

CORRESPONDENCE/MEMORANDUM**State of Wisconsin**Department of Natural Resources
Bureau of Solid and Hazardous Waste Management

DATE: March 17, 1994

TO: Joe Brusca, SD

FROM: Tom Eggert *TE*

SUBJECT: Explanation of Significant Differences for Oconomowoc Electroplating Site
in Ashippun Wisconsin

I have enclosed a copy of the ESD for the site in Ashippun for your files. EPA expects to begin work in the contaminated wetland in mid-summer, and the DNR will be rechanneling Davy Creek through the lower wetlands complex beginning in fall. Bob Hansis and Andy Nelson continue to be involved in activities at the site. If I can provide any additional information, please let me know. I can be reached at 264-6012.

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EXPLANATION OF SIGNIFICANT DIFFERENCES

OCONOMOWOC ELECTROPLATING COMPANY, INC. SITE ASHIPPUN, WISCONSIN

I. INTRODUCTION

The 10.5 acre Oconomowoc Electroplating Company, Inc. site ("OECI") is comprised of the 4 acre site of a former electroplating facility located at 2572 Oak Street, Ashippun, Wisconsin and 6.5 acres of an adjacent wetlands area located to the southwest of the former facility. The 4 acre OECI facility consisted of a main building which housed the office and process lines; a wastewater treatment building (to the west); parking area (to the north and east); two formerly used wastewater treatment lagoons (to the south) which are still on site; various storage tank and container deposit areas; a fill area and a lowlands area between the main building and adjacent property. The electroplating facility was demolished and removed in May 1992. Davy Creek runs through the adjacent wetlands.

The U.S. Environmental Protection Agency (EPA) and the Wisconsin Department of Natural Resources (WDNR) are the lead and support agencies, respectively, for the conduct of the remedial action at OECI under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601, et seq. In September 1990, the EPA issued a Record of Decision (ROD) which outlined the remedy selection process and the selected cleanup actions for the OECI site broken down into four operable units. The State concurred with the selected remedy. In September of 1991, the EPA issued its first Explanation of Significant Differences for this site, which changed the scope of Operable Unit Two and created a new Operable Unit Five of the former electroplating building. This document provides a discussion of significant changes to the selected cleanup action in Davy Creek/Wetlands area, Operable Unit Four.

II. REQUIREMENT TO ADDRESS SIGNIFICANT CHANGES

The lead agency (in this case, EPA) may determine that a significant change to the selected remedy described in the ROD may be warranted after the ROD is signed. Section 117(c) of CERCLA, requires that:

After adoption of a final remedial action plan [ROD]-

- (1) if any remedial action is taken,
- (2) if any enforcement action under section 106 is taken, or
- (3) if any settlement or consent decree under section 106 or section 122 is entered into, and if such

action, settlement, or decree differs in any significant respects from the final plan, the [EPA] shall publish an explanation of the significant differences and the reasons such changes were made. (42 U.S.C. §9617(c)).

In accordance with Section 117 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), Section 300.435(c)(2)(i) of the National Contingency Plan, and OSWER Directive 9355.3-02 (Interim Final Guidance on Preparing Superfund Decision Documents), U.S. EPA in consultation with WDNR has determined that the changes made to the interim remedy constitute a significant change to the remedy selected in 1990 ROD. Because none of these changes fundamentally alter the remedy selected in the ROD, U.S. EPA has determined that a formal public comment period is not necessary. However, at a public meeting at the Town Hall in Ashippun, Wisconsin on November 1993, all proposed changes were explained. No written comments were received as a result of the meeting.

This document shall become part of the administrative record file which is available for viewing at the F&M Bank, Ashippun, Wisconsin and at the EPA regional offices in Chicago, Illinois during normal business hours.

III. BACKGROUND

A. Site History

The OECI facility operated from 1957 until its closing in February 1991. Electroplating and finishing processes performed at the facility utilized nickel, chromium, zinc, copper, brass, cadmium, and tin. The wastewaters formerly generated at OECI consisted of cyanide-bearing, chromium-bearing, and acid or alkaline solutions. Degreasing operations were also performed in conjunction with the electroplating process; as a result, a number of volatile organic compounds have contributed to the waste stream, including 1,1-dichloroethane, chloroform, 1,2-dichloroethane, and trichloroethene.

Prior to 1972, untreated wastewaters were discharged directly into the wetlands area south of the OECI property. In 1972, OECI constructed two unlined settling lagoons to supplement a wastewater treatment system (discussed below). Each lagoon is 60 foot long by 40 foot wide with a sidewall depth of 5 feet. The walls are concrete on two sides and sloped gravel on the others. Over the years, both lagoons accumulated large volumes of plating sludges. In the past, untreated plating sludges overflowed the settling lagoons and accumulated in the wetlands between the OECI facility and Davy Creek.

Later, OECI utilized a wastewater treatment plant to treat effluent from its many electroplating processes. In November 1973, after installation of the wastewater treatment system, a

Wisconsin Pollution Discharge Elimination System (WPDES) Permit was issued for discharging treated wastewater to Davy Creek. However, WDNR has documented numerous spills from the wastewater treatment unit. In August 1978, OECI was denied a WPDES Permit by the WDNR; however, since the facility had appealed the denial it was still operational and discharging wastewater to Davy Creek.

In 1980, OECI contracted to remove the lagoon sludge; approximately one million pounds of sludge were removed and disposed. The removal was not completed, however, and the lagoons currently are approximately one-third full of the electroplating sludge.

In 1983, in order to alleviate the local flooding problem, the Dodge County Drainage Board proposed to dredge and rechannel a 5,000 foot stretch of the Davy Creek near the OECI facility. However, the EPA and the U.S. Army Corps of Engineers disapproved the dredging proposal, believing that dredging would increase the migration of contaminated sediments from the wetlands into the Rock River.

During the summer of 1986, the Technical Assistance Team (TAT), a contractor to the USEPA Emergency Response Section, conducted a limited sediment sampling survey in the wetlands. The analytical results of these samples indicated high concentrations of metals and cyanide in the wetlands area immediately south of OECI. In March and April 1987, the TAT conducted an extensive sampling program which covered approximately 300 acres of wetlands along Davy Creek. This program also included sampling of the OECI sludge lagoons and soils at the ballpark located southeast of OECI. The analytical results indicated that approximately 75,000 square feet of the wetlands adjacent to OECI is contaminated with metals and cyanide associated with the facility's electroplating processes.

In December 1987, the U.S. Environmental Response Team (ERT) conducted a toxicity investigation in the wetlands south of the OECI site to determine if the contaminated sediments from the wetlands are toxic to aquatic organisms. The analytical results indicated severe metals and cyanide contamination of the sediments in the wetlands. As a result, the sediments from several locations were considered as being highly toxic. The toxicity data collected showed conclusively that the contamination in the wetlands was toxic to fathead minnows and algae.

EPA began a Remedial Investigation and Feasibility Study (RI/FS) in December 1987. The RI Report for three of the operable units, the lagoons, the contaminated soils adjacent to the manufacturing buildings and the ground water, was completed in March 1990. The FS was completed in July 1990.

B. Record of Decision

Due to the complexity of the site, the environmental problems were divided into four separate discrete actions or operable units (OUs). The ROD was signed on September 20, 1990. The building and underlying soil were described as in need of further investigation and become OU Five in the September 1991 Explanation of Significant Differences (ESD). The building removal and demolition were completed in May 1992 and the soil investigation was completed in July 1992. The operable units for the OECI site, as amended by the September 1991 ESD, are:

OU One: Includes the surface water, metal hydroxide sludge and contaminated soils associated with the two RCRA Subtitle C lagoons located behind the OECI facility.

OU Two: Includes all other contaminated soil around the OECI facility not associated with the RCRA lagoons. This includes the fill area, the lowlands area, the drainage ditches, beneath the manufacturing building and the parking lot.

OU Three: Includes the contaminated groundwater associated with the site.

OU Four: Addresses the most highly contaminated sediments in the Davy Creek/Wetlands area.

OU Five: Includes the manufacturing building

In the September 1990 ROD, OU One, OU Two and OU three were considered as final actions, while OU Four was classified as an interim action. The interim action for OU Four called for excavation of two feet of sediment in Davy Creek and the wetlands area adjacent to the former facility. The sediment was to be stabilized and disposed at a RCRA Subtitle C disposal Facility. Contaminated water was to be treated in accordance with WPDES discharge standards, with a filter system to be developed during design.

IV. SIGNIFICANT DIFFERENCES

The purpose of this document is to: (1) Redefine the area included in OU Four; (2) show that significant differences have occurred based on new information and that the removal of contaminated sediments in the wetlands adjacent to the former OECI facility and in Davy Creek, beginning at Lincoln Road and extending to the former POTW outfall be considered a final action instead of an interim action; (3) provide estimates for the sediment to be removed from the adjacent wetlands and the stretch of Davy Creek beginning at Lincoln Road and extending to the former POTW outfall; and (4) propose final sediment cleanup

levels for the adjacent wetlands and the stretch of Davy Creek beginning at Lincoln Road and extending to the former POTW outfall.

Cleanup Levels

EPA and WDNR have determined the cleanup levels for the two metals of concern and cyanide to be the following:

Cyanide	4 mg/kg
Nickel	54 mg/kg
Copper	85 mg/kg

These cleanup levels will be used to define the areal extent of contamination within the adjacent wetlands area.

The cleanup levels were derived from the September 1992 Sediment Risk Assessment for Chironomus sp. (midge Larvae) and Odocoilus Virginiana (white tail deer) and the January 6, 1992 Final Ecotoxicological Report. Both of these documents are available at the F&M Bank, Ashippun, Wisconsin and at the EPA Regional Office in Chicago, Illinois, during normal business hours.

The above cleanup levels were derived by determining the lowest observed adverse effect level (LOAEL) the contaminants had on the midge larvae. Other organisms were tested as part of the risk assessment with varying results. The LOAEL for Hyalella azteca (water flea) approached background concentrations. Daphnia magna was not affected by the contaminated sediment. The LOAEL for the midge larvae was used as the cleanup levels as opposed to the water flea since it is more likely for the midge larvae to inhabit the wetlands than the water flea.

Operable Unit Four - Final Action

OU Four was considered an interim action when the September 1990 ROD was signed since it was unknown whether an ecological risk assessment could adequately determine numerical cleanup levels. The cleanup levels were to be based on bioassay work which was underway during development of the ROD. Since numerical cleanup levels were not available at the time the ROD was signed, volumes of sediment to be removed had to be roughly estimated. Now that the bioassay work is complete and final cleanup levels have been determined for the adjacent wetlands and Davy Creek from Lincoln Road to the former POTW outfall, EPA and the WDNR consider OU Four to be a final action.

Estimate of Sediments

EPA and the WDNR propose to remove approximately 4,000 cubic yards (cyd) of wetlands sediment and approximately 425 cyd of Davy Creek sediment to an off-site facility for treatment and disposal. The remedy for OU Four in the ROD estimated the sediment to be removed in the adjacent wetlands at 5,200 cyd and 750 cyd in Davy Creek, based on removing two feet of sediment and not backfilling the area. Based on the April 1987 and January 1991, Extent of Contamination Survey, which investigated the contamination in Davy Creek and the wetlands, the majority of metal contamination is in the vegetative mat and the top one foot of the sediment. Therefore, EPA and WDNR believe that one foot of sediment should be removed and the excavated area backfilled to an appropriate grade with highly organic soil. Some areas in the wetlands with high levels of contamination below the one foot level will also be excavated. The EPA and the WDNR have designated approximately 9 grid squares within the adjacent wetlands for additional excavation. The total depth of excavation for these grid squares will be two feet rather than one foot. The areal extent of dredging in the adjacent wetlands and Davy Creek are shown on Figure 1.

Initially, floating vegetation and the vegetative mat will be removed and stockpiled. Testing will be done to determine how this vegetative layer will be managed. Subsequently, sediment will be excavated. The excavated and dredged sediment will be dewatered with belt filter presses. The system will consist of a storage/settling tank, precipitation via chemical addition and/or pH adjustment. The solids will then be removed via mechanical filtration using either a clay or sand filter system. The sludge is then returned to the filter process operation for further processing and eventual off-site disposal. Next the water is pumped into a post treatment process which could include either deionization or reverse osmosis. Then the water will be pumped through a series of carbon filtration units for final polishing and removal of organics. The water is stored in one of two modular tanks where it is analyzed and held until discharge into Davy Creek and the wetlands through a series of distribution pipes. All excavated sediment will be disposed at an off-site RCRA Subtitle C facility consistent with the requirements of the September 1990 ROD.

After completion of sediment excavation, the adjacent wetlands will be restored. Wetlands restoration will consist of hydroseeding or reseeding with the existing uncontaminated vegetation or an appropriate seed mixture in the excavated areas. EPA and WDNR also agree that the area of excavation will be maintained as a wetlands to ensure the protectiveness of the remedy.

Residual Risks and Additional Monitoring

Concentrations of contaminants below the backfill may exceed the cleanup levels when excavation is complete. However, the backfill will minimize the exposure route to wetlands species and to local residents. Therefore, the sediments below the backfill will not pose a risk. In addition, the metals remaining below the backfill will not pose a problem to groundwater. The metals are strongly bound in the sediments due to the tendency of metals to sorb to clay particles and the low solubility of metallic sulfides. Sulfur is a typical element found in wetlands sediment. The hydropunch results from the Predesign Engineering Report, September 1992 support this conclusion since metals in groundwater were either not detected or detected at low concentrations. The hydrogeologic work at the site also indicates that the adjacent wetlands is fed by groundwater as opposed to discharging to groundwater. Therefore, groundwater is not threatened by any metals remaining in the wetlands area after the remedial action is complete.

Dredging of Davy Creek will stop at the former POTW outfall. The area downstream from the former POTW outfall and extending to the Rock River will be monitored by EPA for the purpose of evaluating the extent and severity of any potential threats posed to ecological receptors. Figure 2 shows the area targeted for additional monitoring.

Since contamination will remain on-site above the levels that allow for unlimited use and unrestricted exposure, the five year review requirements in CERCLA would apply to the site.

V. AFFIRMATION OF STATUTORY DETERMINATIONS

Considering the new information that has been developed and the changes that have been made to the selected remedy, EPA and the WDNR believe that the remedy remains protective of human health and the environment, complies with federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

VI. STATE COMMENT

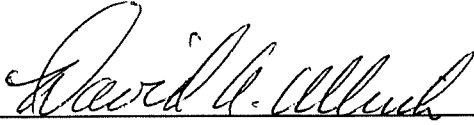
The State concurs with this ESD. This ESD, as well as other documents developed during the design phase, including the design plans are available in the public information repositories listed on page 2.

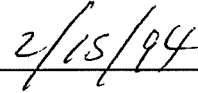
VII. PUBLIC COMMENT


While public comment is not considered necessary, (see page 2), a public meeting was held to explain the changes described in the ESD. This ESD, as well as other documents developed during the design phase, including the design plans are available in the public information repositories listed on page 2.

VIII. ESD CONCURRENCE

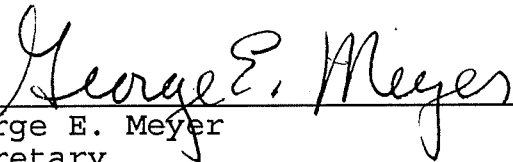
Based on the above discussion, I approve this ESD.





 Valdas V. Adamkus
Regional Administrator
U.S. Environmental Protection Agency

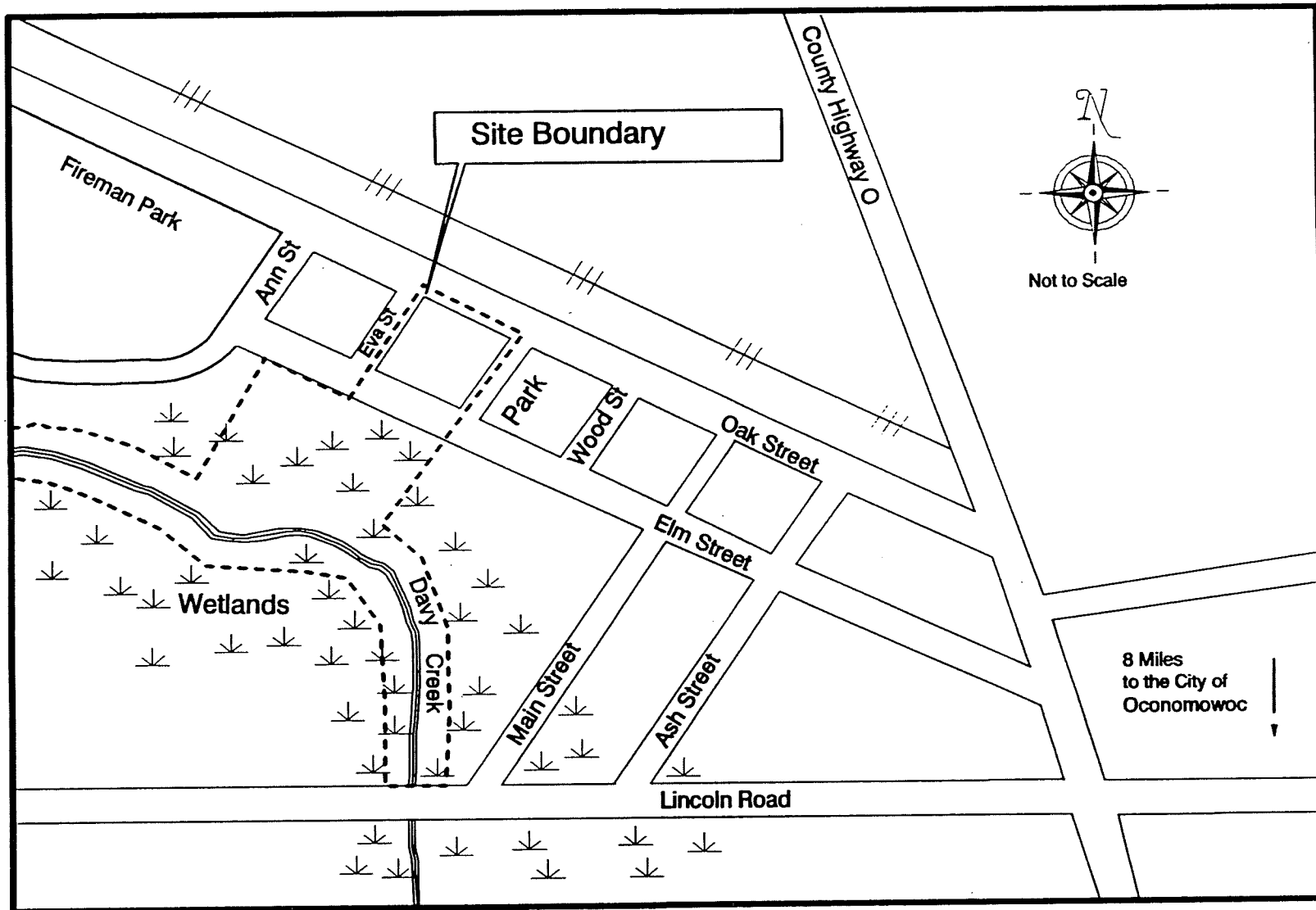
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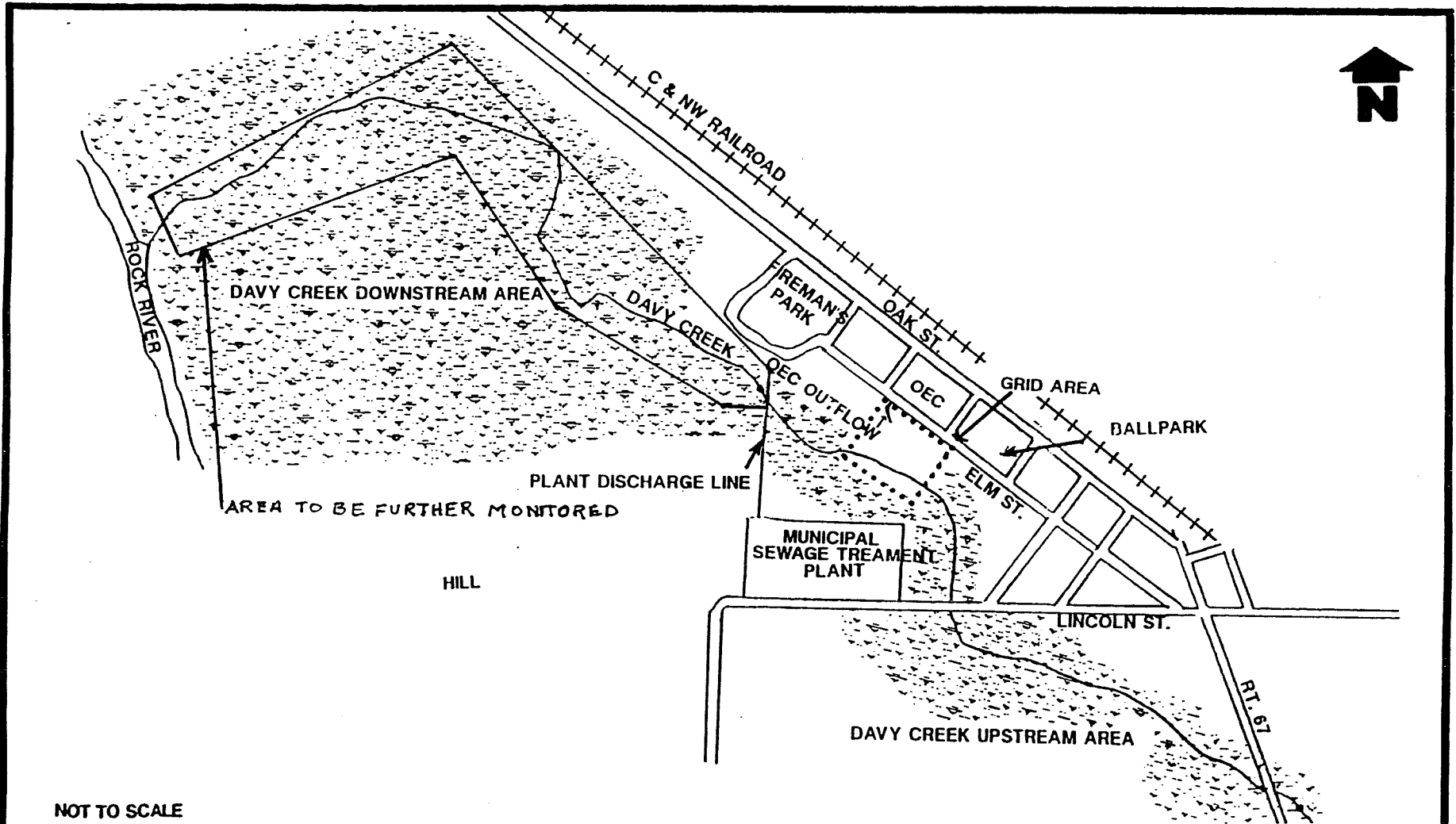
George E. Meyer
Secretary
Wisconsin Department of Natural Resources

Date



Oconomowoc Site Location Map

Figure 1



NOT TO SCALE

FIGURE 2
SITE MAP

OCONOMOWOC ELECTROPLATING COMPANY (OEC)/
DAVY CREEK WETLAND

ASHIPPUN, WI



DRAWN BY RADACK	DATE 10/21/87	PCS # 1221
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