Jan.	-	-	-	1	-	-
(48)	Feb.	-	-	-	1	-	-
	April	-	-	-	1	-	-
	July	-	-	1	1	1	1
	Aug.	-	-	-	1	-	1
	Sept.	-	-	-	1	-	-
	Oct.	-	-	-	1	-	-
	Nov.	-	-	1	1	1	1
	Dec.	-	-	1	1	1	-

In 1987 no permit limit excursions occurred for total chromium (24), hexavalent chromium (24), lead (12), nickel (48), silver (1), total cyanide (12), cyanide, A (12), total suspended solids (229) or pH (224).

SPECIAL CONDITIONS

Modified: SEP 3 0 1986

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(1) During the period beginning on the date of signature and lasting until March 31, 1988, the permittee is authorized to discharge from outfall serial number 001 (treated process wastewaters and boiler blowdown).

(2) This discharge shall be limited and monitored by the permittee as specified below.

(a) There shall be no discharge of floating solids or visible foam in other than trace amounts.

(b) Samples taken in compliance with the monitoring requirements specified below shall be taken at the following location: Outfall 001 prior to mixing with noncontact cooling waters and prior to discharge to Davy Creek.

	DAILY EFFLUENT LIMITATIONS					MONITORING REQUIREMENTS	
	Quantity-kg/day (lbs/day)			Other Limitations (Specify Units)		Sample	Sample
EFFLUENT CHARACTERISTIC	Average	Maximum	Minimum	Average	Maximum	Frequency	Type
Flow - (GPD)	-	-	-	-	-	Daily	Continuous
Total Cadmium(3)	0.01 lbs/day	0.12 lbs/day	-	0.02 mg/l	0.19 mg/l	Monthly	24-hr Comp.
Total Chromium	0.56 lbs/day	1.78 lbs/day	-	1.12 mg/l	2.77 mg/l	2x Monthly	24-hr Comp.
Hexavalent Chromium	0.03 lbs/day	0.21 lbs/day	-	0.05 mg/l	0.32 mg/l	2x Monthly	24-hr Comp.
Total Copper(3)	0.03 lbs/day	0.06 lbs/day	-	0.05 mg/l	0.10 mg/l	Monthly	24-hr Comp.
Total Lead	0.22 lbs/day	0.44 lbs/day	-	0.43 mg/l	0.69 mg/l	Monthly	24-hr Comp.
Total Nickel	0.50 lbs/day	2.55 lbs/day	-	1.0 mg/l	3.98 mg/l	Weekly	24-hr Comp.
Total Silver	0.01 lbs/day	0.08 lbs/day	-	0.02 mg/l	0.12 mg/l	Annually	24-hr Comp.
Total Zinc	0.09 lbs/day	1.67 lbs/day	-	0.18 mg/l	2.6 mg/l	Weekly	24-hr Comp.
Total Cyanide	0.33 lbs/day	0.77 lbs/day	-	0.65 mg/l	1.2 mg/l	Monthly	24-hr Comp.
Cyanide(A)	0.16 lbs/day	0.55 lbs/day	-	0.32 mg/l	0.86 mg/l	Monthly	24-hr Comp.
Total Toxic Organics (4)	-	1.37 lbs/day	-	-	2.13 mg/l	Quarterly(4)	24-hr Comp.
Oil and Grease	13.0 lbs/day	33.3 lbs/day	-	26.0 mg/l	52.0 mg/l	Monthly	Grab
Total Suspended Solids	15.5 lbs/day	38.5 lbs/day	-	31.0 mg/l	60.0 mg/l	Daily	24-hr Comp.
pH (s.u.) (5)	-	-	6.0	-	9.5	Daily	Continuous
Sulfide (mg/l as S)	-	-	-	-	-	Monthly	Grab

(3) The monthly average effluent limitations for total cadmium and total copper of 0.02 mg/l and 0.05 mg/l respectively represent water quality based effluent limitations which have been adjusted to reflect the effluent quality achievable by the best demonstrated treatment technology available. As demonstrated treatment technology improves, the monthly average effluent limitations for total cadmium and total copper will be modified in accordance with s. 147.05, Stats., until the original water quality based effluent limitations of 0.001 mg/l and 0.04 mg/l, respectively, are achieved.

(4) The summation of all quantifiable values greater than 10 micrograms per liter for the toxic organics listed in Table 1 below shall not exceed the total toxic organic (TTO) limitation of 2.13 mg/l.

6-5-89

Superfund Site Summary Sheet
Wisconsin Department of Natural Resources

Site Name: Oconomowoc Electroplating

Site Location: W2573 Oak Street
City of Ashippun
Southern District

SE, S30, T9N, R17E
Dodge County

USEPA I.D. #: WID 00610275

Hazard Ranking System Score:

Migration Score:	31.86
Fire and Explosion Score:	0.00
Direct contact Score:	0.00

Reason for Substantial DAnger: This site is potential source of groundwater contamination in the area and of surface water contamination of Davy Creek and nearby wetlands.

Imminent Risk: None

Site Geology/Hydrogeology: Soils in the area include loams, silty loams and fine sandy loams. These are underlain by unconsolidated glacial end moraine and outwash. The major bedrock aquifer for drinking water is the Ordovician Platteville-Galena Dolomite. The depth to groundwater is less than ten feet. Local groundwater flow is toward adjacent wetland and Davy Creek. Regional flow is toward the Rock River.

Physical Conditions: The five acre site, located adjacent to a wetland and Davy Creek, began operating prior to 1960. The facility is an electroplating shop engaged in the plating and finishing of various types of metallic products. Untreated wastewater was discharged into Davy Creek via the nearby wetlands until 1972. In 1972, the Oconomowoc Electroplating Company constructed two unlined settling ponds for wastewater treatment. Large volumes of sludge have accumulated in these ponds. The ponds have periodically overflowed into the wetlands. A physical/chemical wastewater treatment system was constructed in the late 1970's to replace the settling ponds. The direct discharge of untreated wastewater, poor removal efficiency of the ponds and inefficient operation of the wastewater system have contributed to the accumulation of heavy metal sludges in the adjacent wetlands and contamination of the groundwater. Plating wastes have eaten through the concrete waste troughs in the plant floor and have seeped out of the ground near the facility. There has also been documentation of leaking drums and spilled wastewater sludge at the site.

Responsible Parties: Oconomowoc Electroplating Company, Inc.

Substances of Concern: The following heavy metal contaminants were detected in analyses of on-site sludges and groundwater: cadmium, zinc, chromium, nickel and cyanide. Volatile organic compounds were also detected in concentrations higher the backgrounds levels.

Site Status: In April, 1975, the Wisconsin Department of Natural Resources referred the Oconomowoc Electroplating company to the Attorney General's

office for enforcement of numerous violations of effluent limitations. This resulted in the installation of the wastewater treatment plant in 1977. The site was listed on the national priorities list in 1983. A closure plan, as required by RCRA, was submitted in November, 1985. The Oconomowoc Electroplating Company has told the EPA that the company will not perform the remedial investigation/feasibility study. The EPA will perform the RI/FS under Superfund. The RI activities for the entire site investigation began in October 1988 and were completed in May 1989. The draft RI Report should be finished in the Summer of 1989. The wetland Interim Action/Investigation began in December, 1987 and was completed December 3, 1987. A Toxicity Report was submitted to the WDNR on April 10, 1989. A Public Health workshop was held for the public by ATSDR on July 5, 1988.

Site Informational Repository: F & M Bank
N533 Highway 67
P.O. Box 365
Ashippun, WI 53003

State Project Manager: Celia VanderLoop, Engineer
Environmental Response and Repair Section
Bureau of Solid Waste Management
Dept. of Natural Resources
P.O. Box 7921
Madison, WI 53707
(608) 266-3308

Projected Work: A public meeting to explain the final report on the Wetlands might be scheduled for the summer of 1989. WDRN staff will be required to attend this event. The draft RI Report for the entire OECI site should be completed by fall of 1889.

Date Prepared: June 5, 1989

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ON SCENE COORDINATOR'S REPORT

Delivery Order #6894-05-093

Action Dates: July 20, 1987 to July 22, 1987

Region V
Waste Management Division
Emergency Response Section

On Scene Coordinator's Letter Report

CERCLA Immediate Removal Project

Oconomowoc Electroplating Co.

Ashippun, Wisconsin

Site ID# M8

Delivery Order #6894-05-093

Action Dates: July 20, 1987 to July 22, 1987

Verneta J. Simon

Verneta J. Simon
On-Scene Coordinator
Enforcement and Emergency Response Branch
Waste Management Division
United States Environmental Protection Agency
Region V

EXECUTIVE SUMMARY

On July 20, 1987, the United States Environmental Protection Agency (U.S. EPA) initiated a removal action at the Oconomowoc Electroplating Co. Inc., (OECI) site in Ashippun, Wisconsin. The action was taken to mitigate the threat to human life by direct contct with contaminated sediments and soils, since this site is adjacent to a heavily used little league baseball field.

The U.S. EPA installed approximately 800 linear feet of fence to prevent public access to the site pending the remedial action. Also, another emergency action may be undertaken depending on the results of two studies conducted in April and December of 1987.

The action was completed on July 22, 1987, at a cost of $14,016.92 which includes $8,609.21 for the Emergency Response Cleanup Services (ERCS) contractor cost. The On-Scene Coordinator was Verneta J. Simon.

This site is on the National Priorities List.

1.0 SUMMARY OF EVENTS

1.1 Site Description and Initial Situation

The OECI (Oconomowoc Electroplating Company, Incorporated) site is located in Ashippun Township Dodge County, Wisconsin and includes the facility at 2573 South Oak Street and the wetland area across from the facility. The wetland area is near the receiving water, Davy Creek. (See Figs. 1 and 2.) For over 20 years, plating wastes were allegedly released into the wetlands by the OECI facility. Two studies were conducted at this site to determine the extent of contamination and hazard posed by the contaminants. These studies were conducted in April and December of 1987. Most of the contamination appears to be confined to the area near the plant discharge. Lower levels of contamination were in downstream sediments. The contaminants are heavy metals and cyanide. We are presently correlating the data from these two studies to determine the volume of contaminated soil that that needs to be removed.

This site is on the National Priorities List in group 13 and has a Hazard Ranking System (HRS) score of 31.86.

1.2 Action Taken

On June 17, 1987, the Regional Administrator signed an action memorandum for $28,400, which authorized erecting an 8-foot fence around a portion of the site perimeter. From July 20, 1987 to July 22, 1987, the fence was constructed and it was approximately 800 linear feet. Photographs of the fence are contained in Appendix J.

1.3 Efforts to Obtain a Responsible Party Response

OECI was verbally notified on May 29, 1987, that U.S. EPA intended to fence a portion of the site. OECI declined this opportunity and was sent a letter on July 10, 1987, stating that U.S. EPA would erect a fence.

1.4 Resources Committed

To undertake this removal action, PEI Associates, Inc. the prime Emergency Response Cleanup Services (ERCS) contractor secured the services of the following subcontractors:

1) Landmart Surveying
2) Century Fence.

The costs incurred during this action are summarized in Tables 1-3.

FIGURE 1

LOCATION MAP

OCONOMOWOC ELECTROPLATING COMPANY, INC.

ASHIPPUN, WI

SCALE: 1"=15 MI

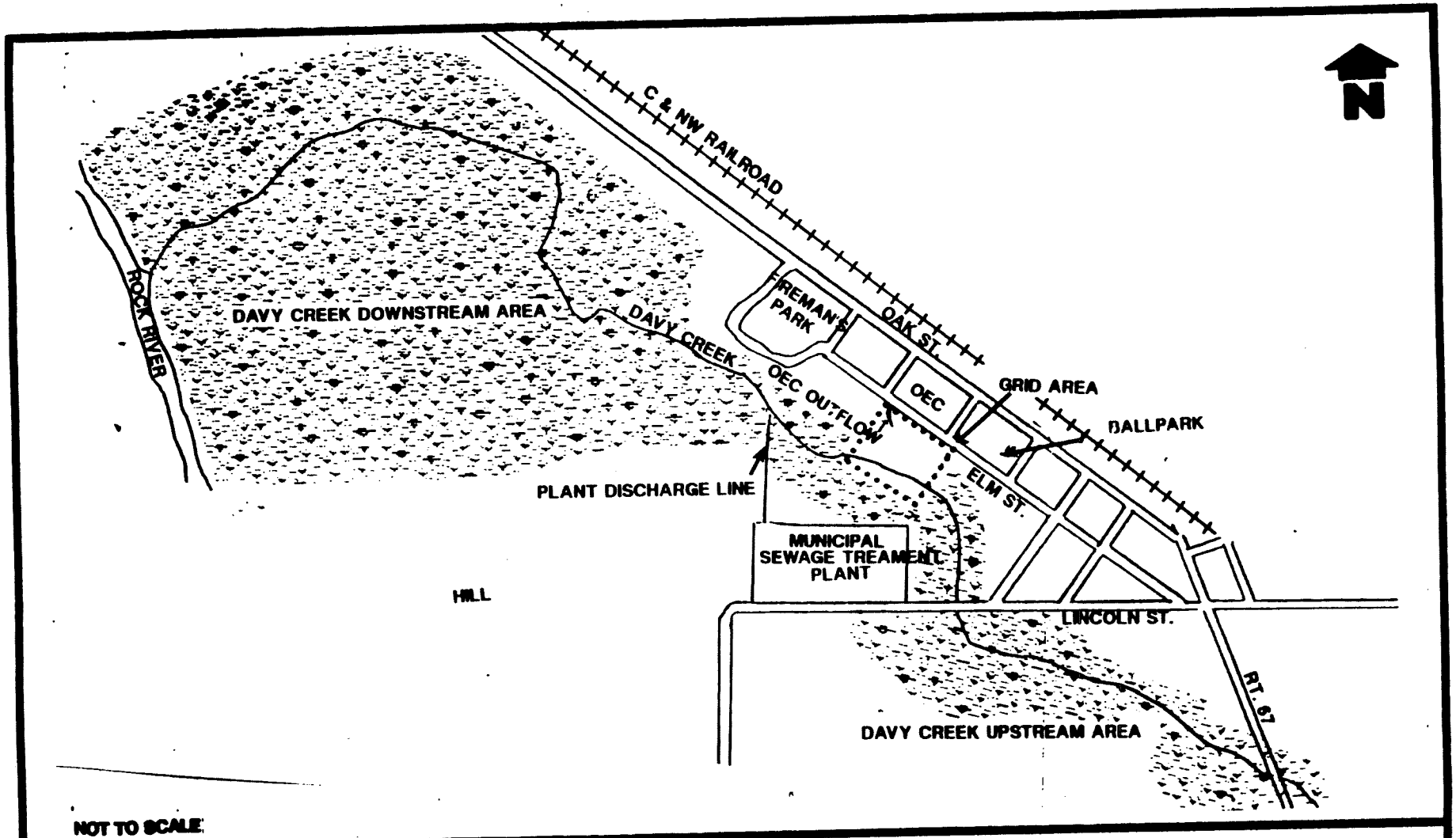

FIGURE 2
SITE MAP

OCONOMOWOC ELECTROPLATING COMPANY (OEC)/
DAVY CREEK WETLAND

ASHIPPUN, WI

TABLE 1

SUMMARY OF CONTRACTOR EXPENDITURES

Activity/Contractor	Costs
Survey Landmart Surveying	$ 437.75
Fence Century Fence	$7,600.16
ERCS Personnel	$ 571.30
TOTAL CONTRACTOR COSTS	$8,609.21

As per EPA 1900-55 forms. To date, the OSC has approved a PEI invoice for $8,609.21 on December 28, 1987. Future invoices are not expected.

TABLE 2

SUMMARY OF U.S. EPA EXPENDITURES

U.S. EPA	
Direct Hours (73)	$1,599.52
Travel Costs	85.19
Indirect Costs (73 x $51)	$3,723.00
Total	$5,407.71

The U.S. EPA costs listed above were taken from a U.S. EPA Grants and Financial Management generated computer cost report (SPUR) dated June 9, 1988. (Appendix L).

TABLE 3

SUMMARY OF ALL COSTS

ORGANIZATION	COSTS
Contractor	$ 8,609.21
EPA	$ 5,407.71
TOTAL	$14,016.92

Note: All costs are subject to revision by the U.S. EPA, and reflect only those costs directly associated with the removal action.

1.5 Community Relations

Prior to the erection of the fence, U.S. EPA established a good rapport with the commuity. This was done by attending an open town board meeting and establishing an information repository at F and M Bank. Therefore, when the fence was constructed it was not a surprise to the community since they were aware of site conditions and the latest sampling data.

1.6 Public Health

Sediments at this site present a threat to the health and environment of the residents, since our preliminary evaluation of the extent contamination survey data indicated heavy and medium contamination. Also, ATSDR's recommendation was that a potential public health threat could exist due to inorganic contamination via direct skin contact or ingestion pathway and that access should be restricted.

2.0 EFFECTIVENESS OF THE IMMEDIATE ACTION

2.1 Responsible Party

No actions were undertaken by the responsible party.

2.2 State and Local Agencies

State and local agencies were not directly involved in the construction of the fence.

2.3 Federal Agencies

The action taken by U.S. EPA prevents casual access by the public to the site. The long-term action at this site is still being evaluated.

3.0 Problems Encountered

In general, the removal proceeded smoothly and no major problems were encountered by the U.S. EPA, or ERCS.

4.0 No recommendations can be made.

Appendices

Appendix A - Action Memorandum
B - Delivery Order
C - Polreps
D - Daily Work Order
E - Daily Summary CERCLA Cleanup
F - EPA 1900 - 55's Contractor Services
G - Incident Obligation Log
H - Site Log
I - Photograph Log
J - Safety Plan
K - Miscellaneous Materials
L - U.S. EPA Computer Cost Report (June 9, 1988)