State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southeast District
2300 N. Dr. Martin Luther King Jr. Dr.
Post Office Box 12436
Milwaukee, Wisconsin 53212
Telephone: 414-263-8500
Telefax: 414-263-8483

Carroll D. Besadny
Secretary

April 1, 1992

Donald York
Director of Environmental Controls
Chicago and Northwestern Transportation Co.
1 Northwestern Center
Chicago, IL 60185

SUBJECT: Case Closure Review / Butler Railroad Yard, Milwaukee Wisconsin

Dear Mr. York:

Gina Keenan asked me to review the file for the above referenced site to determine if further work is necessary in order to transfer the case to no further action required status.

According to the information provided to the Department from Aqua-Tech Inc., after tank removal and overexcavation of contaminated soil, lab results indicate less than ten parts per million contamination in the soils surrounding the former 10000 gallon underground storage tank. Groundwater pumped from the sump installed in the excavation did not contain levels of BTEX greater than the Preventive Action Limit.

The WDNR concurs with the recommendation made by Aqua-Tech that no further action is required at this site. However, should an environmental problem associated with the former underground storage tank become apparent in the future, the Department will require action to correct the situation.

The Department appreciates the actions you have taken to restore the environment at this site. If you have any questions regarding this correspondence, please contact Gina Keenan at 263-8669 or myself at 263-8655.

Sincerely,

John Sager
Environmental Specialist

Gina Keenan
Hydrogeologist,
Environmental Repair Section

cc. SED File
James Chesshire, Aqua-Tech

State of Wisconsin

CORRESPONDENCE/MEMORANDUM

Date: 3/26/92

To: File

File Ref. 4400

From: John Sager

Subject: Case Closure Review / Chicago Northwestern - Butler Yard

Reviewed: 03/07/90 Underground Storage Tank Closure Assessment
05/02/90 Phone call from Aqua Tech
04/20/90 R.P. Letter
06/28/90 Remedial Assessment

03/07/90 Remedial Assessment
-11/08/89 removed 10K fiberglass UnPb gasoline tank
-3600 gallons of water pumped from the excavation
-tank ruptured when it was being excavated, the water was pumped by National Tank Service
-a groundwater collection sump was installed in the excavation
-there was 25' of piping to the pump island
-tank located in an old building foundation
-approx. 100 gallons of product was released from the tank into the excavation
-contaminated soil was removed from the site on 11/09/89
-3600 gallons of product, water was pumped from the ex. in 2 truckloads
-ex. dimensions were 38x16x11
-three soil samples taken from the walls of the excavation
-results indicate <10ppm TPH contamination
-PID results for the floor indicate ND
-groundwater sample was collected from the ex. showed high levels of BETX contam.
-B-500ppb, T-1650ppb, E-194ppb, X-3000ppb

06/27/90 Remedial Assessment
-04/26/90 225 gallons water pumped from the excavation
-after recharge the water in the collection sump was sampled
-groundwater was approx. 7'bgs.
-sample indicates ND >1ppb. BTEX
-contaminated soil transported to Parkview Landfill
-piping was removed 5/11/90
-PID registered ND along the piping and at the dispenser
-samples were taken at the midpoint of the piping and at the dispenser

Documentation:
-Doc. received from National Tank for the removal of the water
-DIHLR Inventory form is in the file
-chain of custody for the samples o.k.
-holding times: 15 days

-bill of lading for the water removed is in the file
-chain of custody for the water sample o.k., holding times 19 days to the time of the report, there is no date analyzed
-chain of custody for the pipe and disp. samples o.k.
-holding times for these samples 14 days

Questions:
-where was the rest of the foundation in relation to the tank?
-there were no lab samples taken from the floor of the excavation?
-holding times of 15 days (this was in 1989)
-how much soil was removed from the ex.
-what were the soil types encountered during the excavation

--Considering the age of this file and the relatively good report and documentation, this file should be closed.

PHASE II ENVIRONMENTAL ASSESSMENT
Of Property At

NORTH 119TH STREET AND HAMPTON AVENUE
"BUTLER YARD"
WAUWATOSA, WISCONSIN

Prepared For

CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY
165 North Canal Street
Chicago, Illinois 60606

October 1991

By

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC.
Consulting Engineers
345 North 95th Street
Milwaukee, Wisconsin 53226
(414) 259-1500

Environmental Services Division

Project No. 917505

GRAEF
ANHALT
SCHLOEMER & ASSOCIATES INC. CONSULTING ENGINEERS

MILWAUKEE ENGINEERING CENTER
345 North 95th Street
Milwaukee, Wisconsin 53226
Telephone (414) 259-1500
FAX (414) 259-0037

October 29, 1991

Mr. Don York
CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY
165 North Canal Street
Chicago, IL 60606

Re: Phase 2 Environmental Assessment Report
Butler Yard, Wauwatosa, Wisconsin

Dear Mr. York:

Please find enclosed a draft copy of the environmental assessment report which Graef, Anhalt, Schloemer & Associates Inc. (GAS) has prepared for the C&NW property near North 119th Street and Hampton Avenue in Wauwatosa, Wisconsin, known as the "Butler Yard." The assessment was conducted under the contract between C&NW and GAS dated July 10, 1991.

Briefly, the investigations entailed the drilling and sampling of nine soil borings, sampling of three groundwater monitoring wells, analysis of collected samples, and an evaluation of collected data. The purpose of the studies was to determine if contamination existed on site from potential sources identified in a previous study.

Three groundwater samples were analyzed for priority pollutant organics and eight heavy metals. Except for nitrates and nitrites in one sample, all of the results were below the laboratory detection limits.

Twelve discreet soil samples were tested for the eight heavy metals, total organic halogens (TOX), total petroleum hydrocarbons (TPH), and polynucleic aromatic hydrocarbons (PAHs). Soil samples from four separate locations were also analyzed for polychlorinated biphenyls (PCBs). All results for TOX and PCBs were less than detection limits.

The most severe organics contamination, in decreasing order, was identified in three locations: near tracks in the north-central portion of the site where black staining was evident; near the northern border of the property; and near the northeast site boundary, where waste oil, barrels, and a fuel tank were located. Total PAHs were as high as 4 parts per million (ppm), and TPH values ranged from nearly 200 to 1000 ppm.

Highest values for heavy metals also occurred in samples taken near the two barrel storage areas, and from near the northern site border. However, these highest levels were within the same order of magnitude of the lowest levels detected.

It is expected that the WDNR, upon receiving notification of the nature and quantity of materials identified in the soil samples, may require some type of action.

Typically, they would require first defining the extent of contamination, followed by possible remediation.

The highest levels of contamination detected occurred in samples retrieved from 1 to 5 feet below ground surface. However, the data was insufficient to assess its depth and lateral extent. Additional testing would be required to further define the extent of soil contamination and to evaluate potential remediation scenarios. If contamination is primarily located within the upper several feet, excavation and disposal or treatment of affected materials may be a reasonable option.

Since no heavy metals or priority pollutant organics contamination was identified in any of the groundwater samples, it is not expected that additional groundwater testing would be necessary.

Finally, proper abandonment of the three groundwater monitoring wells will be required if they are no longer to be utilized. Also, development water extracted from the wells must be disposed of.

If you have any questions or require further information, please feel free to contact our office. It was a pleasure to work for you on this project.

Sincerely,

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES INC.

Deborah L. Itzov Goehner
Senior Project Engineer

Timothy J. Hanson/DLG

Timothy J. Hanson
Environmental Specialist

enc.

CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY

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APPENDICES

EXECUTIVE SUMMARY

This Phase II Environmental Site Assessment was prepared under the contract between C&NW and GAS dated July 10, 1991. The subject property is an approximately 9.75 acre parcel located on the east side of the 4600 block of North 119th Street, Wauwatosa, Wisconsin, formerly utilized by C&NW for unloading "piggy-back" rail cars.

Briefly, the investigations entailed the drilling and sampling of nine soil borings, sampling of three groundwater monitoring wells, analysis of collected samples, and an evaluation of collected data.

The site was found to be underlain primarily by brown to gray clays, with silts, sand and gravel, and brown silty sand and gravel, to depths of 11-21 feet. Groundwater flow at the time of this study was estimated to be to the east-southeast, with a gradient of approximately 1 foot per 100 feet.

The three groundwater samples retrieved were analyzed for priority pollutant organics and eight heavy metals. All of the results were below the Preventive Action Limit specified in the Wisconsin Administrative Code, NR 140, Public Health Related Groundwater Quality Standards.

Twelve discreet soil samples were tested for the eight heavy metals, total organic halogens (TOX), total petroleum hydrocarbons (TPH), and polynucleic aromatic hydrocarbons (PAHs). Soil samples from four separate locations were also analyzed for polychlorinated biphenyls (PCBs).

All of the results for TOX and PCBs were less than the detection limits. Diesel, unspecified oil, and PAHs were detected in samples collected from the northern and central portions of the site. The highest levels of these types of organic compound contamination were from 1-3 feet. In one sample, diesel was detected at a level of nearly 1000 parts per million (ppm), while naphthalene and phenanthrene were detected in the range of 1 to 4 ppm, respectively.

The highest heavy metals concentrations were also observed in samples from the north-central portion of the site, at depths of 1-3 and 9-11 feet. These highest levels, nevertheless, were within the same order of magnitude as the lowest levels.

I. INTRODUCTION

Graef, Anhalt, Schloemer & Associates Inc. (GAS) was retained by the Chicago & Northwestern Transportation Company (C&NW) to conduct a Phase II environmental site assessment of the property near North 119th Street and Hampton Avenue in Wauwatosa, Wisconsin, known as the "Butler Yard" (See Figure 1, Site Location Map).

The purpose of this investigation was to provide information and data so that groundwater flow, and levels and potential sources of contamination could be more clearly defined prior to its pending sale. In this report are the results of these studies.

II. SCOPE OF WORK

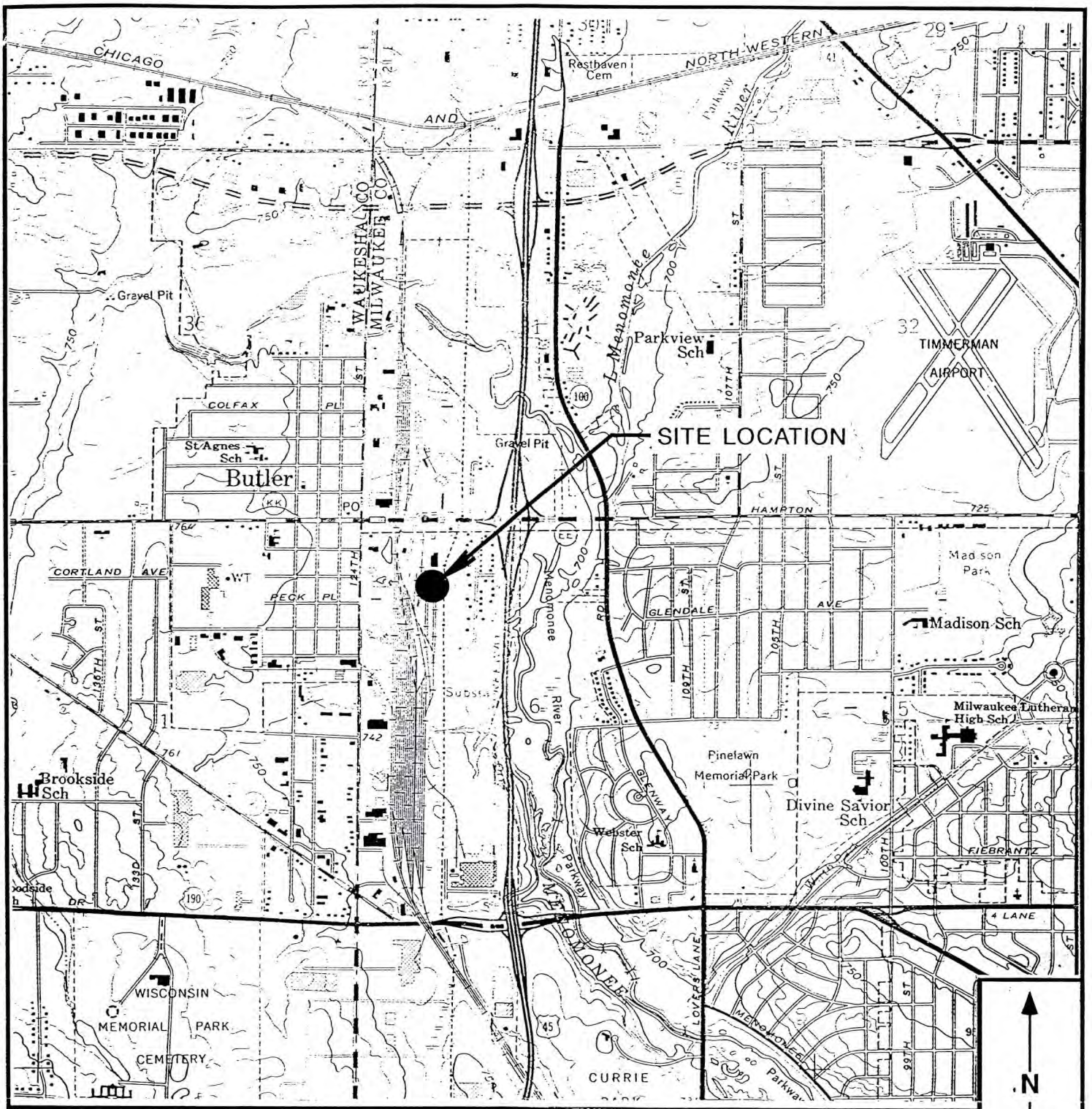
Work was performed in accordance with the scope outlined in the contract between GAS and C&NW dated July 10, 1991 (Appendix A), with minor modifications. Briefly, the investigation was performed by determining the locations of nine soil borings, observing the drilling of and retrieving soil samples from these boreholes, observing the installation of and retrieving groundwater samples from three groundwater monitoring wells, submitting soil and groundwater samples for analytical testing, and evaluating all collected data.

Based on observations during boring activities, the number and depth of borings was revised from the original plan to obtain more useful data. Rather than retrieving soil samples from six borings drilled to approximate depths of 25 feet, samples were retrieved from three deep borings (to approximately 20 feet), and six shallow borings (to approximately 11 feet), for a total of nine soil borings.

III. PROPERTY DESCRIPTION AND BACKGROUND

A. Boundaries and Usage

The approximate 9.75 acre parcel lies within the southwest quarter of the northwest



SOURCE: 1976 USGS MENOMONEE FALLS AND WAUWATOSA, WISCONSIN 7.5 MINUTE QUADRANGLES

SITE LOCATION MAP

C&NW TRANSPORTATION COMPANY
BUTLER YARD
119TH AND HAMPTON

SCALE:	1" = 2000'
DATE:	10-29-91
PROJECT MGR:	DIG
DRAWN BY:	CML
JOB NUMBER:	917505
REVISION DATE:	

GRAEF ANHALT SCHLOEMER and Associates Inc.
CONSULTING ENGINEERS

917505DIG.D2

FIGURE 1

quarter of Section 6, Township 7 North, Range 21 East, in the City of Wauwatosa, Wisconsin. It is bordered by C&NW to the west, Tews Lime & Cement Company to the north, North 119th Street to the east, and Harley Davidson Motor Company to the south. Located in the 4600 block of North 119th Street, the property has been owned by C&NW since the early 1900's.

It is currently used for the storage of railroad supplies such as ties, rails, spikes, and waste oil from locomotive cleaning and repairs. In the past, the property was used as a location to transfer "piggy-back" trailers from flatbed rail cars to truck tractors. These operations reportedly ceased five to seven years ago.

B. Previous Studies

A Phase I Environmental Site Assessment was performed by GAS in October through November, 1990, for a potential purchaser of this site. In this study, several areas of potential environmental concern were identified.

Extensive surface staining and distressed vegetation were observed throughout the site. In some areas, especially in the central portion of the site between two sets of tracks, the soils appeared black and saturated. Preserved railroad ties were staged on the eastern portion of the site, and construction debris and large mounds of fill and other unknown materials were observed on the southern section of the site.

Based upon conversations with C&NW personnel, materials such as creosote, fuel oil, and diesel fuel were either stored or used on site. During the site visit, fifteen to twenty 55-gallon drums were observed on site. C&NW personnel indicated that a small percentage of these drums were used for the storage of waste oil at that time. Other drums were labeled as containing transmission fluid, diesel engine oil, and various other petroleum products. Most of these drums were primarily empty; however, some quantities of water, product or residual sludge were expected to remain.

Off-site activities identified as potential sources of contamination included railroad and industrial activities in the area. Possible contaminants from these sources could include polychlorinated biphenyls (PCBs), all types of petroleum based products, and miscellaneous cargo from leaking tank cars or other spills or releases.

IV. SAMPLING LOCATIONS

The subsurface investigation of this study consisted of the observation and sampling of nine soil borings, and the installation, development and sampling of three groundwater observation wells. These locations are depicted in Figure 2, Site Map. Prior to drilling activities, GAS personnel examined the site for areas that might represent probable sources of contamination.

Soil borings were placed in areas where signs of potential contamination were observed. A number of these potential areas for contamination included the following:

North portion of the site:

- One above ground diesel oil tank 30 feet southwest of MW-1
- Approximately 50 drums, which were apparently empty at time of investigation, directly adjacent to the north side of oil tank (first drum storage area)
- Twelve apparently empty drums located approximately 25 feet southwest of SB-2 (second drum storage area)
- Various sized stacks of preserved railroad ties--one of the largest in this area measured 250 feet long and 10 feet high, creosote-like odor observed in vicinity of piles.

Central portion of the site:

- Several large stacks of preserved railroad ties--two of the stacks measured over 200 feet long and 10 feet high.
- Distressed vegetation adjacent to asphalt coated sewer pipe which was stored on site
- Several low, mucky drainage areas with prevalent staining

South portion of the site:

- Iron oxide pellets covering surface surrounding tracks
- Several large piles of preserved railroad ties; the largest stack was approximately 260 feet long and 10 feet high
- A disposal area for building and road construction materials

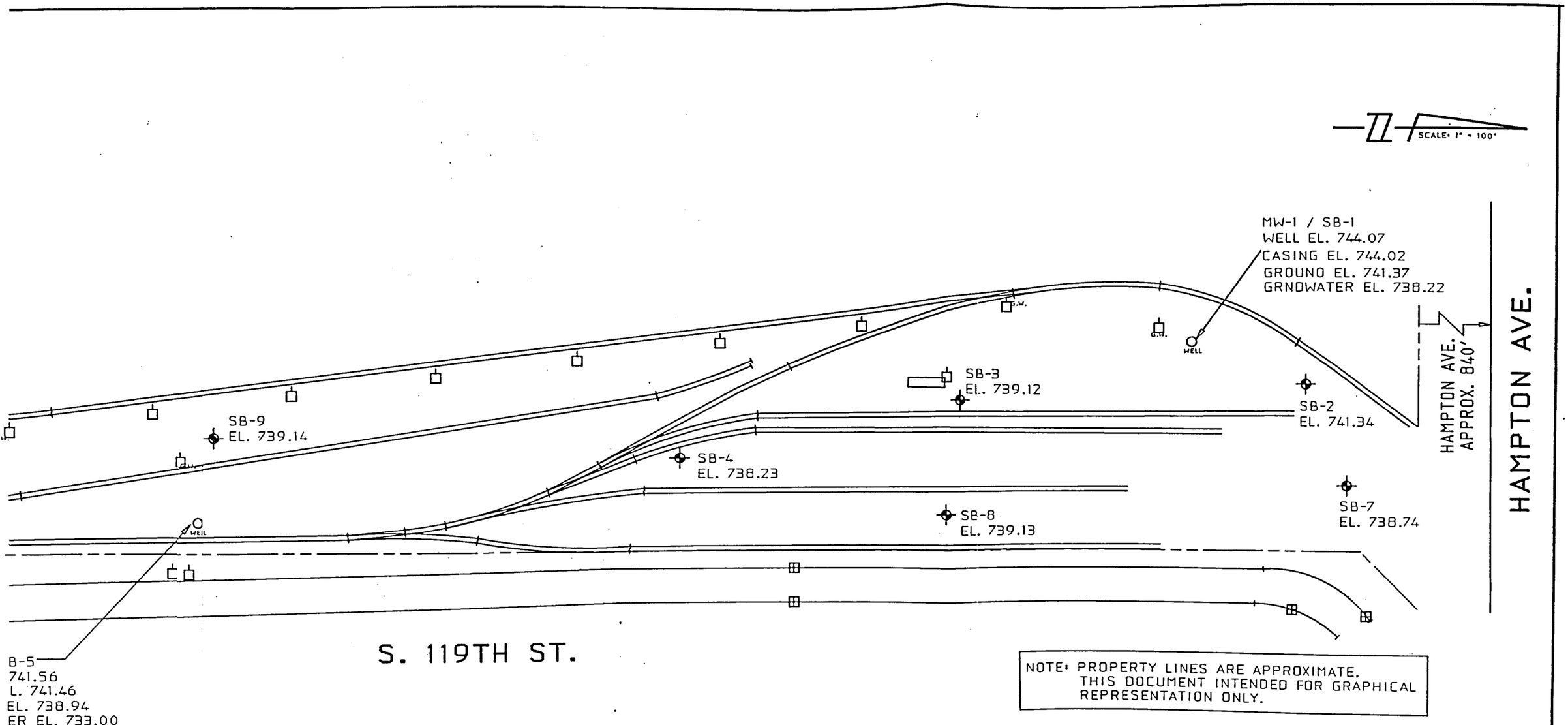
Based on background information of the site as well as the initial qualitative observations on July 25, 1991, a total of nine soil boring and three monitoring well locations were identified. All nine borings were placed in areas of potential concern: five on the northern half of the site, two in the middle of the site, and two on the southern half of the site. The three monitoring wells were placed in each of these three areas, and were offset in their placement from east to west.

V. SOIL BORINGS

A. Boring and Sampling Activities

The soil borings, SB-1 through SB-9, were drilled on July 25, 26 and 29, 1991, using a 6.25 inch outside diameter hollow stem auger, without the addition of drilling fluids. Drill cuttings were left on site next to each of the borings. Drill rods, augers, and all downhole tools were steam-cleaned prior to drilling, and between borings, to prevent cross contamination. SB-1, SB-5 and SB-6 were converted into monitoring wells MW-1, MW-2, and MW-3. Borings not converted into monitoring wells were abandoned by filling with granular bentonite to the surface. The boring logs and the borehole abandonment forms are in Appendix B. Monitoring well installation logs are in Appendix C.

Soil samples were collected continuously using a 2-foot long, 2-inch diameter split spoon sampler. The split spoon was washed with trisodium phosphate substitute solution and double rinsed between sample collection intervals.



NOTE: PROPERTY LINES ARE APPROXIMATE. THIS DOCUMENT INTENDED FOR GRAPHICAL REPRESENTATION ONLY.

C&NW TRANSPORTATION CO. SITE MAP BUTLER YARD 119TH & HAMPTON	DATE: 10-8-91 SCALE: 1"=100' JOB #: 917505 TMW

GRAEF ANHALT SCHLOEMER and Associates

FIGURE 2

Soil samples were field screened for organic vapors using a flame ionization detector. One to three samples from each boring were submitted for analysis of total petroleum hydrocarbons (TPH) content, polynucleic aromatic hydrocarbons (PAHs), total organic halogens (TOX), and the eight Resource Conservation and Recovery Act (RCRA) metals. Four soil samples were also taken for analysis of PCB content. Samples selected for laboratory analysis were taken from one of the following locations: where the highest field screening reading was observed, a location below that depth where the field OV reading was significantly lower, the water table interface, the base of the boring, or an unusual or suspicious strata.

B. Sample Handling

Soil samples retrieved from each split-spoon sample were halved. One portion of the sample was used for field screening, while the other half was reserved for possible laboratory analysis. The field screening samples were taken from the split spoon and placed into 8-ounce glass jars. The jars were covered with heavy duty aluminum foil, capped with a screw lid and agitated to break up soil clods. The samples were allowed to warm up for approximately 15 minutes. The outdoor temperature at the time was approximately 75°F.

Following vapor equilibration, the headspace portion of the field sample was field screened by removing the lid and inserting the tip of the FID through the aluminum foil. The highest instrument reading was recorded.

Samples reserved for laboratory analysis were placed in clean, 4-ounce laboratory sample jars with Teflon-lined caps, and tightly packed to minimize headspace volume and potential loss of volatiles. Laboratory samples were maintained in a cool environment (on ice or in refrigerator) prior to submittal with a chain-of-custody record to a State-certified laboratory.

C. Field Observations

Soil borings SB-1, SB-2, SB-6, SB-7, SB-8, and SB-9 were sampled to 11 feet, SB-4

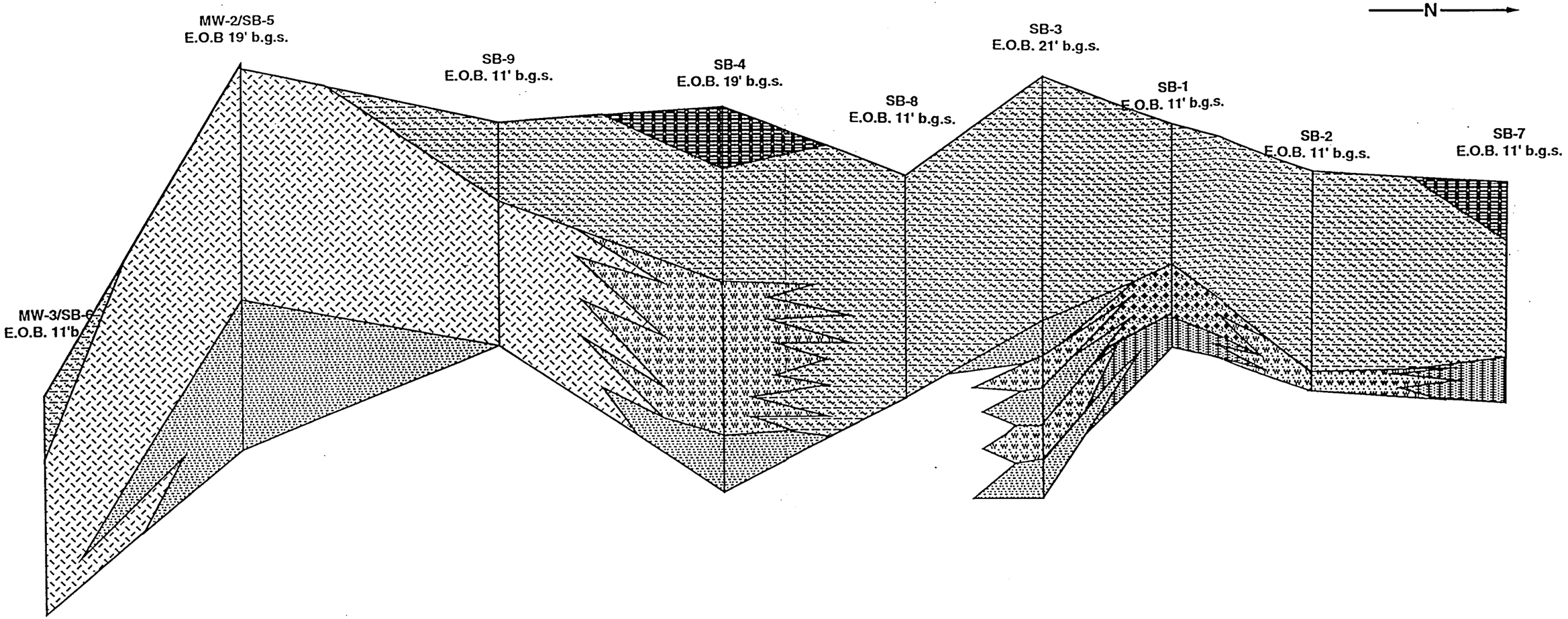
and SB-5 were sampled to 19 feet, and SB-3 was sampled to 21 feet. Water was encountered at 6-8 feet in SB-1, SB-5, SB-6, SB-7 and SB-9, at 10 feet in SB-4, and 13 feet in SB-3. No water was encountered while drilling in SB-2 and SB-8. Please refer to soil borings logs in Appendix B, and Figure 3, Geological Fence Diagram. Moderate black staining was observed at one to five feet in SB-6, SB-7 and SB-9. The materials encountered in SB-1, SB-2, SB-3, SB-8, SB-9 generally consisted of gray-brown clays with varying amounts of sand, gravel and silt in a zone from 1-12 feet. SB-4 and SB-7 both contained a layer of black to black-gray clay at 1-3 feet which overlay brown-gray clays. SB-5 contained sand and gravel from 1-12 feet, and SB-6 contained sand and gravel from 1-3 feet. A slight petroleum like odor was also encountered in SB-1 from 2-7 feet.

D. Field Screening

Soils were field screened for organic vapors (OVs) using a Century Organic Vapor Analyzer Model OVA 128. The OVA is a portable device capable of detecting trace quantities of organic vapors in the parts per million range. The OVA is a flame ionization detector (FID), similar to those used in laboratory gas chromatographs, which uses hydrogen flame ionization for detection and measurement of organic vapors. The instrument produces a response to an unknown sample, which is related to an equivalent gas of known composition to which the instrument has previously been calibrated, in this case, to methane. The OVA measures concentrations of OVs in instrument units (i.u.). Field screening readings are summarized in Table 1.

Soil boring SB-1 had the highest quantity of OVs detected across the site, with readings as high as 300 i.u. at 3-5 feet below ground surface (bgs) and 296 i.u. at 5-7 feet bgs; a slight petroleum-like odor was also observed in this boring from 2-7 feet bgs. SB-1 was situated next to an aboveground oil tank and the first drum storage area. OV readings were also high in SB-7, the northern-most sampling location, at 1-3 feet bgs.

SB-2 to SB-9 had relatively low levels of OVs detected during field screening of soils, with readings of 20 i.u. or less.



KEY

- GRAY SILT W/ TRACE SAND
- F-M BROWN SAND W/SOME GRAVEL
- BROWN LEAN CLAY W/TRACE GRAVEL
- TOPSOIL
- TOPSOIL W/BACKFILL
- GRAY TO BROWN STIFF CLAY W/SILT & GRAVEL
- BLACK CLAY W/GRAVEL
- BROWN CLAY W/SAND & GRAVEL
- BROWN SILTY SAND & GRAVEL
- GROUNDWATER TABLE LOCATION - INFORMATION BASED ON SOIL BORING DATA

GEOLOGICAL FENCE DIAGRAM
C & NW TRANSPORTATION CO.
BUTLER YARD
WAUWATOSA, WISCONSIN

SCALE: N.T.S.
DATE: 10-15-91
PROJECT MGR: DIG
DRAWN BY: TMW
JOB NUMBER: 917505
REVISION DATE: 10-24-91

GRAEF ANHALT SCHLOEMER and Associates Inc.
CONSULTING ENGINEERS

FIGURE 3

TABLE 1

OVA FIELD SCREENING READINGS

CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY

North 119th Street and Hampton Avenue
Wauwatosa, Wisconsin

July 25, 26, 29, 1991

SOIL BORING NUMBER	DEPTH FEET	FID READING (PPM)	LABORATORY SAMPLE	PARAMETERS ANALYZED
SB-1	1-3*	25.		
	3-5	300.	SS-1	TOX, Metals, TPH, PAHs
	5-7	296.	SS-3	PCBs
	7-9	92.		
	9-11	20.	SS-2	TOX, Metals, TPH, PAHs
SB-2	1-3	1.8	SS-4	TOX, Metals, TPH, PAHs
	3-5*	1.3	SS-5	PCBs
	5-7	.3		
	7-9	.1		
	9-11	.6		
SB-3	1-3	.3		
	3-5*	.3		
	5-7	.6		
	7-9	.3		
	9-11	2.3	SS-6	TOX, Metals, TPH, PAHs
	11-13	.8		
	13-15	.6	SS-7	
	15-17	.3		
	17-19	1.1		
	19-21	.3		
SB-4	1-3	1.2		
	3-5*	.8		
	5-7	.4		
	7-9	.2		
	9-11	.6		
	11-13	2.3		
	13-15	10.		
	15-17	14.	SS-8	TOX, Metals, TPH, PAHs
	17-19	2.4		

* Water table encountered

TABLE 1 Cont.

SOIL BORING NUMBER	DEPTH FEET	FID READING (PPM)	LABORATORY SAMPLE	PARAMETERS ANALYZED
SB-5	1-3	2.2		
	3-5	4.4		
	5-7*	7.6	SS-9	TOX, Metals, TPH, PAHs
	7-9	7.2		
	9-11	7.2		
	11-13	5.0		
	13-15	5.6		
	15-17	7.0		
	17-19	9.2	SS-10	TOX, Metals, TPH, PAHs
SB-6	1-3	0.		
	3-5*	.2		
	5-7	2.4		
	7-9	5.2	SS-11	TOX, Metals, TPH, PAHs
	9-11	2.8		
SB-7	1-3*	200.	SS-12	TOX, Metals, TPH, PAHs
	3-5	10.	SS-13	PCBs
	5-7	3.		
	7-9	1.4		
	9-11	1.0		
SB-8	1-3	10.6	SS-14	TOX, Metals, TPH, PAHs
	3-5	.6		
	5-7	.4		
	7-9	.2		
	9-11	.2		
SB-9	1-3	0.	SS-16	PCBs
	3-5	.2		
	5-7	1.8		
	7-9	3.2	SS-15	TOX, Metals, TPH, PAHs
	9-11	2.6		

* Water table encountered

VI. GROUNDWATER MONITORING WELLS

In accordance with NR 141 of the Wisconsin Administrative Code, groundwater monitoring well construction and development forms were submitted to the Wisconsin Department of Natural Resources. A copy of the transmittal is in Appendix F.

A. Installation

Three monitoring wells, MW-1, MW-2, and MW-3 were installed in soil borings SB-1, SB-5 and SB-6, respectively (Figure 2) on July 26 and 29, 1991. The three boreholes were re-drilled using a larger 8.25-inch auger to facilitate the installation of the polyvinyl chloride (PVC) pipe through the auger and to prevent formation collapse. The three wells were installed to a depth of 14.5 feet, and were constructed of 2-inch diameter, Schedule 40 PVC pipe and screens. Well construction, the logs for which are in Appendix C, was as follows: a 10-foot long PVC well screen with 0.010 inch slots was connected to a half-foot end cap and a Schedule 40 PVC well casing. PVC sections were connected using internal threads. After the well casing was centered in the bore hole, a filter pack of Red Flint number 45-55 sand was constructed to approximately one foot above the well screen section. The filter sand was followed by one-half foot of Badger Mining-Silica fine sand. Bentonite granules were used for the bentonite seal to one foot below ground surface. Wells were completed with lockable steel casings cemented in the surface seal. Finally, the elevations of the wells were surveyed from a USGS datum mark located on the southeast rail of the U.S. Highway 45 bridge on Hampton Avenue to a fixed location within the property.

B. Development

Monitoring wells MW-1, MW-2, and MW-3 were developed and sampled on August 1 and 2, 1991, by GAS personnel. The monitoring wells were developed to remove fine-grained sediment from the well screen and filter pack, as well as to develop a hydrologic connection between the well and the surrounding formation. The wells were developed using dedicated PVC bailers. Monitoring wells were purged by removing a total of 105 gallons from MW-1, 80 gallons from MW-2, and 60 gallons from MW-3.

Water in all wells was described as turbid prior to development. After development, water clarity was described as slightly turbid in MW-1 and MW-2, and turbid in MW-3. Recharge in all three wells was described as rapid. Please refer to Appendices C and D for well development forms and sampling logs. The water purged during well development activities was stored on site in sealed, labeled, 55-gallon drums.

C. Sampling

All monitoring wells recharged for approximately 30 minutes before sampling. Samples were drawn using a dedicated PVC bailer.

No odor or sheen was observed during the sampling of MW-1, MW-2 or MW-3. Samples from the first two wells were described as light brown and slightly turbid, while the sample from MW-3 was characterized as tan and slightly turbid. The samples were decanted into laboratory supplied containers and vials using a bottom emptying device on the bailer to minimize loss of volatiles. Samples to be analyzed for volatile organic compounds (VOCs) were placed into 40 milliliter (ml) vials. Samples to be analyzed for RCRA metals (totals) were placed into a 950 ml amber jars. Samples to be analyzed for pesticides, PCBs, nitrates and nitrites, as well as acid fraction and base/neutral organic compounds were all placed into a 950 ml amber jars. All samples were unfiltered. Sample containers were stored on ice and submitted with a chain-of-custody form to a State-certified laboratory for analysis.

VII. LABORATORY ANALYSES

A. Methods

1. Groundwater

Groundwater samples were analyzed for the eight RCRA metals-total, by standard laboratory methods. In order to achieve detection limits in the range of Preventive Action Limits (PALs) listed in Wisconsin Administrative Code NR 140, Public Health Related Groundwater Quality Standards, the following instrumentation was utilized for these analyses: arsenic, cadmium, chromium, lead, selenium and silver, graphite furnace/atomic absorption (GFAA); barium, atomic absorption (AA); mercury, cold vapor/atomic adsorption (CVAA).

Organics analysis in groundwater was performed in accordance with the following methods: VOCs, EPA method 8021; acid and base/neutral compounds, EPA method 8270 aqueous; and pesticides and PCBs, EPA method 608 aqueous.

2. Soil

Metals analysis in soils was performed with the following instrumentation: arsenic and selenium, GFAA; barium, cadmium, chromium, lead and silver, AA; and mercury, CVAA. TPH in soils was analyzed using the California LUFT method, while TOX-extracted, was analyzed using EPA method 9020 (modified) and PAHs were analyzed using EPA method 8310.

B. Results

Laboratory reports and chain-of-custody documentation are in Appendix E.

1. Groundwater

Groundwater samples from all three wells were analyzed for nitrates and nitrites, the eight RCRA metals-total, VOCs, acid fraction and base/neutral organic compounds, and pesticides and PCBs. The only compounds above laboratory detection limits were nitrate and nitrite in MW-3 at a level of 7.2 milligrams per liter (mg/l).

2. Soil

Twelve discreet soil samples from the nine boreholes were analyzed for the eight RCRA metals-total, TOX-extractable, TPH, and PAHs. Four samples from four separate locations were also analyzed for PCBs. Analytical sample results are summarized in Table 2.

All of the results for cadmium, mercury and selenium were less than detection limits. Levels of silver in the twelve samples ranged from less than 2.2 milligrams per kilogram (mg/kg) to 2.5 mg/kg. Chromium levels ranged from 12 to 25 mg/kg, while lead and barium ranged from 6 to 38 mg/kg and 41 to 83 mg/kg, respectively.

TABLE 2
ANALYTICAL SAMPLE RESULTS
Chicago and Northwestern Transportation Company
119th and Hampton Avenue, Wauwatosa, Wisconsin
July 25, 1991

COMPOUND	SS-1	SS-2	SS-4	SS-6	SS-7	SS-8	SS-9	SS-10	SS-11	SS-12	SS-14	SS-15
Total Organic Halogens, mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Silver, AA, mg/kg	<2.4	2.5	<2.2	<2.5	<2.0	<2.4	2.4	<2.5	2.3	<2.2	<2.4	2.4
Arsenic, GFAA, mg/kg	6.4	3.4	12.4	8.2	4.0	5.7	3.0	6.4	7.8	2.5	2.4	2.6
Barium, AA, mg/kg	<50.0	<50.0	68.0	<50.0	<50.0	59.0	41.0	50.0	<50.0	83.0	<50.0	<50.0
Cadmium, AA, mg/kg	<2.4	<2.5	<2.2	<2.5	<2.0	<2.4	<1.8	<2.5	<2.3	<1.9	<2.4	<2.4
Chromium, AA, mg/kg	20.0	12.0	24.0	22.0	14.0	21.0	15.0	24.0	17.0	25.0	13.0	16.0
Lead, AA, mg/kg	26.0	38.0	11.0	13.0	9.4	11.0	26.0	15.0	29.0	11.0	6.3	25.0
Mercury, CVAA, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Selenium, GFAA,mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Gasoline, mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Diesel Fuel, mg/kg	181.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	927.0	<5.0
Oil, mg/kg	—	—	—	—	--	—	—	—	—	290.0	—	—
Acenaphthene, µg/kg	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	420.0	<20.0	<20.0
Acenaphthylene, µg/kg	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0
Anthracene, µg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Benzo(a)fluoranthene, µg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Benzo(b)fluoranthene, µg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Benzo(k)fluoranthene, µg/kg	<0.4	<0.4	5.5	2.3	4.8	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Benzo(a)pyrene, µg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Benzo(ghi)perylene, µg/kg	<2.0	<2.0	<2.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chrysene, µg/kg	<2.0	<2.0	<2.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dibenzo(a,h)anthracene, µg/kg	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Fluoranthene, µg/kg	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	430.0	<4.0	<4.0
Fluorene, µg/kg	6.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Indeno(1,2,3-cd)pyrene, µg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene, µg/kg	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	460.0	760.0	<20.0
Phenanthrene, µg/kg	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	1000.0	3900.0	<10.0
Pyrene, µg/kg	<4.0	<4.0	17.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	1600.0	<4.0	<4.0

— Not Reported
Highest Values are Underlined

Three samples had results greater than detection limits for the TPH analysis. Diesel fuel was detected at a level of 181 and 927 mg/kg in samples from SB-1 and SB-8, respectively. Oil, unspecified, was detected at a level of 290 mg/kg in SB-7. PCBs were not detected in any of the four samples analyzed.

Of the PAHs, the following were detected at levels of less than 20 micrograms per kilogram (µg/kg): fluorene in SB-1, pyrene in SB-2, and benzo(k)fluoranthene in SB-2 and SB-3. In SB-7, acenaphthene, fluoranthene, and naphthalene were detected at levels ranging from 400 to 500 µg/kg, and phenanthrene and pyrene were detected at 1000 and 1600 µg/kg, respectively. Finally, in SB-8, naphthalene was detected at 760 µg/kg, and phenanthrene was detected at 3900 µg/kg.

VIII. GROUNDWATER FLOW

Based on groundwater levels observed at the time of sampling in the three wells installed on site, groundwater was apparently moving to the east-southeast, with an approximate gradient of 1 foot per 100 feet. Please refer to Figure 4, Estimated Groundwater Flow.

IX. DISCUSSION

A. Inorganics Analysis

The highest heavy metals concentrations were observed in samples from the north-central portion of the site, at depths of 1-3 and 9-11 feet. These sampling locations were also those in which organics contamination was observed.

Arsenic, chromium and lead were detected in all twelve samples, while levels of silver and barium were either below detection limits, or slightly higher. Overall, results for each metal were all within the same order of magnitude.

SCALE: 1" = 100'

MW-1 / SB-1
WELL EL. 744.07
CASING EL. 744.02
GROUND EL. 741.37
GRNDWATER EL. 738.22

737
736
735
738

SB-3
EL. 739.12

SB-2
EL. 741.34

SB-9
EL. 739.14

SB-4
EL. 738.23

SB-8
EL. 739.13

SB-7
EL. 738.74

HAMPTON AVE.
APPROX. 840'

HAMPTON AVE.

S. 119TH ST.

-5
41.56
. 741.46
. 738.94
R EL. 733.00

NOTE: PROPERTY LINES ARE APPROXIMATE.
THIS DOCUMENT INTENDED FOR GRAPHICAL REPRESENTATION ONLY.

ESTIMATED GROUNDWATER FLOW DIRECTION

C&NW TRANSPORTATION CO. ESTIMATED GROUNDWATER CONTOURS AND GROUNDWATER FLOW BUTLER YARD 119TH & HAMPTON	DATE: 10-8-91 SCALE: 1"=100' JOB #: 917505 TMW

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ANHALT
SCHLOEMER
and Associates

FIGURE 4

There are currently no regulatory guidelines (except hazardous waste regulations) with which to compare levels of total metals in soils. Also, natural content of metals in soils varies widely. It is therefore difficult to interpret if the levels of heavy metals detected in the twelve soil samples analyzed are associated with site specific contamination (such as a spill or release) or local contamination (such as airborne lead), or are representative of natural levels.

B. Organics Analysis

According to laboratory personnel, laboratory methods employed were the most appropriate for the particular sample matrix and analysis requested. For example, PAHs in soil were analyzed utilizing EPA method 8310, a waste method which has a specific extraction procedure applicable for a soil matrix.

All of the PAH compounds identified in the soil samples are known to be associated with coal tar. Some of these compounds are also commonly related to diesel fuel (especially naphthalene), and to creosote or solvents used to thin creosote.

Three samples had detectable levels of TPH. Although not directly applicable, all levels were well over the Wisconsin regulatory guideline of 10 mg/kg TPH in soils for leakage from underground fuel or waste oil storage tanks.

Levels of organics contaminants detected by the laboratory in the soils samples did not apparently correspond to the field-screened FID readings. For example, the FID reading for SS-12 was 200 i.u., while laboratory values of TPH (oil) and PAHs (total) were nearly 300 and 3.5 mg/kg respectively. As a comparison, the FID reading for SS-14 was only 10.6 i.u., while TPH (diesel, which is typically more volatile than oil) and PAHs (total) levels were nearly 1000 and 5 mg/kg, respectively. It would therefore be difficult to predict levels of contaminants based on the field readings only. Also, this inconsistency may be evidence that there are other types of contaminants in the soil for which analyses were not performed.

X. CONCLUSIONS

Groundwater samples were analyzed for eight heavy metals and priority pollutant organics. None of the organic compounds were detected in the three samples, and all heavy metals levels were below regulatory limits.

Soil contamination identified on site included TPH, PAHs, and possibly heavy metals. However, because only limited tests were performed, and some of the data was incongruous, there may be other contaminants on site for which tests were not performed.

The highest levels of contamination identified were on the northern portion of the site. In decreasing order of severity, the samples with identified contamination came from borings SB-8, SB-7, SB-1, SB-2 and SB-3.

SB-1, SB-7 and SB-8 had contamination identified from both TPH and PAHs. The highest total PAHs readings (nearly 5 mg/kg) and the highest TPH readings (nearly 1000 mg/kg) were obtained from SB-8, in the north-central portion of the site. This sample was taken from 1-3 feet bgs.

Readings of nearly 4 mg/kg PAHs were also observed in the 1-3 foot bgs sample from SB-7, near the northern boundary of the property. Oil was detected at a level of 290 mg/kg in the TPH analysis of this sample, while barium and chromium were detected at the highest levels of all twelve samples (83 and 25 mg/kg, respectively).

Relatively low levels (less than 20 mg/kg) of benzo(k)fluoranthene, fluorene and pyrene were detected in SB-1, SB-2 and SB-3. These occurred with the highest readings for total arsenic (12.4 mg/kg) and lead (38 mg/kg), which were obtained in samples from SB-2, 1-3 feet, and SB-1, 9-11 feet, respectively.

APPENDIX A

EXHIBIT A
TO
AGREEMENT BETWEEN

CHICAGO & NORTHWESTERN TRANSPORTATION COMPANY, (OWNER)

AND

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC.(GASAI)

Dated [June 24], 19[91]

SECTION 1 - BASIC SERVICES OF GASAI

1.01 GASAI shall provide for OWNER professional consulting services in all phases of the Project to which this Agreement applies. These services will include serving as OWNER's professional representative for the Project, providing professional consultation and advice and furnishing customary environmental engineering services.

1.02 STUDY AND REPORT PHASE

After written authorization to proceed, GASAI shall:

A. Consult with OWNER to clarify and define OWNER's requirements for the Project and review available data.

B. Advise OWNER as to the necessity of OWNER's providing or obtaining from others data or services of the types described in Section 3, and assist OWNER in obtaining such data and services.

C. Identify and analyze requirements of governmental authorities having jurisdiction to approve the design of the Project and participate in consultations with such authorities.

D. Conduct the Phase II environmental assessment as outlined below:

1. Determination of locations of six soil borings and three groundwater observation wells.

2. Preparation of a site safety plan.

3. The observation of and collection of samples from six soil borings, to be completed by a drilling contractor. Field observations to include visual identification of soil type and moisture content.

4. Direction to drilling contractor to grout or backfill all bore holes not used for monitoring well installation with granular bentonite.

5. Field observation and screening of soil samples with field instruments capable of detecting the presence of volatile organic compounds (VOCs).

   Continuous soil samples will be extracted from the borings, and field-screened for the presence of VOCs. Samples taken from the depth where the highest concentration of VOCs is detected and where VOCs are first not detected may be submitted for TPH analysis. Other samples chosen for analysis will be from a representative strata of the fill material, from the soil/water interface, native material at the base of the boring, or any incongruous or suspicious strata.

6. Direction to drilling contractor as to location and construction of three groundwater observation wells and to complete each well with a lockable steel casing. Well installation depths are expected to average 10 to 20 feet below ground surface, based on regional information.

7. Observation of new monitoring well installation, development of wells, and collection of groundwater samples. Wells will be developed and sampled in accordance with State of Wisconsin Administrative Code NR 141.

8. Submittal of construction and sampling logs to the Wisconsin Department of Natural Resources (WDNR), in accordance with NR 141.

9. Field observations of groundwater samples for temperature, pH, specific conductance, appearance and odor.

10. Placement of all wastes (including, but not limited to, contaminated soils, groundwater, wash waters, disposable equipment, barrels, or any other contaminated devices) produced on site or used on site during the course of the PROJECT in appropriate containers for storage on site.

11. Surveying of well and borehole locations and elevations.

12. Submittal of soil and groundwater samples to State-certified laboratory for following analyses:

    - Resource Conservation and Recovery Act (RCRA) metals (total) - three groundwater samples

- EPA Priority Pollutant organics (VOCs, acid fraction and base/neutral compounds, and pesticides and PCBs) - three groundwater samples

- Nitrates and nitrites - three groundwater samples

- Resource Conservation and Recovery Act (RCRA) metals (total), extractable organic halides (EOX), total petroleum hydrocarbons (TPH), polynucleic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) - twelve soil samples

13. Preparation of report, including the following: a stratigraphic cross-section sketch of the site, if possible, based on one-site field observations; logs and descriptions of field activities and methods; an interpretation of field observations, screening and laboratory results; estimated groundwater flow direction; and conclusions. Recommendations as to further activities will be provided in a cover letter to the report.

F. Furnish two copies of the Study and Report documents and, upon CLIENT's request, review them with OWNER in a meeting either over the telephone or in person at GASAI's office.

G. It is anticipated that the assessment report can be issued within three weeks after the receipt of the laboratory results. The field work as outlined above is expected to take approximately one week to complete; standard laboratory turn-around times are two to three weeks. Faster turn-around times may be available at a premium charge of 150 to 200 percent, or as the laboratory may be able to accommodate.

H. GASAI's services under the Study and Report Phase shall be considered complete at the earlier of (1) the date when submissions for this Phase have been accepted by OWNER or (2) thirty days after the date when such submissions are delivered to OWNER for final acceptance.

APPENDIX B

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BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-1 WI UNIQUE WELL No. _____
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No. _____
DATE INSTALLED 7-25-91
SURFACE ELEVATION 744.07
WATER LEVEL 2.5 FEET BELOW SURFACE
GRID LOCATION _____
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 400	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							BACKFILL	
			4 6				GRAY TO BROWN CLAY WITH SOME GRAVEL AND SILT	
2	SS-1	20"	8 12	25				
			13 15					
4	SS-2	24"	28 25	300				LAB SAMPLE TAKEN SS-1
			9 13					
6	SS-3	24"	20 22	290				LAB SAMPLE TAKEN SS-3
			7 34				FINE TO MEDIUM BROWN SAND WITH SOME GRAVEL	
8	SS-4	12"	33 32	92				
			15 16				BROWN SANDY CLAY WITH SOME GRAVEL	
10	SS-5	8"	19 23	20				LAB SAMPLE TAKEN SS-2
							END OF BORING AT 11 FEET	
12								
14								
16								
18								

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BORING LOG

FACILITY NAME *C&NW TRANSPORTATION COMPANY*
DRILLED BY *J&J SOIL TESTING*
WELL NUMBER *SB-2* WI UNIQUE WELL No. _____
HOLE DIAMETER *6.25 INCHES*
SW 1/4 OF *NW* 1/4 OF SECTION *6* T *7N* , R *12E*
COUNTY *MILWAUKEE* COUNTY CODE *41*

LICENSE/PERMIT/MONITORING No. _____
DATE INSTALLED *7-25-91*
SURFACE ELEVATION *741.34*
WATER LEVEL *4.4 FEET BELOW SURFACE*
GRID LOCATION _____
CIVIL TOWN *WAUWATOSA*

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 10	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL AND BACKFILL	
							BROWN, STIFF CLAY WITH A TRACE OF GRAVEL	
2	SS-1	24"	8 8 7 11	1.8				LAB SAMPLE TAKEN SS-4
4	SS-2	24"	6 11 18 17	1.3				LAB SAMPLE TAKEN SS-5
6	SS-3	18"	9 15 17 20	.3				
8	SS-4	12"	9 14 18 26	.1				
10	SS-5	24"	5 10 19 47	.6			GRAY SILT WITH A TRACE OF SAND	
							END OF BORING AT 11 FEET	
12								
14								
16								
18								

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SCHLOEMER
and Associates Inc.

BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-4 WI UNIQUE WELL No. _____
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No. _____
DATE INSTALLED 7-25-91
SURFACE ELEVATION 738.23
WATER LEVEL 4.5 FEET BELOW SURFACE
GRID LOCATION _____
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 20	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL AND BACKFILL	
2	SS-1	13"	5 3 3 3	1.2			GRAY TO BLACK STIFF CLAY WITH A TRACE OF GRAVEL	
4	SS-2	24"	4 7 13 14	.8			GRAY TO BROWN CLAY WITH A TRACE OF SILT AND GRAVEL	▽
6	SS-3	21"	6 12 19 23	.4				
8	SS-4	24"	7 12 15 17	.2				
10	SS-5	14"	12 17 8 10	.6			GRAY SILTY SAND AND GRAVEL	
12	SS-6	20"	7 11 14 18	2.3				
14	SS-7	21"	12 23 13 11	10				
16	SS-8	24"	3 9 11 15	14				LAB SAMPLE TAKEN SS-8
18	SS-9	24"	15 14 15 16	2.4			GRAY STIFF CLAY	
							END OF BORING AT 19 FEET	

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BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-5/MW-2 WI UNIQUE WELL No.
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No.
DATE INSTALLED 7-26-91
SURFACE ELEVATION 741.56
WATER LEVEL 5.1 FEET BELOW SURFACE
GRID LOCATION
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 10	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL AND BACKFILL	
							BROWN TO GRAY SILTY SAND AND GRAVEL	
2	SS-1	18"	7 9 8 4	2.2				
4	SS-2	22"	5 5 7 6	4.4				
6	SS-3	24"	7 6 6 8	7.6				LAB SAMPLE TAKEN SS-9
8	SS-4	24"	2 8 10 11	7.2				
10	SS-5	24"	10 16 19 14	7.2				
12	SS-6	24"	3 6 8 9	5			GRAY CLAY WITH TRACES OF SAND AND GRAVEL	
14	SS-7	20"	5 6 7 7	5.6				
16	SS-8	24"	4 8 7 7	7				
18	SS-9	0"	4 5 6 8	9.2				LAB SAMPLE TAKEN SS-10
							END OF BORING AT 19 FEET	

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BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-6/MW-3 WI UNIQUE WELL No.
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No.
DATE INSTALLED 7-26-91
SURFACE ELEVATION 741.98
WATER LEVEL 4.6 FEET BELOW SURFACE
GRID LOCATION
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 10	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL	
							GROWN TO GRAY STIFF CLAY WITH A TRACE OF GRAVEL AND SILT	
2	SS-1	20"	4 6 5 7	0				SOME STAINING
							BROWN SILTY SAND AND GRAVEL	
4	SS-2	18"	4 4 3 3	.2				▽
6	SS-3	0"	4 5 7 7	2.4				
8	SS-4	0"	7 6 7 8	5.2				LAB SAMPLE TAKEN SS-11
10	SS-5	0"	4 8 10 13	2.8				
							END OF BORING AT 11 FEET	
12								
14								
16								
18								

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and Associates Inc.

BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-7 WI UNIQUE WELL No. _____
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No. _____
DATE INSTALLED 7-26-91
SURFACE ELEVATION 738.74
WATER LEVEL 1.2 FEET BELOW SURFACE
GRID LOCATION _____
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 300	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL AND BACKFILL	
2	SS-1	18"	3 4 / 6 5	200			BLACK CLAY WITH A TRACE OF GRAVEL	▽ VERY WET AND STAINED LAB SAMPLE TAKEN SS-12
4	SS-2	22"	4 7 / 10 13	10			BROWN TO GRAY STIFF CLAY WITH TRACES OF SILT AND GRAVEL	LAB SAMPLE TAKEN SS-13
6	SS-3	24"	6 9 / 13 17	3				
8	SS-4	24"	7 12 / 17 18	1.4			BROWN CLAY WITH TRACES OF SAND AND GRAVEL	
10	SS-5	24"	2 5 / 8 10	1				
12							END OF BORING AT 11 FEET	
14								
16								
18								

GRAEF
ANHALT
SCHLOEMER
and Associates Inc.

BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY — LICENSE/PERMIT/MONITORING No. _____
DRILLED BY J&J SOIL TESTING — DATE INSTALLED 7-29-91
WELL NUMBER SB-8 — WI UNIQUE WELL No. _____ — SURFACE ELEVATION 739.13
HOLE DIAMETER 6.25 INCHES — WATER LEVEL NONE OBSERVED
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E — GRID LOCATION _____
COUNTY MILWAUKEE — COUNTY CODE 41 — CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 20	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							BACKFILL WITH SOME GRAVEL	SOME CHARCOAL FOUND
							BROWN TO GRAY STIFF CLAY WITH TRACES OF SAND AND GRAVEL	
2	SS-1	16"	9 7 8 9	10.6				LAB SAMPLE TAKEN SS-14
4	SS-2	24"	4 4 6 9	.6				
6	SS-3	24"	4 9 13 18	.4				
8	SS-4	24"	7 14 22 23	.2				
10	SS-5	0"	6 12 17 24	.2				
							END OF BORING AT 11 FEET	
12								
14								
16								
18								

GRAEF
ANHALT
SCHLOEMER
and Associates Inc.

BORING LOG

FACILITY NAME C&NW TRANSPORTATION COMPANY
DRILLED BY J&J SOIL TESTING
WELL NUMBER SB-9 WI UNIQUE WELL No.
HOLE DIAMETER 6.25 INCHES
SW 1/4 OF NW 1/4 OF SECTION 6 T 7N , R 12E
COUNTY MILWAUKEE COUNTY CODE 41

LICENSE/PERMIT/MONITORING No.
DATE INSTALLED 7-29-91
SURFACE ELEVATION 739.14
WATER LEVEL NONE OBSERVED
GRID LOCATION
CIVIL TOWN WAUWATOSA

DEPTH FEET	SAMP. NO.	SAMP. REC.	BLOWS/6 IN 0/6 6/12	OVM (ppm)	OVM (ppm) 0 20	GRAPHIC LOG	GEOLOGIC DESCRIPTION	REMARKS
							TOPSOIL	
							BROWN SILTY CLAY WITH A TRACE OF GRAVEL	
2	SS-1	24"	1 2 / 3 5	0				LAB SAMPLE TAKEN SS-16
4	SS-2	22"	3 3 / 4 7	.2				
							BROWN SILTY SAND AND GRAVEL	STAINING
6	SS-3	23"	5 5 / 3 5	1.8				
8	SS-4	24"	8 8 / 10 11	3.2				LAB SAMPLE TAKEN SS-15
10	SS-5	0"	3 10 / 10 9	2.6				
							END OF BORING AT 11 FEET	
12								
14								
16								
18								

Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B
Rev. 7-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 [X] E [ ] W

(If applicable) --- Gov't Lot --- Grid Number

Grid Location --- ft. [ ] N. [ ] S., --- ft. [ ] E. [ ] W.

Civil Town Name: -----

Street Address of Well: -----

City, Village: -----

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: C&NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI.

Facility Well No. and/or Name (If Applicable): SB-1

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7-25-91

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify)

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) -- (From groundsurface) Casing Diameter (ins.) --

Casing Depth (ft.) --

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ----- Feet

(4) Depth to Water (Feet) 7.3'

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) Gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
ranular Bentonite	Surface	11.0'	1.5 bags	

Comments:

Name of Person or Firm Doing Sealing Work

Signature of Person Doing Work: [signature]
Date Signed: 7-29-91

Street or Route: 200 St. Paul
Telephone Number: ( )

City, State, Zip Code: Milwaukee, WI.

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

Department of Natural Resources

Form 3300-5B

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Rev. 7-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. ____ [X] E [ ] W

(If applicable) ----- Gov't Lot ----- Grid Number

Grid Location ----- ft. [ ] N. [ ] S., ----- ft. [ ] E. [ ] W.

Civil Town Name: -----

Street Address of Well: -----

City, Village: -----

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: C&NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, Wi.

Facility Well No. and/or Name (If Applicable): SB-2

WI Unique Well No.:

Reason For Abandonment: Finished sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7-25-91

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify)

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) --- Casing Diameter (ins.) ---
(From groundsurface)

Casing Depth (ft.) ---

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet)

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) Gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	110'	1.5 bags	

Comments:

Name of Person or Firm Doing Sealing Work

Signature of Person Doing Work: [signature]

Date Signed: 7-29-91

Street or Route: 200 St. Paul

Telephone Number: ( )

City, State, Zip Code: Milwaukee, WI.

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B
Rev. 7-89

abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 [X] E [ ] W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. [ ] N. [ ] S., _____ ft. [ ] E. [ ] W.

Civil Town Name: ------

Street Address of Well: -----

City, Village:

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: C&NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI.

Facility Well No. and/or Name (If Applicable): SB-3

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7-25-91

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) _____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) --- Casing Diameter (ins.) ---
(From groundsurface)

Casing Depth (ft.) ---

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ---- Feet

(4) Depth to Water (Feet) 13.5'

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain _____

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material

[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials

For monitoring wells and monitoring well boreholes only

[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	21.0'	2.0 bags	

Comments: _____

(9) Name of Person or Firm Doing Sealing Work

Signature of Person Doing Work: [signature]

Date Signed: 7-29-91

Street or Route: 200 St. Paul

Telephone Number: ( )

City, State, Zip Code: Milwaukee, WI.

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B

Rev. 7-89

abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 ☒ E ☐ W

(If applicable) --- Gov't Lot --- Grid Number

Grid Location --- ft. ☐ N. ☐ S., --- ft. ☐ E. ☐ W.

Civil Town Name: -----

Street Address of Well: -----

City, Village: -----

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: C&NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI.

Facility Well No. and/or Name (If Applicable): SB-4

WI Unique Well No.:

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7-25-91

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☐ Yes ☒ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify)

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) --- Casing Diameter (ins.) ---
(From groundsurface)

Casing Depth (ft.) ---

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? --- Feet

(4) Depth to Water (Feet) 10.0'

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☐ Yes	☒ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☒ Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	19.0'	2.0 Bags	

Comments:

(9) Name of Person or Firm Doing Sealing Work

Signature of Person Doing Work: [signature]

Date Signed: 7-29-91

Street or Route: 200 St. Paul

Telephone Number: ( )

City, State, Zip Code: Milwaukee, WI.

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected

District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B
Rev. 7-89

Abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 [X] E [ ] W

(If applicable) --- Gov't Lot --- Grid Number

Grid Location --- ft. [ ] N. [ ] S., --- ft. [ ] E. [ ] W.

Civil Town Name: ---

Street Address of Well: ---

City, Village: ---

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: C&NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI.

Facility Well No. and/or Name (If Applicable): SB-7

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date)

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify)

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) --- Casing Diameter (ins.) ---
(From groundsurface)

Casing Depth (ft.) ---

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? --- Feet

(4) Depth to Water (Feet) 6.2'

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [ ] Other (Explain)

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	11.0'	1.5 bags	

Comments:

(9) Name of Person or Firm Doing Sealing Work

Signature of Person Doing Work: [signature]
Date Signed: 7-29-91
Street or Route: 200 St. Paul
Telephone Number: ( )
City, State, Zip Code: Milwaukee, WI.

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

Department of Natural Resources | Form 3300-5B | WELL/DRILLHOLE/BOREHOLE ABANDONMENT | Rev. 7-89

Well abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 [X] E [ ] W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. [ ] N. [ ] S., ____ ft. [ ] E. [ ] W.

Civil Town Name

Street Address of Well

City, Village

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: C & NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI

Facility Well No. and/or Name (If Applicable): SB-8

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 7-29-91

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) ____

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) ____ Casing Diameter (ins.) ____
(From groundsurface)

Casing Depth (ft.) ____

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) ____

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain ____

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite

For monitoring wells and monitoring well boreholes only
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	11.0'	20 bags	

Comments: ____

Name of Person or Firm Doing Sealing Work: J&J Soil Testing Ltd.

Signature of Person Doing Work: [signature] Date Signed: 7-29-91

Street or Route: 200 St. Paul Telephone Number: ( )

City, State, Zip Code: Milwaukee, WI

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Milwaukee

SW 1/4 of NW 1/4 of Sec. 6 ; T. 7 N; R. 12 [X] E [ ] W

(If applicable) Gov't Lot ____ Grid Number ____

Grid Location ____ ft. [ ] N. [ ] S., ____ ft. [ ] E. [ ] W.

Civil Town Name

Street Address of Well

City, Village

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: C & NW Railroad

Street or Route: 119th & Hampton

City, State, Zip Code: Wauwatosa, WI

Facility Well No. and/or Name (If Applicable): SB-9

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Finished Sampling

Date of Abandonment: 7-29-91

WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Well/Drillhole/Borehole Construction Completed On (Date)

[ ] Monitoring Well
[ ] Water Well
[ ] Drillhole
[X] Borehole

Construction Report Available? [ ] Yes [X] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify)

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) ____ Casing Diameter (ins.) ____
(From groundsurface)

Casing Depth (ft.)

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) 7.8'

Pump & Piping Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Liner(s) Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Screen Removed?	[ ] Yes	[ ] No	[X] Not Applicable
Casing Left in Place?	[ ] Yes	[ ] No	

If No, Explain

Was Casing Cut Off Below Surface?	[ ] Yes	[ ] No
Did Sealing Material Rise to Surface?	[ ] Yes	[X] No
Did Material Settle After 24 Hours?	[ ] Yes	[X] No
If Yes, Was Hole Retopped?	[ ] Yes	[ ] No

(5) Required Method of Placing Sealing Material
[ ] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [X] Other (Explain) gravity

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[ ] Chipped Bentonite
[ ] Bentonite Pellets
[X] Granular Bentonite

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	11.0'	1.5 bags	

Comments:

Name of Person or Firm Doing Sealing Work: J&J Soil Testing Ltd.

Signature of Person Doing Work: [signature] Date Signed: 7-29-91

Street or Route: 200 St. Paul Telephone Number: ( )

City, State, Zip Code: lwaukee, WI

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

APPENDIX C

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: C & NW

Facility License, Permit or Monitoring Number:

Grid Location: ft. N. S. / ft. E. W.

Well Name: MW-1

Wis. Unique Well Number: DNR Well Number:

Type of Well: Water Table Observation Well 11; Piezometer 12

Distance Well Is From Waste/Source Boundary: ft.

Section Location: SW 1/4 of NW 1/4 of Section 6, T 7 N, R 12 E W

Date Well Installed: 07 / 29 / 91 (m m / d d / y y)

Well Installed By: (Person's Name and Firm): J&J Soil Testing (Eugene Lehman)

Is Well A Point of Enforcement Std. Application? Yes No

Location of Well Relative to Waste/Source: Upgradient; Sidegradient; Downgradient; Not Known

A. Protective pipe, top elevation 744.07 ft. MSL

B. Well casing, top elevation 744.02 ft. MSL

C. Land surface elevation 741.37 ft. MSL

D. Surface seal, bottom ft. MSL or 1.0 ft.

11. USCS classification of soil near screen: GP GM GC GW SW SP SM SC ML MH CL OL; Bedrock

12. Sieve analysis attached? Yes No

13. Drilling method used: Rotary 50; Hollow Stem Auger 41; Other

14. Drilling fluid used: Water 02; Air 01; Drilling Mud 03; None 99

15. Drilling additives used? Yes No

Describe:

17. Source of water (attach analysis):

E. Bentonite seal, top ft. MSL or 1.0 ft.

F. fine sand, top ft. MSL or 3.5 ft.

G. Filter pack, top ft. MSL or 4.0 ft.

H. Well screen, top ft. MSL or 14.0 ft.

I. Well screen, bottom ft. MSL or 14.5 ft.

J. Filter pack, bottom ft. MSL or 14.5 ft.

K. Borehole, bottom ft. MSL or 14.5 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.38 in.

N. I.D. well casing 2.03 in.

1. Cap and lock? Yes No

2. Protective cover pipe:
   a. Inside diameter: 3.75 in.
   b. Length: 5.0 ft.
   c. Material: Steel 04; Other
   d. Additional protection? Yes No
   If yes, describe:

3. Surface seal: Bentonite 30; Concrete 01; Other

4. Material between well casing and protective pipe: Bentonite 30; Annular space seal; Other

5. Annular space seal: Granular Bentonite 33; lbs/gal mud weight ... Bentonite-sand slurry 35; lbs/gal mud weight ..... Bentonite slurry 31; % Bentonite .... Bentonite-cement grout 50; .37 ft³ volume added for any of the above
   How installed: Tremie 01; Tremie pumped 02; Gravity 05

6. Bentonite seal: Bentonite granules 33; 1/4 in. 3/8 in. 1/2 in. Bentonite pellets 32; Other

7. Fine sand material: Manufacturer, product name and mesh size: Silica (Badger Mining)
   Volume added 25 lbs .22 ft³

8. Filter pack material: Manufacturer, product name and mesh size: Red Flint 45-55
   Volume added 5 bags 3.88 ft³

9. Well casing: Flush threaded PVC schedule 40 23; Flush threaded PVC schedule 80 24; Other

10. Screen material: PVC
    Screen type: Factory cut 11; Continuous slot 01; Other
    Manufacturer: Monoflex
    Slot size: 0.10 in.
    Slotted length: 10.0 ft.

11. Backfill material (below filter pack): None; Other

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature:

Firm: Graef, Anhalt, Schloemer & Associates Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form

tate of Wisconsin
epartment of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name
C&NW

Facility License, Permit or Monitoring Number

Grid Location
ft. ☐ N. ☐ S.
ft. ☐ E. ☐ W.

Well Name
MW-2

Wis. Unique Well Number | **DNR Well Number**

Type of Well Water Table Observation Well ■ 11
Piezometer ☐ 12

Section Location
SW 1/4 of NW 1/4 of Section 6
T 7 N. R 12 ☒ E ☐ W

Date Well Installed 07 / 25 / 91 (m m / d d / y y)

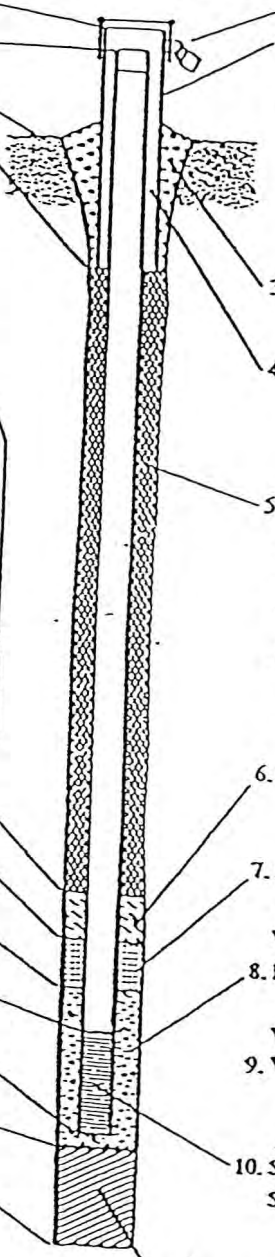
Distance Well Is From Waste/Source Boundary
ft.

Well A Point of Enforcement Std. Application?
☐ Yes ☐ No

Location of Well Relative to Waste/Source
☐ Upgradient ☐ Sidegradient
☐ Downgradient ☒ Not Known

Well Installed By: (Person's Name and Firm)
J&J Soil Testing
Eugene Lehman

A. Protective pipe, top elevation 741.56 ft. MSL
Well casing, top elevation 741.46 ft. MSL
C. Land surface elevation 738.9 ft. MSL
Surface seal, bottom _____ ft. MSL or 1.0 ft.



1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe
a. Inside diameter: 3.75 in.
b. Length: 5.0 ft.
c. Material: Steel ■ 04
_____ Other ☐
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30
Concrete ■ 01
_____ Other ☐
4. Material between well casing and protective pipe
Bentonite ■ 30
Annular space seal ☐
_____ Other ☐
5. Annular space seal: Granular Bentonite ■ 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
.37 % Bentonite .... Bentonite-cement grout ☐ 50
_____ Ft^3 volume added for any of the above
How installed:
Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☐ 08
6. Bentonite seal: Bentonite granules ■ 33
☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32
_____ Other ☐
7. Fine sand material: Manufacturer, product name and mesh size
Silica (Badger Mining)
Volume added .222 ft^3
8. Filter pack material: Manufacturer, product name and mesh size
Red Flint 45-55
Volume added 3.88 ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23
Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐
10. Screen material: PVC
Screen type: Factory cut ■ 11
Continuous slot ☐ 01
_____ Other ☐
Manufacturer Monoflex
Slot size: 0.010 in.
Slotted length: 10.0 ft.
11. Backfill material (below filter pack): None ☐
_____ Other ■

USCS classification of soil near screen:
☐ GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock
13. Sieve analysis attached? ☐ Yes ■ No
Drilling method used: Rotary ☐ 50
Hollow Stem Auger ■ 41
_____ Other ☐
Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ■ 99
Drilling additives used? ☐ Yes ☐ No
Describe _____
7. Source of water (attach analysis):

Bentonite seal, top _____ ft. MSL or 1.0 ft.
Fine sand, top _____ ft. MSL or 3.5 ft.
Filter pack, top _____ ft. MSL or 4.0 ft.
Well screen, top _____ ft. MSL or 4.0 ft.
Well screen, bottom _____ ft. MSL or 14.0 ft.
Filter pack, bottom _____ ft. MSL or 14.5 ft.
Borehole, bottom _____ ft. MSL or 14.5 ft.
Borehole, diameter 8.25 in.
O.D. well casing 2.38 in.
I.D. well casing 2.03 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

Firm
Graef Anhalt Schloemer & Associates, Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with s. 147, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5,000 for each day of violation. In accordance

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A 8-89

Facility/Project Name: C&NW

Facility License, Permit or Monitoring Number: _____

Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12

Distance Well Is From Waste/Source Boundary: _____ ft.

Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No

Grid Location: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.

Section Location: SW 1/4 of NW 1/4 of Section 6, T 7 N. R 12 ☐ E ☐ W

Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☒ Not Known

Well Name: MW-3

Wis. Unique Well Number: _____ DNR Well Number: _____

Date Well Installed: 07 / 26 / 91 (m m / d d / y y)

Well Installed By: (Person's Name and Firm)
J&J Soil Testing
(Eugene Lehman)

A. Protective pipe, top elevation: 741 9 8 ft. MSL
B. Well casing, top elevation: 741 8 8 ft. MSL
C. Land surface elevation: 739 2 ft. MSL
D. Surface seal, bottom: _____ ft. MSL or 1 0 ft.

12. USCS classification of soil near screen:
☐ GP ☐ GM ☐ CC ☐ GW ☐ SW ☐ SP
☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH
☐ Bedrock

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis): _____

E. Bentonite seal, top: _____ ft. MSL or 1 0 ft.
F. Fine sand, top: _____ ft. MSL or 3 5 ft.
G. Filter pack, top: _____ ft. MSL or 4 0 ft.
H. Well screen, top: _____ ft. MSL or 14 0 ft.
I. Well screen, bottom: _____ ft. MSL or 14 5 ft.
J. Filter pack, bottom: _____ ft. MSL or 14 5 ft.
K. Borehole, bottom: _____ ft. MSL or 14 5 ft.
L. Borehole, diameter: 8 25 in.
M. O.D. well casing: 2 38 in.
N. I.D. well casing: 2 03 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 3 .75 in.
b. Length: 5 .0 ft.
c. Material: Steel ■ 02; Other ☐ _____ (Bumper/Posts)
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐; Other ☐ _____
5. Annular space seal: Granular Bentonite ■ 33
_____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
_____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
_____ % Bentonite .... Bentonite-cement grout ☐ 50
.37 Ft³ volume added for any of the above
How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☐ 08
6. Bentonite seal: Bentonite granules ■ 33; ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐ 32; Other ☐ _____
7. Fine sand material: Manufacturer, product name and mesh size: Silica (Badger Mining)
Volume added .22 ft³
8. Filter pack material: Manufacturer, product name and mesh size: Red Flint 45-55
Volume added 3.88 ft³
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ _____
10. Screen material: PVC
Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ _____
Manufacturer: Monoflex
Slot size: 0.10 in.
Slotted length: 10 .0 ft.
11. Backfill material (below filter pack): None ☐; Other ■ 45-55 6+

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: _____ Firm: Graef Anhalt Schloemer & Associates, Inc.

Please complete and return both sides of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than $10 nor more than $5,000 for each [illegible]

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B 8-89

Facility/Project Name
C&NW

Well Name
MW-3

License, Permit or Monitoring Number

Wis. Unique Well Number | DNR Well Number

1. Can this well be purged dry? -- ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	■	4 1
surged with bailer and pumped	☐	6 1
surged with block and bailed	☐	4 2
surged with block and pumped	☐	6 2
surged with block, bailed and pumped	☐	7 0
compressed air	☐	2 0
bailed only	☐	1 0
pumped only	☐	5 1
pumped slowly	☐	5 0
Other _____	☐	

	Before Development	After Development
11. Depth to Water (from top of well casing)	10.54 ft.	10.59 ft.
Date	08 / 01 / 91 (m m d d y y)	08 / 01 / 91 (m m d d y y)
Time	10:40 ■ a.m. ☐ p.m.	12:30 ☐ a.m. ■ p.m.
12. Sediment in well bottom	1.5 inches	.5 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe)	Clear ☐ 20 Turbid ■ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

3. Time spent developing well 80 min.

4. Depth of well (from top of well casing) 17.0 ft.

5. Inside diameter of well 2.03 in.

6. Volume of water in filter pack and well casing 6.2 gal.

7. Volume of water removed from well 60.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added None

10. Analysis performed on water added? ☐ Yes ■ No
(If yes, attach results)

Additional comments on development:

Well developed by: Person's Name and Firm

Name: Tim Hanson

Firm: Graef Anhalt Schloemer & Associates

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Tim Hanson

Firm: Graef Anhalt Schloemer & Associates

NOTE: Shaded areas are for DNR use only. See instructions for more information.

APPENDIX D

REVISED 6/6/91

WATER SAMPLING LOG

Graef Anhalt Schloemer & Associates Inc.
(414) 259-1500 FAX (414) 259-0037 PAGE ___ OF ___

PROJECT: C&NW Rail Road PROJ. NO.: 917505 DATE: 08-01-91

LOCATION: 119th/Hampton

WELL NO.: MW-1 TIME SAMPLING BEGAN: 3:30-4:06 8-1-91

WEATHER: Sunny 72 TIME COMPLETED: 8:30-9:45 8-2-91

SAMPLING PERSONNEL: Tim Hanson

EVALUATION DATA

Description of Measuring Point (MP): N.T.O.C. MP Elevation: 744.02 ft. MSL

Height of MP Above/Below Land Surface: 3.0' ft. Water-Level Elevation: 738.17 ft. MSL

Total Depth of Well Below MP: 17.0 ft. Diameter of Casing: 2.03 in.

Depth to Water Below MP: 5.85 ft. Gallons Pumped/Bailed

Water Column in Well: 11.15 ft. Prior to Sampling: 105.0 gal.

Vol. of Water in Filter Pack & Well per Foot: .96gal. Sampling Pump Intake Setting

Vol. of Water in Filter Pack & Well: 10.7 gal. (Ft. below land surface): ___ ft.

Evacuation Method: PVC Bailer

SAMPLING DATA FIELD PARAMETERS

Color: light brown Appearance: slightly turbid

Odor: none Temperature: 64 °F/°C

Other (specific ion; OVA; HNU; etc.) ___

Specific Conductance, umhos/cm: 0900 pH: 7.8

Sampling Method & Material: PVC Bailer

Constituents Sampled	Container Description	Preservative(s)
VOC	(3) 40ml VOA VIALS	ICE
RCRA METALS (TOTAL)	(1) 950CC AMBER JAR	NH03
ACID FRACTION, BASE NEUTRAL, PETICIDE, PCB	(2) 950CC " "	ICE

Recharge: FAST

Remarks: ___

REVISED 6/6/91

WATER SAMPLING LOG

Graef Anhalt Schloemer & Associates Inc.

(414) 259-1500 FAX (414) 259-0037 PAGE ____ OF ____

PROJECT: C&NW Rail Road PROJ. NO.: 917505 DATE: 08-01-91

LOCATION: 119th/Hampton

WELL NO.: MW-2 TIME SAMPLING BEGAN: 1:45

WEATHER: Sunny 72 TIME COMPLETED: 3:15

SAMPLING PERSONNEL: Tim Hanson

EVALUATION DATA

Description of Measuring Point (MP): N.T.O.C. MP Elevation: 741.46 ft. MSL

Height of MP Above/Below Land Surface: 3.0 ft. Water-Level Elevation: 732.9 ft. MSL

Total Depth of Well Below MP: 17.0 ft. Diameter of Casing: 2.03 in.

Depth to Water Below MP: 8.56 ft. Gallons Pumped/Bailed

Water Column in Well: 8.44 ft. Prior to Sampling: 80.0 gal.

Vol. of Water in Filter Pack & Well per Foot: .96 gal. Sampling Pump Intake Setting

Vol. of Water in Filter Pack & Well: 8.1 gal. (Ft. below land surface): ____ ft.

Evacuation Method: PVC Bailer

SAMPLING DATA FIELD PARAMETERS

Color: Tan Appearance: Slightly Turbid

Odor: None Temperature: 63 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm: 1300 pH: 7.3

Sampling Method & Material: P.V.C. Bailer

Constituents Sampled	Container Description	Preservative(s)
VOC	(3) 40ml VOA VIALS	ICE
RCRA METALS (TOTAL)	(1) 950CC AMBER JAR	NH03
ACID FRACTION, BASE NEUTRAL, PETICIDE, PCB	(2) 950CC " "	ICE

Recharge: FAST

Remarks: ____

REVISED 6/6/91

WATER SAMPLING LOG

Graef Anhalt Schloemer & Associates Inc.
(414) 259-1500 FAX (414) 259-0037

PAGE ___ OF ___

PROJECT: C&NW Rail Road PROJ. NO.: 917505 DATE: 08-01-91

LOCATION: 119th/Hampton

WELL NO.: MW-3 TIME SAMPLING BEGAN: 10:40

WEATHER: Sunny 72 TIME COMPLETED: 12:30

SAMPLING PERSONNEL: Tim Hanson

EVALUATION DATA

Description of Measuring Point (MP): N.T.O.C. MP Elevation: 741.88 ft. MSL

Height of MP Above/Below Land Surface: 3.0 ft. Water-Level Elevation: 731.34 ft. MSL

Total Depth of Well Below MP: 17.0 ft. Diameter of Casing: 2.03 in.

Depth to Water Below MP: 10.54 ft. Gallons Pumped/Bailed

Water Column in Well: 6.46 ft. Prior to Sampling: 60.0 gal.

Vol. of Water in Filter Pack & Well per Foot: .96 gal. Sampling Pump Intake Setting

Vol. of Water in Filter Pack & Well: 6.2 gal. (Ft. below land surface): ___ ft.

Evacuation Method: PVC Bailer

SAMPLING DATA FIELD PARAMETERS

Color: light brown Appearance: slightly turbid

Odor: none Temperature: 60 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm: 0.900 pH: 7.7

Sampling Method & Material: PVC Bailer

Constituents Sampled	Container Description	Preservative(s)
VOC	(3) 40ml VOA VIALS	ICE
RCRA METALS (TOTAL)	(1) 950CC AMBER JAR	NH03
ACID FRACTION, BASE NEUTRAL, PETICIDE, PCB	(2) 950CC " "	ICE

Recharge: FAST

Remarks:

APPENDIX E

PROJECT NUMBER: 917505

PROJECT NAME: C & NW RAILROAD

SAMPLERS: T. HANSON

91.2038

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	RCRA METALS (TOTAL)	VOC	ACID FRACTION BASE/NEUTRAL COMP'S	PESTICIDES	PCB	NITRATES & NITRITES	SAMPLE DESCRIPTION
WS-1	8/2/91	9:30		X	M.W.-1	3		X					40ml VOA VIALS
WS-2	8/2/91	9:30		X	" "	1	X						950 cc AMBER JAR
WS-3	8/2/9	9:30		X	" "	2			X	X	X	X	950cc AMBER JAR
WS-1	8/2/91	2:15		X	MW-2	3		X					40ml V.O.A VIALS
WS-2	8/2/91	2:15		X	" "	1	X						950cc AMBER JAR
WS-3	8/2/91	2:15		X	" "	2			X	X	X	X	950 cc AMBER JAR
WS-1	8/1/91	11:30			M.W.-3	3		X					40ml V.O.A VIALS
WS-2	8/1/91	11:30			" "	1	X						950 cc AMBER JAR
WS-3	8/1/91	11:30			" "	2			X	X	X	X	950 cc AMBER JAR

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
[signature]	8-5-91 3:20	Jerry Schmitz	Jerry Schmitz	8-5-91 4:30	
			~~[signature]~~	~~8-5-91 3:20~~	Rennie [signature]

Remarks:

Report To:

CHAIN OF CUSTODY RECORD

GRAEF ANHALT SCHLOEMER and Associates Inc.

CONSULTING ENGINEERS

MILWAUKEE ENGINEERING CENTER
345 North 95th Street
Milwaukee, Wisconsin 53226
Telephone (414) 259-1500
FAX (414) 259-0037

White--Accompanies Shipment, Yellow--Laboratory File, Pink--GAS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30694
Account No: 32700
Purchase Order:
Page 1

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

VOC - AQUEOUS - EPA 8021		
Benzene	<1.0	ug/L
Bromobenzene	<1.0	ug/L
Bromochloromethane	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<1.0	ug/L
n-Butylbenzene	<1.0	ug/L
sec-Butylbenzene	<1.0	ug/L
tert-Butylbenzene	<1.0	ug/L
Carbon Tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chlorodibromethane	<1.0	ug/L
Chloroethane	<1.0	ug/L
Chloromethane	<1.0	ug/L
2-Chlorotoluene	<1.0	ug/L
4-Chlorotoluene	<1.0	ug/L
1,2-Dibromo-3-Chloropropan	<1.0	ug/L
1,2-Dibromoethane (EDB)	<1.0	ug/L
Dibromomethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
Dichlorodifluoromethane	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30694
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
1,3-Dichloropropane	<1.0	ug/L
2,2-Dichloropropane	<1.0	ug/L
1,1-Dichloropropene	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Hexachlorobutadiene	<1.0	ug/L
Isopropylbenzene	<1.0	ug/L
p-Isopropyltoluene	<1.0	ug/L
Methylene Chloride	<20.	ug/L
Naphthalene	<1.0	ug/L
n-Propylbenzene	<1.0	ug/L
Styrene	<1.0	ug/L
1,1,1,2-Tetrachloroethane	<1.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30694
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
1,2,3-Trichloropropane	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
Vinyl Chloride	<1.0	ug/L
Xylenes, Total	<1.0	ug/L
Methyl-t-butyl ether	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30695
Account No: 32700
Purchase Order:
Page 4

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-2

Date Taken: 08/02/1991

Date Received: 08/05/1991

Arsenic, GFAA	<0.005	mg/L
Barium, AA	<1.	mg/L
Cadmium, GFAA	<0.001	mg/L
Chromium, GFAA	<0.002	mg/L
Lead, GFAA	<0.005	mg/L
Mercury, CVAA	<0.0005	mg/L
Selenium, GFAA	<0.005	mg/L
Silver, GFAA	<0.001	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30696
Account No: 32700
Purchase Order:
Page 5

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-2

Date Taken: 08/02/1991

Date Received: 08/05/1991

Arsenic, GFAA	<0.005	mg/L
Barium, AA	<1.	mg/L
Cadmium, GFAA	<0.001	mg/L
Chromium, GFAA	<0.002	mg/L
Lead, GFAA	<0.005	mg/L
Mercury, CVAA	<0.0005	mg/L
Selenium, GFAA	<0.005	mg/L
Silver, GFAA	<0.001	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Watertown Division
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30697
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-2

Date Taken: 08/02/1991

Date Received: 08/05/1991

Arsenic, GFAA	<0.005	mg/L
Barium, AA	<1.	mg/L
Cadmium, GFAA	<0.001	mg/L
Chromium, GFAA	<0.002	mg/L
Lead, GFAA	<0.005	mg/L
Mercury, CVAA	<0.0005	mg/L
Selenium, GFAA	<0.005	mg/L
Silver, GFAA	<0.001	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Watertown, WI 53094
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30698
Account No: 32700
Purchase Order:
Page 7

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

VOC - AQUEOUS - EPA 8021		
Benzene	<1.0	ug/L
Bromobenzene	<1.0	ug/L
Bromochloromethane	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<1.0	ug/L
n-Butylbenzene	<1.0	ug/L
sec-Butylbenzene	<1.0	ug/L
tert-Butylbenzene	<1.0	ug/L
Carbon Tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chlorodibromethane	<1.0	ug/L
Chloroethane	<1.0	ug/L
Chloromethane	<1.0	ug/L
2-Chlorotoluene	<1.0	ug/L
4-Chlorotoluene	<1.0	ug/L
1,2-Dibromo-3-Chloropropan	<1.0	ug/L
1,2-Dibromoethane (EDB)	<1.0	ug/L
Dibromomethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
Dichlorodifluoromethane	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30698
Account No: 32700
Purchase Order:
Page 8

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
1,3-Dichloropropane	<1.0	ug/L
2,2-Dichloropropane	<1.0	ug/L
1,1-Dichloropropene	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Hexachlorobutadiene	<1.0	ug/L
Isopropylbenzene	<1.0	ug/L
p-Isopropyltoluene	<1.0	ug/L
Methylene Chloride	<20.	ug/L
Naphthalene	<1.0	ug/L
n-Propylbenzene	<1.0	ug/L
Styrene	<1.0	ug/L
1,1,1,2-Tetrachloroethane	<1.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30698
Account No: 32700
Purchase Order:
Page 9

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
1,2,3-Trichloropropane	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
Vinyl Chloride	<1.0	ug/L
Xylenes, Total	<1.0	ug/L
Methyl-t-butyl ether	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Watertown Division
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30699
Account No: 32700
Purchase Order:
Page 10

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

VOC - AQUEOUS - EPA 8021		
Benzene	<1.0	ug/L
Bromobenzene	<1.0	ug/L
Bromochloromethane	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<1.0	ug/L
n-Butylbenzene	<1.0	ug/L
sec-Butylbenzene	<1.0	ug/L
tert-Butylbenzene	<1.0	ug/L
Carbon Tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chlorodibromethane	<1.0	ug/L
Chloroethane	<1.0	ug/L
Chloromethane	<1.0	ug/L
2-Chlorotoluene	<1.0	ug/L
4-Chlorotoluene	<1.0	ug/L
1,2-Dibromo-3-Chloropropan	<1.0	ug/L
1,2-Dibromoethane (EDB)	<1.0	ug/L
Dibromomethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
Dichlorodifluoromethane	<1.0	ug/L
1,1-Dichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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Job No: 91.2038
Sample No: 30699
Account No: 32700
Purchase Order:
Page 11

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
1,3-Dichloropropane	<1.0	ug/L
2,2-Dichloropropane	<1.0	ug/L
1,1-Dichloropropene	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Hexachlorobutadiene	<1.0	ug/L
Isopropylbenzene	<1.0	ug/L
p-Isopropyltoluene	<1.0	ug/L
Methylene Chloride	<20.	ug/L
Naphthalene	<1.0	ug/L
n-Propylbenzene	<1.0	ug/L
Styrene	<1.0	ug/L
1,1,1,2-Tetrachloroethane	<1.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,2,3-Trichlorobenzene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30699
Account No: 32700
Purchase Order:
Page 12

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-1

Date Taken: 08/02/1991

Date Received: 08/05/1991

1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
1,2,3-Trichloropropane	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
Vinyl Chloride	<1.0	ug/L
Xylenes, Total	<1.0	ug/L
Methyl-t-butyl ether	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:
Page 13

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

Nitrate + Nitrite	<0.1	mg/L
Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:
Page 14

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

Aldrin	<0.05	ug/L
alpha-BHC	<0.05	ug/L
beta-BHC	<0.05	ug/L
delta-BHC	<0.05	ug/L
gamma-BHC (Lindane)	<0.05	ug/L
Chlordane	<0.05	ug/L
4,4'-DDD	<0.1	ug/L
4,4'-DDE	<0.1	ug/L
4,4'-DDT	<0.1	ug/L
Dieldrin	<0.1	ug/L
Endosulfan I	<0.05	ug/L
Endosulfan II	<0.1	ug/L
Endosulfan sulfate	<0.1	ug/L
Endrin	<0.1	ug/L
Endrin aldehyde	<0.1	ug/L
Heptachlor	<0.05	ug/L
Heptachlor epoxide	<0.05	ug/L
Methoxychlor	<0.5	ug/L
Toxaphene	<0.5	ug/L
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:
Page 15

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

PCB-1260	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

ACID CMPDS - 8270 AQUEOUS

4-Chloro-3-methylphenol	<11.0	ug/L
2-Chlorophenol	<11.0	ug/L
2,4-Dichlorophenol	<11.0	ug/L
2,4-Dimethylphenol	<11.0	ug/L
2,4-Dinitrophenol	<55.0	ug/L
2-Methyl-4,6-dinitrophenol	<55.0	ug/L
2-Nitrophenol	<11.0	ug/L
4-Nitrophenol	<55.0	ug/L
Pentachlorophenol	<55.0	ug/L
Phenol	<11.0	ug/L
2,4,5-Trichlorophenol	<11.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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345 N 95th Street
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Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:
Page 17

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Acenaphthene	<11.0	ug/L
Acenaphthylene	<11.0	ug/L
Anthracene	<11.0	ug/L
Benzidine	<55.0	ug/L
Benzo(a)anthracene	<11.0	ug/L
Benzo(b)fluoranthene	<11.0	ug/L
Benzo(k)fluoranthene	<11.0	ug/L
Benzo(g,h,i)perylene	<11.0	ug/L
Benzo(a)pyrene	<11.0	ug/L
Benzyl butyl phthalate	<11.0	ug/L
Bis(2-chloroethoxy)methane	<11.0	ug/L
Bis(2-chloroethyl)ether	<11.0	ug/L
Bis(2-chloroisopropyl)ethe	<11.0	ug/L
Bis(2-ethylhexyl)phthalate	<11.0	ug/L
4-Bromophenyl phenyl ether	<11.0	ug/L
2-Chloronaphthalene	<11.0	ug/L
4-Chlorophenyl phenyl ethe	<11.0	ug/L
Chrysene	<11.0	ug/L
Dibenzo(a,h)anthracene	<11.0	ug/L
Di-n-butyl phthalate	<11.0	ug/L
1,2-Dichlorobenzene	<11.0	ug/L
1,3-Dichlorobenzene	<11.0	ug/L
1,4-Dichlorobenzene	<11.0	ug/L
3,3'-Dichlorobenzidine	<22.0	ug/L
Diethyl phthalate	<11.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

GRAEF, ANHALT, SCHLOEMER
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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30700
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-1 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Dimethyl phthalate	<11.0	ug/L
2,4-Dinitrotoluene	<11.0	ug/L
2,6-Dinitrotoluene	<11.0	ug/L
Di-n-octyl phthalate	<11.0	ug/L
1,2-Diphenylhydrazine	<11.0	ug/L
Fluoranthene	<11.0	ug/L
Fluorene	<11.0	ug/L
Hexachlorobenzene	<11.0	ug/L
Hexachlorobutadiene	<11.0	ug/L
Hexachlorocyclopentadiene	<11.0	ug/L
Hexachloroethane	<11.0	ug/L
Indeno(1,2,3-cd)pyrene	<11.0	ug/L
Isophorone	<11.0	ug/L
Naphthalene	<11.0	ug/L
Nitrobenzene	<11.0	ug/L
N-Nitrosodimethylamine	<11.0	ug/L
N-Nitrosodi-n-propylamine	<11.0	ug/L
N-Nitrosodiphenylamine	<11.0	ug/L
Phenanthrene	<11.0	ug/L
Pyrene	<11.0	ug/L
1,2,4-Trichlorobenzene	<11.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

Nitrate + Nitrite	<0.1	mg/L
Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:
Page 20

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

Aldrin	<0.05	ug/L
alpha-BHC	<0.05	ug/L
beta-BHC	<0.05	ug/L
delta-BHC	<0.05	ug/L
gamma-BHC (Lindane)	<0.05	ug/L
Chlordane	<0.05	ug/L
4,4'-DDD	<0.1	ug/L
4,4'-DDE	<0.1	ug/L
4,4'-DDT	<0.1	ug/L
Dieldrin	<0.1	ug/L
Endosulfan I	<0.05	ug/L
Endosulfan II	<0.1	ug/L
Endosulfan sulfate	<0.1	ug/L
Endrin	<0.1	ug/L
Endrin aldehyde	<0.1	ug/L
Heptachlor	<0.05	ug/L
Heptachlor epoxide	<0.05	ug/L
Methoxychlor	<0.5	ug/L
Toxaphene	<0.5	ug/L
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:
Page 21

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

PCB-1260	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:
Page 22

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

ACID CMPDS - 8270 AQUEOUS

4-Chloro-3-methylphenol	<10.0	ug/L
2-Chlorophenol	<10.0	ug/L
2,4-Dichlorophenol	<10.0	ug/L
2,4-Dimethylphenol	<10.0	ug/L
2,4-Dinitrophenol	<50.0	ug/L
2-Methyl-4,6-dinitrophenol	<50.0	ug/L
2-Nitrophenol	<10.0	ug/L
4-Nitrophenol	<50.0	ug/L
Pentachlorophenol	<50.0	ug/L
Phenol	<10.0	ug/L
2,4,5-Trichlorophenol	<10.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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Watertown Division
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Watertown, WI 53094
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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:
Page 23

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Acenaphthene	<11.0	ug/L
Acenaphthylene	<11.0	ug/L
Anthracene	<11.0	ug/L
Benzidine	<55.0	ug/L
Benzo(a)anthracene	<11.0	ug/L
Benzo(b)fluoranthene	<11.0	ug/L
Benzo(k)fluoranthene	<11.0	ug/L
Benzo(g,h,i)perylene	<11.0	ug/L
Benzo(a)pyrene	<11.0	ug/L
Benzyl butyl phthalate	<11.0	ug/L
Bis(2-chloroethoxy)methane	<11.0	ug/L
Bis(2-chloroethyl)ether	<11.0	ug/L
Bis(2-chloroisopropyl)ethe	<11.0	ug/L
Bis(2-ethylhexyl)phthalate	<11.0	ug/L
4-Bromophenyl phenyl ether	<11.0	ug/L
2-Chloronaphthalene	<11.0	ug/L
4-Chlorophenyl phenyl ethe	<11.0	ug/L
Chrysene	<11.0	ug/L
Dibenzo(a,h)anthracene	<11.0	ug/L
Di-n-butyl phthalate	<11.0	ug/L
1,2-Dichlorobenzene	<11.0	ug/L
1,3-Dichlorobenzene	<11.0	ug/L
1,4-Dichlorobenzene	<11.0	ug/L
3,3'-Dichlorobenzidine	<22.0	ug/L
Diethyl phthalate	<11.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30701
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-2 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Dimethyl phthalate	<11.0	ug/L
2,4-Dinitrotoluene	<11.0	ug/L
2,6-Dinitrotoluene	<11.0	ug/L
Di-n-octyl phthalate	<11.0	ug/L
1,2-Diphenylhydrazine	<11.0	ug/L
Fluoranthene	<11.0	ug/L
Fluorene	<11.0	ug/L
Hexachlorobenzene	<11.0	ug/L
Hexachlorobutadiene	<11.0	ug/L
Hexachlorocyclopentadiene	<11.0	ug/L
Hexachloroethane	<11.0	ug/L
Indeno(1,2,3-cd)pyrene	<11.0	ug/L
Isophorone	<11.0	ug/L
Naphthalene	<11.0	ug/L
Nitrobenzene	<11.0	ug/L
N-Nitrosodimethylamine	<11.0	ug/L
N-Nitrosodi-n-propylamine	<11.0	ug/L
N-Nitrosodiphenylamine	<11.0	ug/L
Phenanthrene	<11.0	ug/L
Pyrene	<11.0	ug/L
1,2,4-Trichlorobenzene	<11.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 25

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

Nitrate + Nitrite	7.2	mg/L
Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 26

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

Aldrin	<0.05	ug/L
alpha-BHC	<0.05	ug/L
beta-BHC	<0.05	ug/L
delta-BHC	<0.05	ug/L
gamma-BHC (Lindane)	<0.05	ug/L
Chlordane	<0.05	ug/L
4,4'-DDD	<0.1	ug/L
4,4'-DDE	<0.1	ug/L
4,4'-DDT	<0.1	ug/L
Dieldrin	<0.1	ug/L
Endosulfan I	<0.05	ug/L
Endosulfan II	<0.1	ug/L
Endosulfan sulfate	<0.1	ug/L
Endrin	<0.1	ug/L
Endrin aldehyde	<0.1	ug/L
Heptachlor	<0.05	ug/L
Heptachlor epoxide	<0.05	ug/L
Methoxychlor	<0.5	ug/L
Toxaphene	<0.5	ug/L
PCB-1016	<1.0	ug/L
PCB-1221	<1.0	ug/L
PCB-1232	<1.0	ug/L
PCB-1242	<1.0	ug/L
PCB-1248	<1.0	ug/L
PCB-1254	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 27

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

PESTICIDES/PCB - 608 AQUEOUS

PCB-1260	<1.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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Certification No. 128053530

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 28

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

ACID CMPDS - 8270 AQUEOUS

4-Chloro-3-methylphenol	<10.0	ug/L
2-Chlorophenol	<10.0	ug/L
2,4-Dichlorophenol	<10.0	ug/L
2,4-Dimethylphenol	<10.0	ug/L
2,4-Dinitrophenol	<50.0	ug/L
2-Methyl-4,6-dinitrophenol	<50.0	ug/L
2-Nitrophenol	<10.0	ug/L
4-Nitrophenol	<50.0	ug/L
Pentachlorophenol	<50.0	ug/L
Phenol	<10.0	ug/L
2,4,5-Trichlorophenol	<10.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 29

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Acenaphthene	<13.0	ug/L
Acenaphthylene	<13.0	ug/L
Anthracene	<13.0	ug/L
Benzidine	<65.0	ug/L
Benzo(a)anthracene	<13.0	ug/L
Benzo(b)fluoranthene	<13.0	ug/L
Benzo(k)fluoranthene	<13.0	ug/L
Benzo(g,h,i)perylene	<13.0	ug/L
Benzo(a)pyrene	<13.0	ug/L
Benzyl butyl phthalate	<13.0	ug/L
Bis(2-chloroethoxy)methane	<13.0	ug/L
Bis(2-chloroethyl)ether	<13.0	ug/L
Bis(2-chloroisopropyl)ethe	<13.0	ug/L
Bis(2-ethylhexyl)phthalate	<13.0	ug/L
4-Bromophenyl phenyl ether	<13.0	ug/L
2-Chloronaphthalene	<13.0	ug/L
4-Chlorophenyl phenyl ethe	<13.0	ug/L
Chrysene	<13.0	ug/L
Dibenzo(a,h)anthracene	<13.0	ug/L
Di-n-butyl phthalate	<13.0	ug/L
1,2-Dichlorobenzene	<13.0	ug/L
1,3-Dichlorobenzene	<13.0	ug/L
1,4-Dichlorobenzene	<13.0	ug/L
3,3'-Dichlorobenzidine	<26.0	ug/L
Diethyl phthalate	<13.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2038
Sample No: 30702
Account No: 32700
Purchase Order:
Page 30

JOB DESCRIPTION: Water Sample
SAMPLE DESCRIPTION: MW-3 WS-3

Date Taken: 08/02/1991

Date Received: 08/05/1991

BASE/NEUTRALS - 8270 AQUEOUS

Dimethyl phthalate	<13.0	ug/L
2,4-Dinitrotoluene	<13.0	ug/L
2,6-Dinitrotoluene	<13.0	ug/L
Di-n-octyl phthalate	<13.0	ug/L
1,2-Diphenylhydrazine	<13.0	ug/L
Fluoranthene	<13.0	ug/L
Fluorene	<13.0	ug/L
Hexachlorobenzene	<13.0	ug/L
Hexachlorobutadiene	<13.0	ug/L
Hexachlorocyclopentadiene	<13.0	ug/L
Hexachloroethane	<13.0	ug/L
Indeno(1,2,3-cd)pyrene	<13.0	ug/L
Isophorone	<13.0	ug/L
Naphthalene	<13.0	ug/L
Nitrobenzene	<13.0	ug/L
N-Nitrosodimethylamine	<13.0	ug/L
N-Nitrosodi-n-propylamine	<13.0	ug/L
N-Nitrosodiphenylamine	<13.0	ug/L
Phenanthrene	<13.0	ug/L
Pyrene	<13.0	ug/L
1,2,4-Trichlorobenzene	<13.0	ug/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

PROJECT NUMBER	PROJECT NAME
917505	C&NW RAILROAD

SAMPLERS: T. HANSON

91.2039

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	RCRA-METALS (TOTAL)	E.D.X.	T.P.H.	P.A.H.	P.C.B.	SAMPLE DESCRIPTION
SS-1	7/25/91	9:30		X	SB-1 (3-5')	1	X	X	X	X		4 OZ SOIL JARS
SS-2	7/25/91	9:45		X	" (9-11')	1	X	X	X	X		
SS-3	7/25/91	10:15		X	" (5-7')	1					X	
SS-4	7/25/91	10:20		X	SB-2 (1-3')	1	X	X	X	X		
SS-5	7/25/91	10:10		X	" (3-5')	1					X	
SS-6	7/25/91	2:00		X	SB-3 (9-11')	1	X	X	X	X		
SS-7	7/25/91	2:30		X	" (13-15')	1	X	X	X	X		
SS-8	7/25/91	4:40		X	SB-4 (15-17')	1	X	X	X	X		
SS-9	7/26/91	7:00		X	SB-5 (5-7')	1	X	X	X	X		
SS-10	7/26/91	8:40		X	" (17-19')	1	X	X	X	X		
SS-11	7/26/91	12:10		X	SB-6 (7-9')	1	X	X	X	X		
SS-12	7/26/91	12:40		X	SB-7 (1-3')	1	X	X	X	X		
SS-13	7/26/91	1:00		X	" (3-5')	1					X	
SS-14	7/26/91	9:05		X	SB-8 (1-3')	1	X	X	X	X		
SS-15	7/26/91	11:50		X	SB-9 (7-9')	1	X	X	X	X		

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
[signature]	8-5-91 | 3:20	[signature]	[signature]	8-5-91 | 4:30	
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
			[signature]	8-5-91 | 3:20	Pennie Wilsemsel

Remarks:

Report To:

CHAIN OF CUSTODY RECORD

GRAEF ANHALT SCHLOEMER and Associates Inc.

CONSULTING ENGINEERS

MILWAUKEE ENGINEERING CENTER
345 North 95th Street
Milwaukee, Wisconsin 53226
Telephone (414) 259-1500
FAX (414) 259-0037

White--Accompanies Shipment, Yellow--Laboratory File, Pink--GAS

PROJECT NUMBER	PROJECT NAME
917505	C&NW RAILROAD

SAMPLERS: T. HANSON

91.2039

SAMPLE NUMBER	DATE	TIME	COMP.	GRAB	SAMPLE LOCATION	NO. OF CONTAINERS	RCRA-METAL (TOTAL)	E.D.X.	T.P.H.	P.A.H.	PCB	SAMPLE DESCRIPTION
SS-16	7/26/91	11:20		X	SB-9 (1-3')	1				X		4oz SOIL JAR

Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
[signature]	8-5-91 | 3:20	[signature]	[signature]	8-5-91 | 17:30	
Relinquished By:	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:
			[signature]	8-5-91 | 3:20	Penni Weisensel

Remarks:

Report To:

CHAIN OF CUSTODY RECORD

GRAEF ANHALT SCHLOEMER and Associates Inc.

CONSULTING ENGINEERS

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Milwaukee, Wisconsin 53226
Telephone (414) 259-1500
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White--Accompanies Shipment, Yellow--Laboratory File, Pink--GAS

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30703
Account No: 32700
Purchase Order:
Page 1

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-1

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	84.4	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.4	mg/kg
Arsenic, GFAA	6.4	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.4	mg/kg
Chromium, AA	20.	mg/kg
Lead, AA	26.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	181.	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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10/11/1991

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& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30703
Account No: 32700
Purchase Order:
Page 2

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-1

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	6.5	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30704
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-2

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	89.9	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	2.5	mg/kg
Arsenic, GFAA	3.4	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.5	mg/kg
Chromium, AA	12.	mg/kg
Lead, AA	38.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30704
Account No: 32700
Purchase Order:
Page 4

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-2

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30705
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-4

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	82.6	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.2	mg/kg
Arsenic, GFAA	12.4	mg/kg
Barium, AA	68.	mg/kg
Cadmium, AA	<2.2	mg/kg
Chromium, AA	24.	mg/kg
Lead, AA	11.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30705
Account No: 32700
Purchase Order:
Page 6

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-4

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	5.5	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	17.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30706
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-6

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	83.3	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.5	mg/kg
Arsenic, GFAA	8.2	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.5	mg/kg
Chromium, AA	22.	mg/kg
Lead, AA	13.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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P.O. Box 288
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Fax: (414) 261-8120

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10/11/1991

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& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30706
Account No: 32700
Purchase Order:
Page 8

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-6

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	2.3	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30707
Account No: 32700
Purchase Order:
Page 9

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-7

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	78.4	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.0	mg/kg
Arsenic, GFAA	4.0	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.0	mg/kg
Chromium, AA	14.	mg/kg
Lead, AA	9.4	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30707
Account No: 32700
Purchase Order:
Page 10

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-7

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	4.8	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30708
Account No: 32700
Purchase Order:
Page 11

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-8

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	82.7	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.4	mg/kg
Arsenic, GFAA	5.7	mg/kg
Barium, AA	59.	mg/kg
Cadmium, AA	<2.4	mg/kg
Chromium, AA	21.	mg/kg
Lead, AA	11.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

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345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30708
Account No: 32700
Purchase Order:
Page 12

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-8

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30709
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-9

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	84.7	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	2.4	mg/kg
Arsenic, GFAA	3.0	mg/kg
Barium, AA	41.	mg/kg
Cadmium, AA	<1.8	mg/kg
Chromium, AA	15.	mg/kg
Lead, AA	26.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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10/11/1991

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345 N 95th Street
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Job No: 91.2039
Sample No: 30709
Account No: 32700
Purchase Order:
Page 14

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-9

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30710
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-10

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	81.0	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.5	mg/kg
Arsenic, GFAA	6.4	mg/kg
Barium, AA	50.	mg/kg
Cadmium, AA	<2.5	mg/kg
Chromium, AA	24.	mg/kg
Lead, AA	15.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30710
Account No: 32700
Purchase Order:
Page 16

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-10

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30711
Account No: 32700
Purchase Order:
Page 17

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-11

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	87.4	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	2.3	mg/kg
Arsenic, GFAA	7.8	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.3	mg/kg
Chromium, AA	17.	mg/kg
Lead, AA	29.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30711
Account No: 32700
Purchase Order:

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-11

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30712
Account No: 32700
Purchase Order:
Page 19

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-12

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	76.3	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.2	mg/kg
Arsenic, GFAA	2.5	mg/kg
Barium, AA	83.	mg/kg
Cadmium, AA	<1.9	mg/kg
Chromium, AA	25.	mg/kg
Lead, AA	11.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.	mg/kg
Diesel Fuel	<5.	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30712
Account No: 32700
Purchase Order:
Page 20

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-12

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	420.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	430.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	460.	ug/kg
Phenanthrene	1000.	ug/kg
Pyrene	1600.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30713
Account No: 32700
Purchase Order:
Page 21

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-14

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	77.7	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	<2.4	mg/kg
Arsenic, GFAA	2.4	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.4	mg/kg
Chromium, AA	13.	mg/kg
Lead, AA	6.3	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	927.	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30713
Account No: 32700
Purchase Order:
Page 22

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-14

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	760.	ug/kg
Phenanthrene	3900.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30714
Account No: 32700
Purchase Order:
Page 23

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-15

Date Taken: 07/25/1991

Date Received: 08/05/1991

Solids, Total	83.7	%
Total Organic Halogens (TO	<2.5	mg/kg
Silver, AA	2.4	mg/kg
Arsenic, GFAA	2.6	mg/kg
Barium, AA	<50.	mg/kg
Cadmium, AA	<2.4	mg/kg
Chromium, AA	16.	mg/kg
Lead, AA	25.	mg/kg
Mercury, CVAA	<0.2	mg/kg
Selenium, GFAA	<1.	mg/kg
TPH NONAQUEOUS		
Gasoline	<5.0	mg/kg
Diesel Fuel	<5.0	mg/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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NET Midwest, Inc.
Watertown Division
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P.O. Box 288
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Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30714
Account No: 32700
Purchase Order:
Page 24

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-15

Date Taken: 07/25/1991

Date Received: 08/05/1991

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<0.4	ug/kg
Benzo(b)fluoranthene	<0.4	ug/kg
Benzo(k)fluoranthene	<0.4	ug/kg
Benzo(a)pyrene	<0.4	ug/kg
Benzo(ghi)perylene	<2.	ug/kg
Chrysene	<2.	ug/kg
Dibenzo(a,h)anthracene	<0.8	ug/kg
Fluoranthene	<4.	ug/kg
Fluorene	<2.	ug/kg
Indeno(1,2,3-cd)pyrene	<1.	ug/kg
Naphthalene	<20.	ug/kg
Phenanthrene	<10.	ug/kg
Pyrene	<4.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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Watertown Division
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30715
Account No: 32700
Purchase Order:
Page 25

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-3

Date Taken: 07/25/1991

Date Received: 08/05/1991

Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30715
Account No: 32700
Purchase Order:
Page 26

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-3

Date Taken: 07/25/1991

Date Received: 08/05/1991

PCB'S - 8080 NONAQUEOUS

PCB-1016	<100.	ug/kg
PCB-1221	<100.	ug/kg
PCB-1232	<100.	ug/kg
PCB-1242	<100.	ug/kg
PCB-1248	<100.	ug/kg
PCB-1254	<100.	ug/kg
PCB-1260	<100.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Watertown Division
602 Commerce Drive
P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30716
Account No: 32700
Purchase Order:
Page 27

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-5

Date Taken: 07/25/1991

Date Received: 08/05/1991

Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

NATIONAL ENVIRONMENTAL TESTING, INC.

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Watertown Division
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P.O. Box 288
Watertown, WI 53094
Tel: (414) 261-1660
Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30716
Account No: 32700
Purchase Order:
Page 28

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-5

Date Taken: 07/25/1991

Date Received: 08/05/1991

PCB'S - 8080 NONAQUEOUS

PCB-1016	<100.	ug/kg
PCB-1221	<100.	ug/kg
PCB-1232	<100.	ug/kg
PCB-1242	<100.	ug/kg
PCB-1248	<100.	ug/kg
PCB-1254	<100.	ug/kg
PCB-1260	<100.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
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10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30717
Account No: 32700
Purchase Order:
Page 29

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-13

Date Taken: 07/25/1991

Date Received: 08/05/1991

Prep, Pesticides/PCB AQUEO complete mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
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ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30717
Account No: 32700
Purchase Order:
Page 30

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-13

Date Taken: 07/25/1991

Date Received: 08/05/1991

PCB'S - 8080 NONAQUEOUS

PCB-1016	<100.	ug/kg
PCB-1221	<100.	ug/kg
PCB-1232	<100.	ug/kg
PCB-1242	<100.	ug/kg
PCB-1248	<100.	ug/kg
PCB-1254	<100.	ug/kg
PCB-1260	<100.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

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P.O. Box 288
Watertown, WI 53094
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Fax: (414) 261-8120

ANALYTICAL REPORT

10/11/1991

GRAEF, ANHALT, SCHLOEMER
& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30718
Account No: 32700
Purchase Order:
Page 31

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-16

Date Taken: 07/25/1991

Date Received: 08/05/1991

Prep, Pesticides/PCB AQUEO	complete	mg/L

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

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ANALYTICAL REPORT

10/11/1991

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& ASSOCIATES, INC.
345 N 95th Street
Milwaukee, WI 53226

Job No: 91.2039
Sample No: 30718
Account No: 32700
Purchase Order:
Page 32

JOB DESCRIPTION: Soil Samples
SAMPLE DESCRIPTION: SS-16

Date Taken: 07/25/1991

Date Received: 08/05/1991

PCB'S - 8080 NONAQUEOUS

PCB-1016	<100.	ug/kg
PCB-1221	<100.	ug/kg
PCB-1232	<100.	ug/kg
PCB-1242	<100.	ug/kg
PCB-1248	<100.	ug/kg
PCB-1254	<100.	ug/kg
PCB-1260	<100.	ug/kg

METHODS: TOX Aqueous - 9020
EOX Nonaqueous - 9020 Modified
TPH - California Method

Results reported as "<" indicate that there was no detection of the analyte at the reporting limit.

David W. Havick, Manager
Watertown Division
Certification No. 128053530

APPENDIX F

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 12436
Milwaukee, Wisconsin 53212
Fax: (414) 263-8483

June 29, 1990

File Ref: 4440

Mr. Donald York
Director of Environmental Controls
1 Northwestern Center
Chicago, IL 60185

Dear Mr. York:

RE: Chicago and Northwestern Transportation Company,
Butler Railroad Yard, Milwaukee, Wisconsin

This letter acknowledges the receipt of your report titled "Remedial Assessment for the Chicago and Northwestern Transportation Company, Butler Railroad Yard, Underground Storage Tank Site, Milwaukee, Wisconsin". Expected review time is at least 90 days from June 28, 1990, the date of receipt. Questions regarding this case should be directed to me at the above address or at (414) 263-8669.

Sincerely,

Bernice A. Aument

Bernice A. Aument
Hydrogeologist, Environmental Response Section

BAA:sbr

c: D. Lott
Z. V. Jackson/J. Cheshire - Aqua-Tech, Inc.
SED Case File

Jan90\2802\4

AQUA-TECH INC.

June 27, 1990

Ms. Bernice Aument
Department of Natural Resources
2300 North Martin Luther King Jr., Blvd.
P.O. Box 12436
Milwaukee, WI 53212-2436

Dear Mr. Aument:

Enclosed is the Remedial Assessment for the Chicago and Northwestern Transportation Company Butler Railroad Yard in Milwaukee, Wisconsin.

If you have any questions regarding this assessment, please do not hesitate to contact me.

Sincerely,

AQUA-TECH, INC.

James H. Cheshire

James H. Cheshire
Environmental Assessment Specialist

JHC/rk

Enclosure

RECEIVED
JUN 28 1990
D.N.R. SED Hqtrs.
Milwaukee, WI

CORPORATE
140 S. Park St., Port Washington, WI 53074
[414] 284-5746 FAX [414] 284-0243

TREATMENT FACILITY
340 Robinson Rd. Greer, S.C. 29651
[803] 877-1048 FAX [803] 877-1872

REMEDIAL ASSESSMENT

FOR THE

CHICAGO AND NORTHWESTERN TRANSPORTATION COMPANY

BUTLER RAILROAD YARD

UNDERGROUND STORAGE TANK SITE

MILWAUKEE, WISCONSIN

JUNE 1990

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT NO. 90730

REMEDIAL ASSESSMENT

FOR THE

CHICAGO AND NORTHWESTERN TRANSPORTATION COMPANY

MILWAUKEE, WISCONSIN

Prepared By: James H. Cheshire Date: 6-26-90

James H. Cheshire
Environmental Assessment Specialist
Aqua-Tech, Inc.

Reviewed By: Z. Vance Jackson, Jr. Date: 6/26/90

Z. Vance Jackson, Jr.
Hydrogeologist
Aqua-Tech, Inc.

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1.0 SUMMARY

Aqua-Tech, Inc. has completed a Remedial Assessment at the Chicago and Northwestern Transportation Company, Butler Railroad yard, located at 119th Street and Hampton Avenue, Milwaukee, Wisconsin. The remedial activities were conducted for gasoline contamination discovered during an underground storage tank closure assessment for the removal of one 10,000 gallon unleaded gasoline tank. The closure assessment was completed by Aqua-Tech on November 8 and 9, 1989 (Refer to the report prepared by Aqua-Tech in February, 1990).

The remedial activities consisted of the following:

* Pumping and disposal of 225 gallons of gasoline contaminated groundwater from the collection sump.
* Collection of one groundwater sample from the collection sump for laboratory analysis for benzene, toluene, ethylbenzene and xylene (BTEX).
* Disposal of the contaminated soil stockpiled at the site at a WDNR approved landfill.
* Removal of the piping leading from the former underground storage tank location to the former pump island location.
* Field screening of the soils beneath the piping and collection of one soil sample from the midpoint of the piping.
* Collection of one soil sample beneath the former pump island.
* Laboratory analysis of two soil samples for total petroleum hydrocarbons (TPH).

As a result of this assessment, Aqua-Tech recommends that NO FURTHER CORRECTIVE ACTION IS NECESSARY AT THE SITE.

The gasoline contaminated soil removed and stockpiled following the underground storage tank closure assessment has been

disposed of at an approved landfill. The piping associated with the underground storage tank has been removed. Laboratory analysis of soil samples collected from beneath the midpoint of the piping and from beneath the former pump island did not reveal the presence of TPH levels above the laboratory detection limit.

Approximately 225 gallons of gasoline contaminated groundwater were pumped from the collection sump and removed for disposal. After recharge, laboratory analysis of a groundwater sample collected from the surface of the water in the collection sump revealed no BTEX petroleum constituents above the laboratory detection limit.

2.0 REMEDIAL ASSESSMENT PROCEDURES AND FIELD OBSERVATIONS

2.1 Introduction

This section outlines procedures and observations for the remedial assessment at the Chicago and Northwestern Transportation Company Butler Railroad Yard. Rationales for specific assessment activities are also provided.

2.2 Pumping and Disposal of Gasoline Contaminated Groundwater From the Collection Sump

Aqua-Tech contracted National Tank Service, Milwaukee, Wisconsin to pump out and dispose of the gasoline contaminated groundwater from the collection sump installed during the underground storage tank closure assessment. On April 26, 1990, National Tank Service removed 225 gallons of groundwater from the collection sump before pumping the sump dry. A copy of the Bill of Lading document is provided in Appendix A.

2.3 Sampling of Groundwater from the Collection Sump

The groundwater from the collection sump was allowed to recharge and on May 2, 1990, a groundwater sample was collected by Mr. Jay Hetzel of Aqua-Tech. At the time the samples were collected, the depth to the water level from the surface was approximately 7.0 feet. The sample was collected from the surface fraction by inserting a clean PVC bailer into the sump and transferring the contents into 40 ml vials. A one liter amber glass sample jar was also collected for additional analysis if determined to be necessary at a later date. The samples were cooled to 4°C for transport to the laboratory.

2.4 Disposal of the Contaminated Soil

Aqua-Tech contracted Asphalt Service, Inc., Milwaukee, Wisconsin, to load and transport the contaminated soil to an approved landfill. The contaminated soil had previously been stockpiled on and covered by an impermeable membrane during an underground storage tank closure assessment conducted by Aqua-Tech on November 8 and 9, 1989.

On May 11, 1990, Asphalt Service, Inc. loaded and transported 112.82 tons of the stockpiled, gasoline contaminated soil to Parkview Landfill, Germantown, Wisconsin. The soil was disposed of at Parkview Landfill under profile number WMA16524. The terms of the profile state that the soil is to be codisposed and is not to be thinspread or used as daily cover. Therefore, the soil is not subject to he requirement to complete a Wisconsin Department of Natural Resources Application to Treat or Dispose of Petroleum Contaminated Soil.

A copy of the landfill disposal profile and soil disposal manifest tickets are provided in Appendix B.

2.5 Removal of Piping and Soil Sampling Procedures

Aqua-Tech contracted Asphalt Service, Inc. Milwaukee, Wisconsin, to excavate and remove two 27 foot sections of piping leading from the former tank location to the former pump island. The pipes were removed on May 11, 1990, and the soils beneath the pipes were field screened with a photoionization detector by James Cheshire of Aqua-Tech. Prior to conducting the investigation, the photoionization meter was calibrated and the results recorded on a calibration log sheet to be included in the site file and in a calibration log book. A copy of the calibration log sheet is provided in Appendix C.

No volatile organic compounds (VOCs) were detected upon field screening of the pipe bed material or the clay soil beneath the pipes throughout their entire length. The soils beneath the pump island were also screened. Soil samples were collected at the approximate midpoint of the piping (P-1) and from beneath the former pump island location (P-2) for laboratory analysis for total petroleum hydrocarbons (TPH). Site features are shown in Figure 2-1 and the sampling locations are depicted in Figure 2-2.

The samples were collected by packing the clay soil from beneath the piping/pump island into a teflon-capped 4 ounce sample jar. The samples were cooled to 4°C for transport to the laboratory.

Soil samples were also collected from the midpoint of the piping and beneath the former pump island location for headspace screening with a photoionization detector. The samples were packed into 4 ounce sample jars with a foil lining beneath the cap and heated to approximately 70°F. The probe of the photoionization detector was inserted through the foil camp lining and the results of the screening recorded in a field notebook. No VOCs were detected upon filed screening of the headspace of the two samples collected. The results of the headspace photoionization detector readings are included in Table 3-1.

The trench where the piping was removed was backfilled with the original material removed from the trench.

Photographs of the piping being removed are provided in Appendix D.

FIGURE 2–1

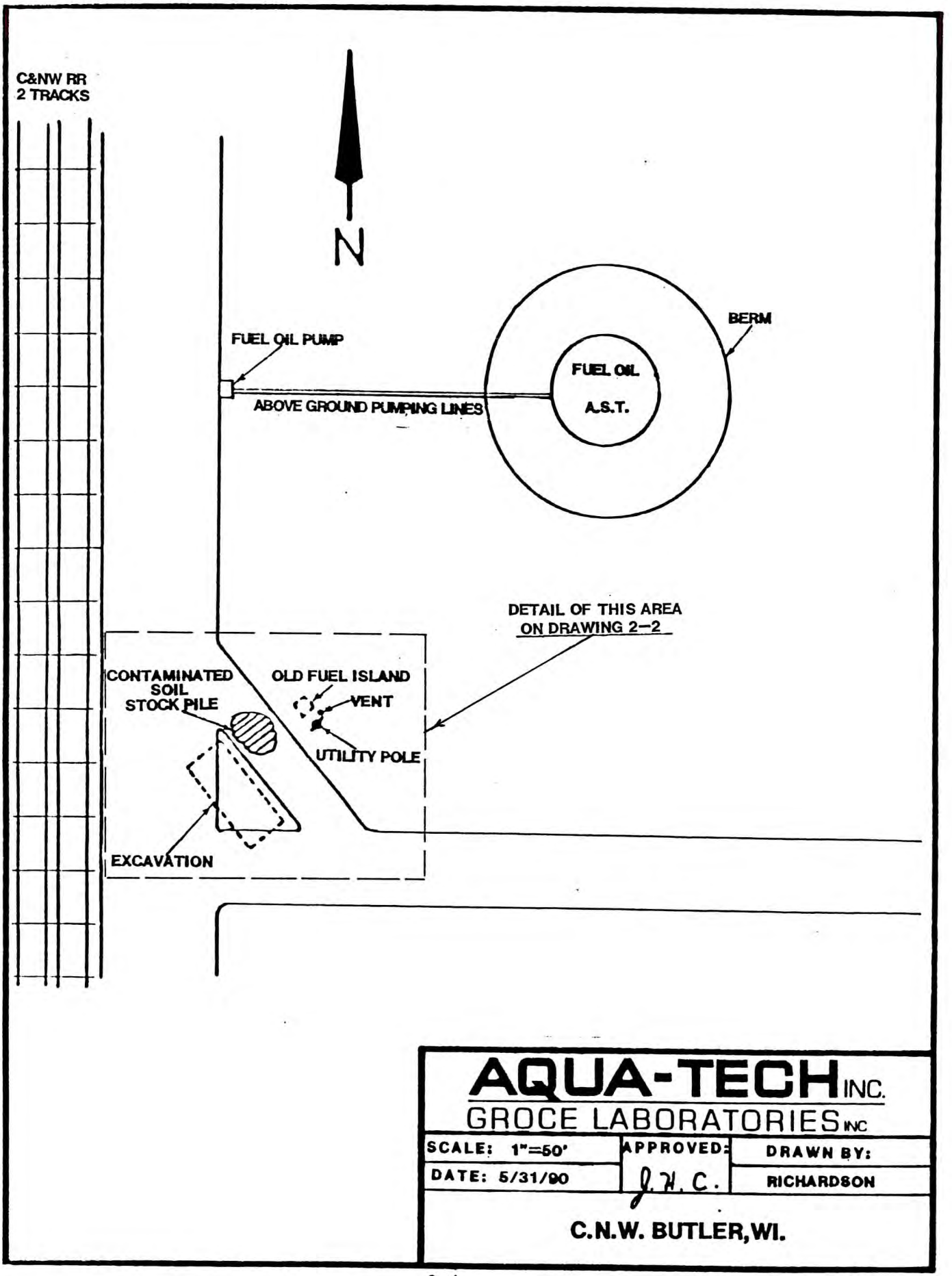
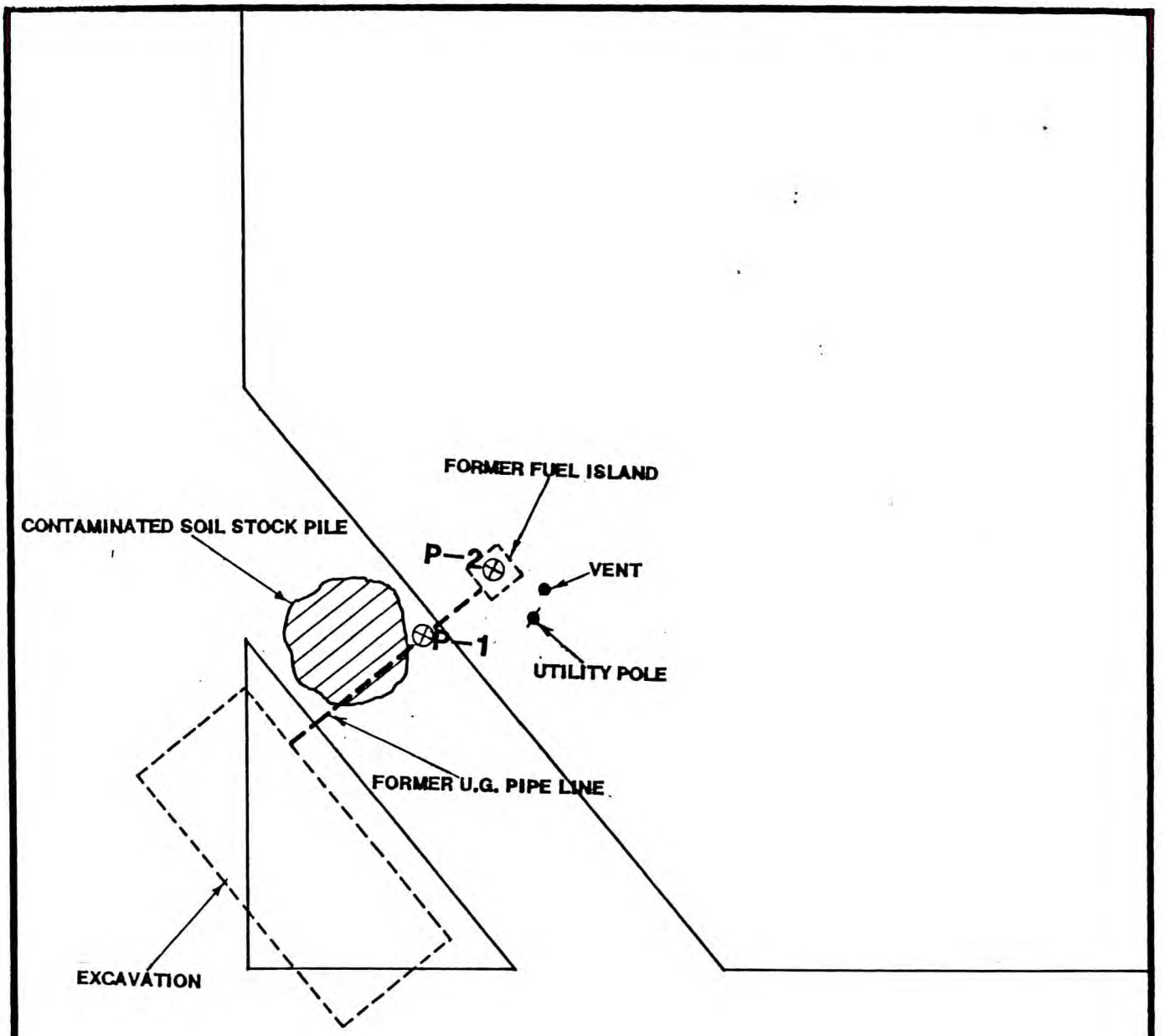

C&NW RR
2 TRACKS
N
FUEL OIL PUMP
BERM
FUEL OIL
A.S.T.
ABOVE GROUND PUMPING LINES
DETAIL OF THIS AREA
ON DRAWING 2–2
CONTAMINATED
SOIL
STOCK PILE
OLD FUEL ISLAND
VENT
UTILITY POLE
EXCAVATION
AQUA-TECH INC.
GROCE LABORATORIES INC
SCALE: 1"=50'
APPROVED:
J. H. C.
DRAWN BY:
RICHARDSON
DATE: 5/31/90
C.N.W. BUTLER, WI.

FIGURE 2–2



NOTE:–
⊗–SUB–SURFACE SOIL SAMPLE

AQUA-TECH INC.		
GROCE LABORATORIES INC.		
SCALE: 1"=20'	APPROVED:	DRAWN BY:
DATE: 5/31/90	J.H.C.	RICHARDSON
C.N.W. BUTLER, WI. (DETAIL)		

2.6 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures was to ensure that the integrity of the samples was maintained during their collection, transportation, and storage through analysis.

Sample identification documents were carefully prepared so that sample identification and chain of custody was maintained and sample disposition controlled. Sample identification documents included:

* Field Notebooks
* Sample Labels
* Chain of Custody Records

Each sample was labeled, physically preserved, and sealed immediately after collection. To minimize handling of sampling containers, labels were filled out prior to sample collection. The sample label was completed using waterproof ink and was firmly affixed to the sample containers. The sample label provided the following information:

* Location
* Sample Number
* Date and Time of Collection
* Analysis Required
* Name of Sampler

A chain of custody was fully completed in duplicate by the Aqua-Tech sampler (See Appendix E) immediately following sample collection.

Transfer of Custody Shipment

The coolers in which the samples were packed were accompanied by the chain of custody record. When

transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification number matched that on the chain of custody record. A copy of the completed chain of custody record was retained by the laboratory until analyses were completed. The record was then transferred to the site file with the analytical results.

3.0 ANALYTICAL PROCEDURES AND RESULTS

3.1 Introduction

This section includes results of chemical analyses of Aqua-Tech collected soil samples for total petroleum hydrocarbons and an Aqua-Tech collected groundwater sample for benzene, toluene, ethylbenzene, and xylene (BTEX).

3.2 Analytical Procedures

Soil samples were analyzed for TPH at Aqua-Tech's laboratory in Port Washington, Wisconsin with a gas chromatograph equipped with a flame ionization detector according to the Modified California Method.

The groundwater sample was analyzed for BTEX at National Environmental Testing, Inc.'s laboratory in Rockford, Illinois with a gas chromatograph equipped with a photoionization detector according to U.S. EPA Method 602.

Specific methodologies utilized are available from the laboratory conducting the analysis. Methodology references contain specific QC criteria associated with the particular methods. These specific requirements include calibration and QC samples and are described in detail within the methods. Daily performance tests and demonstration of precision and accuracy are required.

3.3 Results of the Chemical Analysis of Groundwater Samples

The results of the chemical analysis of groundwater sample "Sump" indicated no BTEX petroleum constituents above the 1.0 ug/l (ppb) laboratory detection limit.

The results of the chemical analysis of the groundwater sample are included in Table 3-1. The original laboratory analytical data is provided in Appendix F.

3.4 Results of the Chemical Analysis of Soil Samples

The results of the chemical analysis of the soil samples collected from beneath the midpoint of the piping (P-1) and from beneath the former pump island location (P-2) indicated no TPH levels exceeding the 1.0 ug/g (ppm) laboratory detection limit.

The results of the chemical analysis of the soil samples are included in Table 3-1. The original laboratory analytical data is provided in Appendix F.

TABLE 3-1

RESULTS OF THE CHEMICAL ANALYSIS

OF

SOIL AND GROUNDWATER SAMPLES

Parameter	Sample "Sump"	Sample P-1	Sample P-2
Sample Description	Groundwater from Collection Sump	Soil from Midpoint of Piping	Soil from Beneath Pump Island
Total Solids (%)	---	82	81
Total Petroleum Hydrocarbons as Gasoline (ug/g)**	---	<1.0*	<1.0*
Benzene (ug/l)	<1.0	---	---
Toluene (ug/l)	<1.0	---	---
Ethylbenzene (ug/l)	<1.0	---	---
Xylene (ug/l)	<1.0	---	---
Photoionization Detector (ppm)***	---	0	0

* The Wisconsin Department of Industry, Labor, and Human Relations (DILHR) remedial action standard for total petroleum hydrocarbons in soil is 10 ug/g (ppm).

** All total petroleum hydrocarbon results were calculated on a dry weight basis as required by DILHR.

*** Headspace reading at approximately 70°F.

4.0 DISCUSSION OF ASSESSMENT RESULTS

4.1 Groundwater

Based on the results of the assessment, the groundwater contamination identified during the underground storage tank closure assessment has been removed. The groundwater contamination was a result of rupturing the tank during the removal process.

On April 26, 1990, 225 gallons of gasoline contaminated groundwater were pumped out of the collection sump and removed for disposal. After allowing the groundwater in the collection sump to recharge, a groundwater sample was collected from the surface fraction. Chemical analysis of the groundwater sample did not indicate the presence of benzene, toluene, ethylbenzene, or xylene levels above the laboratory detection limit. It is believed that the stiff clay soils surrounding the tank be excavation and collection sump prevented the migration of the petroleum contaminants. This allowed the groundwater that was contaminated above the Wisconsin Administrative Code Chapter N.R. 140 Groundwater Quality Standards to be pumped out and removed for disposal.

4.2 Soil

Based on the results of the underground storage tank closure assessment, all of the soil contamination resulting from the rupture of the tank during the removal process has been removed. This contaminated soil has since been disposed of at a WDNR approved landfill.

Based on the results of this assessment, the piping and former pump island location are not believed to be contaminated with petroleum products. No volatile organic compounds were detected upon field screening with a

photoionization detector and chemical analysis of two samples did not indicate the presence of total petroleum hydrocarbons.

5.0 RECOMMENDATIONS

After completing the assessment, Aqua-Tech, Inc. believes that no further investigation or corrective action is necessary at the site. The soil and groundwater contamination associated with the underground storage tank at the site has been removed and properly disposed.

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

5/8/90 #26188

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Shipper's No. _____

CARRIER: NATIONAL TANK SERVICE OF WI INC. SCAC

Carrier's No. _____
Date April 26, 1990

TO:
Consignee National Tank Serv.
Street 1813 S. 73
Destination Milw. Zip

FROM:
Shipper Northwestern Trans. /Aqua-Tech Inc.
Street N.124th St.
Origin Butler, Wisc. Zip

Route:

Vehicle Number 29

No. Shipping Units	HM	Kind of Packages, Description of Articles (IF HAZARDOUS MATERIALS - PROPER SHIPPING NAME)	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (or exemption)
1-TT		WATER	N/A	N/A	225	GALS.	
		FEDERAL & STATE REGULATIONS					
		Generators material disposed of		Pumped out free liquids only			
		in accordance with all rules and regulations at our Hazardous		NO SLUDGE TAKEN			
		Waste Facility, 1813 S. 73rd St. West Allis, WI					
		E. P. A. Indent. No. W I D O 73838880 and WI D.N.R. No. 10848					

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE:
Prepaid ☐
Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

FREIGHT CHARGES
☐ PREPAID ☐ COLLECT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
Per _____

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ YES ☐ NO — FURNISHED BY CARRIER
DRIVER SIGNATURE:

SHIPPER: NORTHWESTERN TRANP. /AQUA-TECH INC.
PER: F. M. Wolter
DATE: 4/26/90

CARRIER: NATIONAL TANK SERV.
PER: T. F.
DATE: 4/26/90

8-BLS-BC
REV 7/87

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

CONTAINS HAZARDOUS MATERIALS

Ton 6558 B-10

SPECIAL WASTE MANAGEMENT DECISION

3/12 WMA16524
Waste Profile Sheet Code

I. Request For Decision: X Initial ___ Renewal

GENERATOR NAME: Chicago + Northwestern Transportation Co., Butler Railroad Yard 119th Street + Hampton Avenue

CITY, STATE/PROVINCE: Milwaukee, WI 53225

WASTE NAME(S): Gasoline Contaminated Soil

PROPOSED MANAGEMENT FACILITY: Parkview Landfill

PROPOSED INTERMEDIATE TRANSFER FACILITY: N/A TRANSPORTER: Agua-Tech, Inc.

WMNA REQUESTOR: Peggy Slind SIGNATURE: Peggy Slind

II. TECHNICAL MANAGER DECISION: (circle one) (APPROVED) DISAPPROVED ___ Check if additional information is attached.

If Disapproved, Explain:

If Approved, Complete A, B, C and D Below: LANDFILL (CODISPOSAL)

A Management Method(s):

B Precautions, Conditions, or Limitations on Approval: ~~Per the requirements of the~~ site's special waste plan ~~Waste must be greater than 40% solids~~ and contain 0% free liquids

C Decision Expiration Date: 9/1/90

D For Type A Wastes, Laboratory Analysis of a Representative Sample Was: (Check only one)

___ Waived ___ Supplied By Generator ✓ From a WMI-Approved Lab ___ From Both Generator and WMI-Approved Lab

TECH. MGR. SIGNATURE: Richard Fagel NAME: (Print) Richard Fagel DATE: 3/14/90

III. WMI MANAGEMENT FACILITY GENERAL MANAGER DECISION: (circle one) (APPROVED) DISAPPROVED

If Approved, State any Additional Precautions, Conditions or Limitations:

GENERAL MGR SIGNATURE: Robert Borkenhagen NAME: (Print) Robert Borkenhagen DATE: 3-19-90

IV. WMI INTERMEDIATE TRANSFER FACILITY GENERAL MANAGER DECISION: (circle one) APPROVED DISAPPROVED

If Approved, State any Additional Precautions, Conditions or Limitations:

(90-141)

GENERAL MGR SIGNATURE: ___ NAME: (Print) ___ DATE: ___

Waste Management of North America

Ton 658

GENERATOR'S SPECIAL WASTE PROFILE SHEET

TYPE A Waste

PLEASE PRINT IN INK OR TYPE

WMA 16524

Waste Profile Sheet Code

INSTRUCTIONS FOR COMPLETING THIS FORM ARE ATTACHED

(Shaded Areas For WMNA Use Only)

Renewal Date of Service Agreement:

WMNA Sales Rep#:

A. WHERE IS THE WASTE GENERATED?

1. Generator Name: Chicago and Northwestern Transportation Company - Butler Railroad Yard
2. Facility Address (site of waste generation): 119th Street and Hampton Avenue
3. Generator City, State/Province: Milwaukee, Wisconsin
4. Zip/Postal Code: 53225
5. Generator USEPA/Federal ID: WIR 076160373 N/A
6. Generator State/Province ID: N/A
7. Technical Contact: Donald York
8. Phone: (312) 559-6127

B. WHERE ARE WASTE MANAGEMENT, INC. INVOICES SENT?

1. ☐ Generating Facility (A, above), or
2. Company Name: Aqua-Tech, Inc.
3. Phone: (414) 284-5744
4. Address: 140 South Park Street
5. Generator City, State/Province: Port Washington, Wisconsin
6. Zip/Postal Code: 53074

C. PHYSICAL CHARACTERISTICS OF WASTE (See Instructions)

1. Name of Waste: Gasoline contaminated soil
2. Process Generating Waste: Excavation from underground storage tank bed.
3. Special Handling Instructions: Landfill codisposal. Not to be used as cover material.

4. Color	5. Does the waste have a strong incidental odor?	6. Physical State @ 70°F/21°C:	7. Layers	8. Specific Gravity:	9. Free Liquids:
Brown	☐ No ☒ Yes if so, describe: Gasoline	☒ Solid ☐ Semi-Solid ☐ Liquid ☐ Powder Other: —	☐ Multi-layered ☐ Bi-layered ☒ Single Phased	Range Unknown —	☐ Yes ☒ N Volume: 0 %

10. pH: ☐ ≤ 2 ☐ > 2-4 ☐ 4-7 ☐ 7 ☒ 7-10 ☐ 10- < 12.5 ☐ ≥ 12.5 ☐ Range ☐ NA

11. Flash Point: ☐ None ☐ <140°F/60°C ☐ 140°-199°F/60°-83°C ☒ ≥ 200°F/93°C ☒ Closed Cup ☐ Open Cup

D. TRANSPORTATION INFORMATION

1. Method of Shipment: ☐ Bulk Liquid ☐ Bulk Sludge ☒ Bulk Solid ☐ Drum/Box ☐ Other
2. Annual Amount/Units: ≈ 150 yd.³
3. Supplemental Information: —

4. Is this a DOT hazardous material? ☒ No ☐ Yes (If so, complete 5, 6 &7) 5. Hazard Class/ID #: N/A
6. Reportable Quantity/ Units (lb/kg): N/A 7. Shipping Name: N/A

☒ Check this box if additional information is attached.

Turn Page and Complete Side 2

Waste Management of North America
GENERATOR'S SPECIAL WASTE PROFILE SHEET

PLEASE PRINT IN INK OR TYPE

E. CHEMICAL COMPOSITION

1.

	RANGE MIN.-MAX.	
Gasoline contaminated soil	- 100	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%
	-	%

Please note: The chemical composition total in the maximum column must be greater than or equal to 100%. Total: 100 %

2. Does this waste contain any of the following (provide concentration if known):

	NO or	LESS THAN or	ACTUAL
PCB's	☒	☐ <50 ppm	____ ppm
Cyanides	☒	☐ <50 ppm	____ ppm
Sulfides	☒	☐ <50ppm	____ ppm
Phenolics	☒	☐ <50 ppm	____ ppm

F. METALS

1. Does this waste contain any of the following metals (provide concentration if known):

Arsenic	☐<5 or NT ppm		Barium	☐<100 or NT ppm		Cadmium	☐<1 or NT ppm
Chromium	☐<5 or NT ppm	Total	Lead	☐<5 or 13 ppm		Mercury	☐<0.2 or NT ppm
Selenium	☐<1 or NT ppm		Silver	☐<5 or NT ppm		Copper	☐ NT ppm
Nickel	☐ NT ppm		Zinc	☐ NT ppm		E.P. Toxic Lead	<1.0mg/l ppm

2. Indicate method used to determine concentration (if provided): ☒ EP TOX ☐ TCLP, or ☒ Total

G. GENERATOR CERTIFICATION

By signing this profile sheet, the generator certifies that unless clearly stated above or in attachments:

1. This waste is not a "Hazardous Waste" as defined by USEPA or Canadian Federal regulation and/or the state/province.
2. This waste does not contain regulated quantities of PCB's (Polychlorinated Biphenyls).
3. This sheet and its attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed.
4. The Contractor's Definition of Special Waste (Form WMNA 0038 AD) has been read, signed and attached.

Donald R York
5. Signature

Director Environmental Control
6. Title

DONALD R. YORK
7. Name (Type or Print)

3-7-90
8. Date

CONTRACTOR'S DEFINITION OF SPECIAL WASTE

1. "Special Waste" means Type A or Type B Special wastes as defined below.

WMA 16594
WASTE PROFILE CODE

2. "Type A Special Waste" means any waste, from a commercial or industrial activity meeting any of the following descriptions.
   a. A containerized waste (e.g., a drum, portable tank, lugger box, roll-off box, pail, bulk tanker, etc.) listed in b.-g. below.
   b. A waste containing free liquids.
   c. A sludge waste.
   d. A waste from an industrial process.
   e. A waste from a pollution control process.
   f. Residue and debris from the cleanup of a spill of a chemical substance or commercial product or a waste listed in a.-e. or g.
   g. Contaminated residuals, or articles from the cleanup of a facility generating, storing, treating, recycling, or disposing of wastes listed in a.-f.

3. **Incidental Amounts of Special Waste**
   The Contractor recognizes that many customers will produce some "Type B Special Waste," as defined below. Incidental quantities of "Type B Special Waste," do not require a Generator's Type B Special Waste Profile Sheet (Form WMNA-0089B) to be signed by the customer. However, the customer must identify the type and amount of Type B Special Wastes which will be provided to the Contractor in incidental amounts by completing the box in the lower right corner.

4. **"Type B Special Waste" means any waste from a commercial or industrial activity meeting the descriptions which follow:**
   a. **Friable asbestos waste from building demolition or cleaning;** wall board, wall spray coverings, pipe insulation, etc. Nonfriable asbestos is not a special waste unless it has been processed, handled or used in such a way that asbestos fibers may be freely released. Asbestos-bearing industrial process waste is a "Type A Special Waste.
   b. **Commercial products or chemicals which are off-specification, outdated, unused or banned.** Out-dated or off-specification, uncontaminated food or beverage products in original consumer containers are not included in this category, however, containers which once held commercial products or chemicals are included unless the container is empty. A container is empty when: All wastes have been removed that can be removed using the practices commonly employed to remove materials from the type of container, e.g., pouring, pumping or aspirating, and an end has been removed (for containers in excess of 25 gallons), and no more than 1 inch (2.54 centimeters) of residue remains on the bottom of the container or inner liner, or no more than 3% by weight of the total capacity of the container remains in the container (containers $\leq$ 110 gallons), or no more than 0.3% by weight of the total capacity of the container remains in the container (containers > 110 gallons.) Containers which once held **ACUTELY HAZARDOUS WASTES** must be triple rinsed with an appropriate solvent or cleaned by an equivalent method. Containers which once held substances regulated under the Federal Insecticide, Fungicide, and Rodenticide Act must be empty according to label instructions or triple rinsed.
   c. **Untreated bio-medical waste - Any waste capable of inducing infection due to contamination with infectious agents from a bio-medical source including but not limited to a medical practitioner, hospital, medical clinic, nursing home, university medical laboratory, mortuary, taxidermist, veterinarian, veterinary hospital or animal testing laboratory.** Sharps from these sources must be rendered harmless or placed in needle puncture proof containers. Residue from incineration of infectious wastes is a "Type A Special Waste."
   d. **Treated bio-medical wastes - Any wastes from a bio-medical source including but not limited to a hospital, medical clinic, nursing home, medical practitioner, mortuary, taxidermist, veterinarian hospital, animal testing laboratory, or university medical laboratory which has been autoclaved or otherwise heat treated or sterilized so that it is no longer capable of inducing infection.** Any sharps from these sources must be rendered harmless or placed in needle puncture proof containers.
   e. **Liquids and sludges from septic tanks, food service grease traps, or washwater and wastewaters from commercial laundries,** laundromats and car washes unless these wastes are managed at commercial or public treatment works.
   f. **Chemical-containing equipment removed from service.** Examples: filters, cathode ray tubes, lab equipment, acetylene tanks, fluorescent light tubes, etc.
   g. **Waste produced from the demolition or dismantling of industrial process equipment or facilities contaminated with chemicals from the industrial process** Chemicals or wastes removed or drained from such equipment or facility are "Type A Special Wastes."

CUSTOMER ACKNOWLEDGES THAT HE HAS READ THE FOREGOING DEFINITION AND HAS IDENTIFIED THE TYPES AND AMOUNTS OF ANY TYPE B WASTE STREAMS PRODUCED IN INCIDENTAL AMOUNTS.

Chicago & North Western
CUSTOMER

Donald R York
AUTHORIZED SIGNATURE

3-7-90
DATE

INCIDENTAL WASTE TYPES AND AMOUNTS:
Type A (f) Gasoline contaminated soil
≈150 yd³

General Manager of WMNA Division concurs that the above amounts of "Type B Special Wastes" are incidental to the load.
Signature:

Form WMNA-0038AD (2/89) Waste Management of North America
White - WMNA Division Canary - Customer

WMA 1165121

WASTE MANAGEMENT OF WISCONSIN, INC.
(PURSUANT TO NR181.16)

THIS FORM AND ANY SUPPLEMENTAL INFORMATION SHOULD BE RETURNED TO:

Parkview Landfill
N96 W13475 County Line Road
Menomonee Falls, WI 53051

GENERATOR NAME: Chicago and Northwestern Transportation Company-Butler Railroad Yard

GENERATING FACILITY NAME/ADDRESS: Chicago and Northwestern Transportation Company
119th Street and Hampton Avenue
Milwaukee, WI 53225

COMPANY CONTACTS:

GENERAL Donald York TITLE Div. Environmental Control DATE 3/7/90
TECHNICAL James H. Cheshire TITLE Field Chemist (Aqua-Tech) DATE 3/7/90

WASTE NAME: Gasoline contaminated Soil

PROCESS GENERATING WASTE: Excavation from underground storage tank bed

THE UNDERSIGNED DOES HEREBY REPRESENT TO Waste Management of Wisconsin-Parkview Landfill
(Insert Name of Disposal Company) THAT:

1. The referenced profile sheet had been executed by (Donald R. York (Insert Name of Authorized Signatory) on 3-7-90 (Insert date)

2. The waste does NOT contain the halogenated compounds tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, ortho-dichlorobenzene, dichlorodifluoromethane, 1,1,2-trichloro-1,2, 2-trifluoroethane, trichlorofluoromethane, 1,1-dichloroethylene, and 1,2-dichloroethylene at greater than 1% (10,000 ppm) total solvent concentration. This listing includes any combination of the above named halogenated compounds where the total concentration of the sum of the concentrations of the individual compounds exceeds 1% or 10,000 ppm on a weight to weight basis.

3-7-90
(DATE)

GENERATORS AUTHORIZED SIGNATORY:

NAME: DONALD R. YORK
SIGNATURE: Donald R York
TITLE: Dir. Environmental Control

AQUA-TECH
GROCE LABORATORIES

February 19, 1990

Ms. Peggy Slind
Special Waste Coordinator
Parkview Landfill
N96 W13475 County Line Road
Menomonee Falls, WI 53051

Dear Ms. Slind:

Enclosed please find the Special Waste Analysis Report and analytical data for the gasoline contaminated soil from the Chicago and Northwestern Transportation Company - Butler Railroad Yard, Milwaukee, Wisconsin, underground storage tank removal site.

The original Generator's Authorized Signatory forms, Generator's Special Waste Profile Sheet and two Generator's Certification of Representative Sample have been sent to Chicago and Northwestern for the necessary signatures. It should be noted that an additional composite soil sample was collected for flashpoint analysis on January 10, 1990 because the original sample exceeded the maximum holding time before the flashpoint analysis could be conducted. Therefore, an additional Generator's Certification of Representative Sample has been completed.

If you have any questions, please do not hesitate to contact me.

Sincerely,

AQUA-TECH, INC.

James H. Cheshire

James H. Cheshire
Field Chemist

JHC/rk

Enclosure

CORPORATE
Aqua Tech, Inc.
140 S. Park St. Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd. Greer, SC 29651
(803) 877-1048 FAX (803) 877-1872

WASTE MANAGEMENT OF NORTH AMERICA
GENERATOR'S CERTIFICATION OF REPRESENTATIVE SAMPLE

PLEASE PRINT IN INK OR TYPE

(Shaded area for WMNA use only) WMNA Sales Rep. #:

WMA 16524
Waste Profile Sheet Code

This completed form must be returned, with the representative sample, to:

Peggy Sliad
Parkview Landfill
N96 W13475 County Line Road, Menomonee Falls, WI 53051

INSTRUCTIONS FOR COMPLETING THIS FORM ARE FOUND ON THE OPPOSITE SIDE. In order to determine whether Waste Management of North America (WMNA) can accept the Special Waste described in the Generator's Special Waste Profile Sheet referenced above, you must supply a representative sample of the waste, or sign Part E below certifying that analytical data presented to Waste Management were derived from testing of a representative sample. A representative sample is defined as a sample obtained using any of the applicable sampling methods specified in Federal, State or Provincial Regulations. If you collect a representative sample of your waste, apply the peel off label and ship your sample along with this form to the address noted above. If you have any questions, please refer to the instructions for this form, or contact your WMNA sales representative.

A. SAMPLING METHOD (Indicate the method used and sign line 5 in Section C to certify a representative sample was taken)

1. ☐ I have obtained a representative sample of the waste material described in the Generator's Special Waste Profile Sheet referenced above according to the sampling methods specified in 40 CFR 261-Appendix I or equivalent Canadian rules.
2. ☒ I have obtained a representative sample of the waste material described in the Generator's Special Waste Profile Sheet referenced above by an equivalent method.

B. SAMPLING SOURCE (e.g., drum, lagoon, pit, pond, tank, vat)

Stockpiled Soil

C. REPRESENTATIVE SAMPLE CERTIFICATION AND SAMPLE LABEL (COMPLETE LABEL BEFORE REMOVING)

1. Waste Profile Sheet Code:	WMA 16524	1. Waste Profile Sheet Code:
2. [redacted] Generator's Name:	Chicago and Northwestern Transportation Company	2. Generator's Name:
3. [redacted] Name of Waste:	Gasoline Contaminated Soil	3. Name of Waste:
4. [redacted] Sample Hour/Date:	2:30 11/8/89	4. Sample Hour/Date:
5. [redacted] Sampler's Signature:	James H. Cheshire	5. Sampler's Signature:

6. Print Sampler's Name: James H. Cheshire
7. Sampler's Title: Field Chemist
8. Sampler's Employer (if other than generator, see D. below): Aqua-Tech, Inc.

D. WITNESS VERIFICATION (if required) In most circumstances the customer will obtain the sample. However, in those cases in which WMNA or another contractor obtains the sample, one of the customer's employees must be present to direct the particular source to be sampled, to witness the sampling, and to complete this Part D.

I was personally present during the sampling described. I directed the waste source to be sampled, and I verify the information noted above.

1. Witness' Signature: F. M. Wolter
2. Witness' Name: FRED M. WOLTER
3. Witness' Title: TMSM W.
4. Witness' Employer: C T M. W. Transportation Co
5. Date: 11-8-89

E. REPRESENTATIVE DATA CERTIFICATION (Complete Parts A, B, & C to the extent possible)

By signing below the customer is certifying that:
The analytical data presented to Waste Management of North America were derived from testing of a representative sample taken in accordance with one of the methods listed in Part A of this form.

James H. Cheshire
Signature

Field Chemist
Title

James H. Cheshire
Name

02-09-1990
Date

Printed on recycled paper

WASTE MANAGEMENT OF NORTH AMERICA
GENERATOR'S CERTIFICATION OF REPRESENTATIVE SAMPLE

PLEASE PRINT IN INK OR TYPE

(Shaded area for WMNA use only) WMNA Sales Rep. #: WMA 16524 Waste Profile Sheet Code

This completed form must be returned, with the representative sample, to:

Peggy Slind
Parkview Landfill
N96 W13475 County Line Road, Menomonee Falls, WI 53051

INSTRUCTIONS FOR COMPLETING THIS FORM ARE FOUND ON THE OPPOSITE SIDE. In order to determine whether Waste Management of North America (WMNA) can accept the Special Waste described in the Generator's Special Waste Profile Sheet referenced above, you must supply a representative sample of the waste, or sign Part E below certifying that analytical data presented to Waste Management were derived from testing of a representative sample. A representative sample is defined as a sample obtained using any of the applicable sampling methods specified in Federal, State or Provincial Regulations. If you collect a representative sample of your waste, apply the peel off label and ship your sample along with this form to the address noted above. If you have any questions, please refer to the instructions for this form, or contact your WMNA sales representative.

A. SAMPLING METHOD (Indicate the method used and sign line 5 in Section C to certify a representative sample was taken)

1. ☐ I have obtained a representative sample of the waste material described in the Generator's Special Waste Profile Sheet referenced above according to the sampling methods specified in 40 CFR 261-Appendix I or equivalent Canadian rules.
2. ☒ I have obtained a representative sample of the waste material described in the Generator's Special Waste Profile Sheet referenced above by an equivalent method.

B. SAMPLING SOURCE (e.g., drum, lagoon, pit, pond, tank, vat)

Stockpiled Soil

C. REPRESENTATIVE SAMPLE CERTIFICATION AND SAMPLE LABEL (COMPLETE LABEL BEFORE REMOVING)

1. Waste Profile Sheet Code:	WMA 16524	1. Waste Profile Sheet Code:
2. [redacted] Generator's Name:	Chicago and Northwestern Transportation Company	2. Generator's Name:
3. [redacted] Name of Waste:	Gasoline Contaminated Soil	3. Name of Waste:
4. [redacted] Sample Hour/Date:	7:45 1-10-90	4. Sample Hour/Date:
5. [redacted] Sampler's Signature:		5. Sampler's Signature:

6. Print Sampler's Name: Jay S. Hetzel
7. Sampler's Title: Water Quality Specialist
8. Sampler's Employer (if other than generator, see D. below): Aqua-Tech, Inc.

D. WITNESS VERIFICATION (if required) In most circumstances the customer will obtain the sample. However, in those cases in which WMNA or another contractor obtains the sample, one of the customer's employees must be present to direct the particular source to be sampled, to witness the sampling, and to complete this Part D.

I was personally present during the sampling described. I directed the waste source to be sampled, and I verify the information noted above.

1. Witness' Signature: F.M. Wolter
2. Witness' Name: Fred M. Wolter
3. Witness' Title: Jr. M. Sr. M. Mo.
4. Witness' Employer: C+N.W. Transportation Co.
5. Date: 1-10-90

E. REPRESENTATIVE DATA CERTIFICATION (Complete Parts A, B, & C to the extent possible)
By signing below the customer is certifying that:
The analytical data presented to Waste Management of North America were derived from testing of a representative sample taken in accordance with one of the methods listed in Part A of this form.

Signature — Title: Water Quality Specialist

Jay S. Hetzel (Name) — Date: 2-9-90

SPECIAL WASTE ANALYSIS REPORT

03-41-101765

WMA 16524
Waste Profile Sheet Code
FROM SAMPLE CONTAINER

LOCATION OF ORIGINAL

This Report is intended for the sole use and benefit of Waste Management and its companies. No representation concerning significance of the reported data is made to any other person or entity.

LABORATORY NAME: Aqua-Tech, Inc.
ADDRESS: 145 S. Park Street, Port Washington, WI 53074 LAB MGR. PHONE: 414 284-6178
DATE SAMPLE RECEIVED AT LAB: 11/04/89 | 1-10-90 DATE SAME TAKEN: 11/03/89 | 1-10-90
LAB SAMPLE NUMBER ASSIGNED: W2257-1 | W2457 CERTIFICATION OF REP. SAMPLE OBTAINED? ☒ YES ☐ NO

CERTIFICATION: Except as explicitly noted, all analytical data reported below were obtained under my direction and supervision. For Chemical Waste Management, Inc. companies, sample preparation and analytical methods and analytical equipment specified or approved in the facility's waste analysis plan were used in conducting this analysis. This laboratory follows a quality assurance control program.

DATE OF REPORT: 11/29/89 | 1-10-90
LAB MANAGER NAME: Bruce ten Haken
SIGNATURE:

PHYSICIAL CHARACTERISTICS OF WASTE

SAMPLE VOLUME	COLOR	DOES THE WASTE HAVE A STRONG INCIDENTAL ODOR?	PHYSICAL STATE @ 70°F	LAYERS	FREE LIQUIDS
4 ounces	Brown	☒ YES ☐ NO IF KNOWN, DESCRIBE Gasoline	☒ SOLID ☐ SEMI-SOLID ☐ LIQUID ☐ POWDER	☐ MULTILAYERED ☐ BI-LAYERED ☒ SINGLE PHASED	☐ YES ☒ NO VOLUME: 0 %

✓	Test	As Received	Extraction Procedure	Date of Analysis
	Specific Gravity			
✓	pH, s.u.	8.81		11-29-89
	Acidity, %, as			
	Alkalinity, %, as			
	C.O.D., mg/l			
	B.O.D., mg/l			
✓	Total Solids @ 105°C, %	81		11-13-89
	Total Dissolved Solids, mg/l			
	R.O.E. @ 180°C, mg/l			
✓	Flash Point, °F (closed cup)	>200		1-10-90
	Ash Content, on ignition, %			
	Heating Value, BTU/lb			
	Arsenic, as As, mg/l			
	Barium, as Ba, mg/l			
	Cadmium, as Cd, mg/l			
	Chromium, Total, as Cr, mg/l			
	Chromium, Hexavalent, as Cr^{+6}, mg/l			
	Cobalt, as Co, mg/l			
	Copper, as Cu, mg/l			
	Iron, Total, as Fe, mg/l			
	Iron, Dissolved, as Fe, mg/l			
✓	Lead, as Pb, mg/l	~~<10~~ <10	<10	11-28-89
	Manganese, as Mn, mg/l			
	Magnesium, as Mg, mg/l			
	Mercury, as Hg, mg/l			
	Nickel, as Ni, mg/l			
	Selenium, as Se, mg/l			
	Silver, as Ag, mg/l			
	Thallium, as Tl, mg/l			
	Zinc, as Zn, mg/l			
✓	Total Lead	13 ppm		11-13-89
	Bicarbonates, as HCO_3, mg/l			
	Bromides, as Br, mg/l			
	Carbonates, as CO_3, mg/l			
	Chlorides, as Cl, mg/l			
	Fluorides, as F, mg/l			
	Nitrates, as NO_3, mg/l			
	Nitrites, as NO_2, mg/l			
	Phosphates, as P, mg/l			
	Sulfates, as SO_4, mg/l			
	Sulfides, as S, mg/l			

✓	Test	As Received	Extraction Procedure	Date of Analysis
	Sulfur, as S, %			
	Phenols, mg/l			
	Cyanides, as CN, Total mg/l			
	Cyanides, as CN, Free mg/l			
	Ammonia Nitrogen, as N, mg/l			
	Total Kjeldahl Nitrogen, as N, mg/l			
	Total Alkalinity, P, as $CaCO_3$, mg/l			
	Total Alkalinity, M, as $CaCO_3$, mg/l			
	Total Hardness, as $CaCO_3$, mg/l			
	Calcium Hardness, as $CaCO_3$, mg/l			
	Magnesium Hardness, as $CaCO_3$, mg/l			
	Oil and Grease, mg/l			
	Paint Filter Test, free liquids, %			
	Water Content, as H_2O, %			
	Aldrin, mg/l			
	Chlordane, mg/l			
	DDT, mg/l			
	Dieldrin, mg/l			
	Heptachlor, mg/l			
	Parathion, mg/l			
	Endrin, mg/l			
	Lindane, mg/l			
	Methoxychlor, mg/l			
	Toxaphene, mg/l			
	2,4-D, mg/l			
	2,4,5-TP (Silvex), mg/l			
✓	TPH - Gasoline	46 mg/g		11-23-89
	PCBs, mg/l			
✓	Benzene	<1 mg/g		11-23-89
	pH Screen, s.u.			
	Cyanide Screen, (+,-)			
	Flammability Screen, (+,-)			
	Oxidizer Screen, (+,-)			
	Radiation Screen, (+,-)			
	Sulfide Screen, (+,-)			
	Water Mix Screen, (+,-)			
✓	Toluene	3.1 mg/g		11-23-89
✓	Ethylbenzene	1.1 mg/g		11-23-89
✓	Xylene			

AQUA-TECH
GROCE LABORATORIES

ANALYTICAL LABORATORY REPORT

WMA16524

WO# 90730

Sample #: W2457

Customer: CWW - Butler

Date Sampled: 1-10-90

Date Received: 1-10-90

Date Wanted: 1-10-90

Lab Director Approval: [signature] 1-10

ATI Contact Name:

Sample Description: Soil #4 Composite

PARAMETER	W2457				Tech ID	Date Analysis Completed
Flashpoint	>200°F				BT	1-10-90

CORPORATE
Aqua Tech, Inc.
1405 Port St Port Washington, WI 53074

TREATMENT FACILITY
Groce Laboratories, Inc.

AQUA-TECH GROCE LABORATORIES

CORPORATE
Aqua-Tech, Inc.
140 S. Park St., Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO. 90730 | PROJECT NAME: CNW- Butler

SAMPLERS: (Signature)

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CON-TAINERS	Flashpoint						REMARKS
W2457	1-10-90	7:45	x		#4 Composite Soil Sample	1	X						

Relinquished by: (Signature) — Date / Time: 1/10/90 7:00 — Received by: (Signature) — Date / Time:

Relinquished by: (Signature) — Date / Time: — Received by: (Signature) — Date / Time:

Relinquished by: (Signature) — Date / Time: — Received for Laboratory by: (Signature) 7:45 1-10-90

Remarks:

Report to:
Name: Jim Cheshire
Street:
City: State: Zip:
Phone no. ( )

Remarks:

MAIL

WMA 16524

WATER OR WASTEWATER

ANALYTICAL LABORATORY REPORT

Sample #: WZ257 A-D non DOT

Customer: CNW Railroad - Butler

Date Sampled: 11-8-89

Date Received: 11-9-89

Date Tested: 11-23-89

Lab Director Approval: [signature] 11-29-89

ATI Contact Name:

Sampling Labor:

Vehicle Mileage:

Lab I.D. Number

Sample Description ~ 125 yd³

Parameter	WZ257 A	WZ257 B	WZ257 C	WZ257 D	Tech ID	Date Analysis Completed
total solids	87 %	79 %	93 %	81 %	PS	11-13-89
TPHC- gasoline	< 10 mg/g	< 10 mg/g	< 10 mg/g	46 mg/g	YAH	11-23-89
Benzene	—	—	—	< 1.0 mg/g	YAH	11-23-89
Toluene	—	—	—	3.1		
Ethylbenzene	—	—	—	1.1		
Xylene	—	—	—	14		
pH	—	—	—	8.81	ET	11-29-89
total Pb	—	—	—	13 ppm	MC	11-15-89
E.P. — Pb if total is > 5 ppm	—	—	—	< 1.0 mg/l	BF	11-28-89

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
	CNW Railroad - Butler

SAMPLERS: (Signature) James H. Cheshire

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH (gasoline)	BTEX	pH	Total Solids	Total Pb.	E.P. Tox Pb (if total Pb > 75 ppm)	REMARKS
W2257 A	11-8-89	1:45		x	#1	1	x			x			HNU readings: 0 ppm
W2257 B		2:00		x	#2	1	x			x			0 ppm
W2257 C		2:15		x	#3	1	x			x			0 ppm
W2257 D		2:30	x		#4 Composite Soil Sample	1	x	x	x	x	x	x	2-7 ppm

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
James H. Cheshire	11-8-89 4:45		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	
		Paul Shimek 11-8-89	

Remarks

Report to:
Name Jim Cheshire
Street
City State Zip
Phone no. ( )
Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

WMA11624

Parkview Landfill
N96 W13475 County Line Road
Menomonee Falls, WI 53051
(414) 253-8620

WMA16524

SERVICE AGREEMENT
NON-HAZARDOUS WASTE DISPOSAL

The above-named disposal facility and corporation are referred to herein as "Facility" and "Contractor," respectively.

CUSTOMER'S BILLING NAME
Chicago & Northwestern Transportation Company Bill To: Aqua-Tech, Inc.

CUSTOMER'S BILLING ADDRESS
One Northwest Center Street Bill To: 140 South Park Street

CITY, STATE/PROVINCE, ZIP/POSTAL CODE
Chicago, IL 60606 Bill To: Port Washington, WI 53074

CUSTOMER CONTACT
Donald York

PHONE NUMBER
(312) 559-6127

BANK REFERENCE
On file

BANK CONTACT PHONE NUMBER
On file ( )

This is a legally binding contract, and Contractor agrees to provide and Customer agrees to accept the waste disposal services subject to the terms and conditions specified in this contract.

ESTIMATED MONTHLY AMOUNT OF WASTE FOR LAND DISPOSAL:

approximately 150 cubic yards of contaminated soil
(Include units e.g., cubic yards, pounds, kilograms)

SPECIAL INSTRUCTIONS:
Follow all conditions for disposal stated on the attached Special Waste Management Decision (Profile No. WMA16524) Section II B. All loads must be manifested.

THE TERMS AND CONDITIONS ON REVERSE SIDE ARE PART OF THIS AGREEMENT.

CUSTOMER

Authorized Signature

DIRECTOR ENVIRONMENTAL CONTROL
Title

CONTRACTOR

Robert Borkenhagen, General Manager
Representative

03/27/90
Date

Parkview Landfill
N96 W13475 County Line Road
Menomonee Falls, WI 53051
(414) 251-3790 • FAX (414) 255-3798

A Waste Management Company

March 20, 1990

Dear Special Waste Generator:

Attached is a copy of the approval to accept your special waste. Please review this approval and take note of Section II B, - Precautions, Conditions, or Limitations on approval. This section identifies the regulatory constrains and Waste Managements Company's constraints on landfilling this waste.

If you have any questions, please contact me.

Sincerely,

Peggy Slind

Peggy Slind
Landfill Special Waste Coordinator

/81489
Attachment

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146828

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

LOOP #21
5-11-90
2:58PM ID

A Waste Management Company

DATE: 5/11/90

44000 lb IN

TRANSPORTER: Aquatech

GENERATOR: ~~Chicago~~ Chicago Northwest

GENERATORS SIGNATURE: _____ / / Date

LOOP #21
5-11-90 3:19PM ID

WASTE DESCRIPTION: Contaminated soil

44000 lb GR
26000 lb TA
18000 lb NT

PROFILE # LMA 16524 QUANTITY _____

ACCEPTED BY: RRegan TIME: 5/11/90 Date TRUCK NO. 18000

DRIVERS SIGNATURE: Bob Hyland 5/11/90 Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146801

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

LOOP #26
5-11-90
8:37AM ID

A Waste Management Company

DATE: 5/11/90

33820 lb IN

TRANSPORTER: Asphalt Service

GENERATOR: Chicago & Northwestern Transportation Co. Butler Railroad Yard

GENERATORS SIGNATURE: _____ / / Date

LOOP #26
5-11-90 8:49AM ID

WASTE DESCRIPTION: Residual contaminated Soil

33820 lb GR
14820 lb TA
19000 lb NT

PROFILE # LMA 16524 QUANTITY _____

ACCEPTED BY: RRegan TIME: 5/11/90 Date TRUCK NO. 19000

DRIVERS SIGNATURE: Ronald Grach / / Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146802

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

A Waste Management Company

LOOP #16
5-11-90 10:50AM ID
34680 lb IN

DATE: 5/11/90

TRANSPORTER: Asphalt Service Aquatech

GENERATOR: Chicago & Northwestern Butler

GENERATORS SIGNATURE: _____ / / Date

LOOP #16
5-11-90 11:08AM ID
34680 lb GR
16640 lb TA
18040 lb NT

WASTE DESCRIPTION: contaminated Soil

PROFILE # WMA 16524 QUANTITY _____

ACCEPTED BY: RRogers TIME: 5/11/90 Date

TRUCK NO. 27

DRIVERS SIGNATURE: John Wach / / Date

BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146804

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

A Waste Management Company

LOOP # 4
5-11-90 1:45PM ID
35280 lb IN

DATE: 5/11/90

TRANSPORTER: Aqua Tech Inc

GENERATOR: Chicago - Northwestern Butler

GENERATORS SIGNATURE: _____ / / Date

LOOP # 4
5-11-90 1:56PM ID
35280 lb GR
16400 lb TA
18880 lb NT

WASTE DESCRIPTION: contaminated Soil

PROFILE # WMA 16524 QUANTITY _____

ACCEPTED BY: RRogers TIME: 5/11/90 Date

TRUCK NO. 27

DRIVERS SIGNATURE: John Wach / / Date

BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146803

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

A Waste Management Compan

LOOP #25
5-11-90 12:01PM ID
37160 lb IN

DATE: 5/11/90

TRANSPORTER: Aquatech

GENERATOR: Chicago + Northwestern Butler

GENERATORS SIGNATURE: _____ / / Date

LOOP #25
5-11-90 12:17PM ID
37160 lb GR
16740 lb TA
20420 lb NT

WASTE DESCRIPTION: Contaminated Soil

PROFILE # WMA 16524 QUANTITY _____

ACCEPTED BY: RRegan TIME: 5/11/90 Date TRUCK NO. 97

DRIVERS SIGNATURE: Jim Wash / / Date BOX NO. _____ _____ TONS/YARD

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146817

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

A Waste Management Compan

LOOP #22
5-11-90 11:45AM ID
58500 lb IN

DATE: 5/11/90

TRANSPORTER: ~~Asphalt Service~~ Aquatech

GENERATOR: Chicago Northwest

GENERATORS SIGNATURE: _____ / / Date

LOOP #22
5-11-90 12:04PM ID
58500 lb GR
29500 lb TA
29980 lb NT

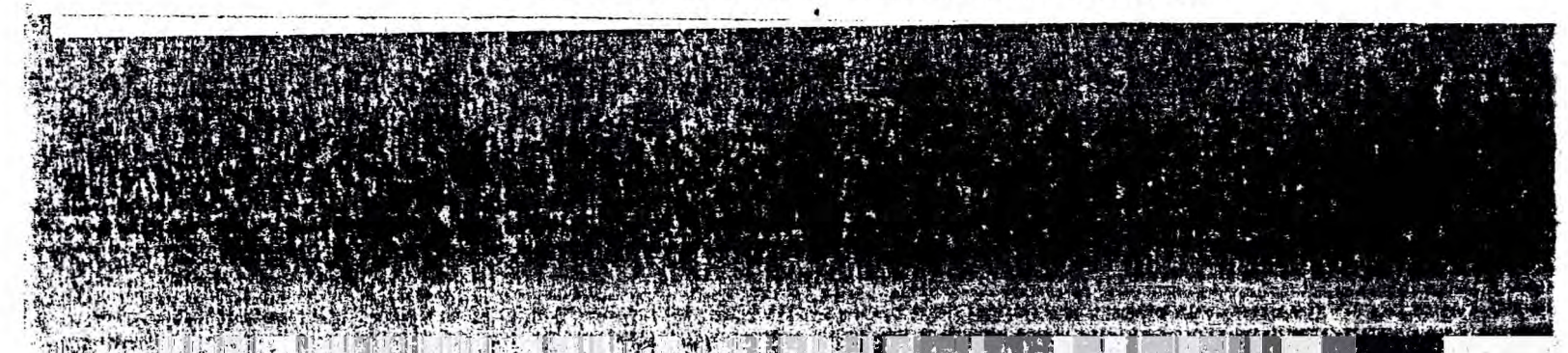
WASTE DESCRIPTION: Contaminated Soil

PROFILE # WMA 16524 QUANTITY _____

ACCEPTED BY: RRegan TIME: 5/11/90 Date TRUCK NO. 28

DRIVERS SIGNATURE: Bob Hyland 5/11/90 Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY



SPECIAL WASTE MANIFEST DISPOSAL TICKET

146818

Parkview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

LOOP # 3
5-11-90 1:38PM ID

A Waste Management Company

DATE: 5/11/90

57780 lb IN

TRANSPORTER: Aquatech

GENERATOR: Chicago Northwest

GENERATORS SIGNATURE: _____ / / Date

LOOP # 3
5-11-90 1:53PM ID

WASTE DESCRIPTION: Contaminated Soil

57780 lb GR
27100 lb TA
30680 lb NT

PROFILE # L2MA16524 QUANTITY _____

ACCEPTED BY: TGilbert TIME: 5/11/90 Date TRUCK NO. 920

DRIVERS SIGNATURE: Bob Hyland 5/11/90 Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146816

ParKview Landfill
DISPOSAL SITE

NORTH _____
EAST _____
ELEVATION _____

LOOP #15
5-11-90 10:48AM ID

A Waste Management Company

DATE: 5/11/90

63220 lb IN

TRANSPORTER: Asphalt AQUATECH Service

GENERATOR: Chicago Northwest

GENERATORS SIGNATURE: _____ / / Date

LOOP #15
5-11-90 11:06AM ID

WASTE DESCRIPTION: Contaminated Soil

63220 lb GR
29200 lb TA
34020 lb NT

PROFILE # L2MA 16524 QUANTITY _____

ACCEPTED BY: RRegan TIME: 5/11/90 Date TRUCK NO: 3400

DRIVERS SIGNATURE: Bob Hyland 5/11/90 Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

SPECIAL WASTE MANIFEST DISPOSAL TICKET

146815

NORTH _____

Parkview Landfill DISPOSAL SITE

EAST _____ LOOP #27

ELEVATION _____ 5-11-90 8:57AM ID

A Waste Management Compan

DATE: 5-11-90

69160 lb IN

TRANSPORTER: Asphalt Service

GENERATOR: Chicago + Northwest

GENERATORS SIGNATURE: _____ / / Date

LOOP #27
5-11-90 8:51AM ID

WASTE DESCRIPTION: Contaminated Soil

69160 lb GR
29560 lb TA
39600 lb NT

PROFILE # WMA 16524 QUANTITY _____

ACCEPTED BY: R Regan TIME: 5/11/90 Date TRUCK NO. 1820

DRIVERS SIGNATURE: Bob Hland / / Date BOX NO. _____ _____ TONS/YARDS

WHITE & YELLOW - TRANSPORTER COPY/PINK - DISPOSAL SITE COPY/GOLD - GENERATOR COPY

AQUA-TECH
GROCE LABORATORIES

The HNU Photoionization Meter was calibrated to 55 ppm at a span setting of 6.86 with a 10.2 eV lamp.

Job Name and # CNW - Butler 90730

HNU I.D. # Unit A

DATE 5-10-90 TIME 6:55 p.m.

SIGNATURE James H. Cashwell

CORPORATE
Aqua Tech, Inc.
1401 Port St. Port Washington, WI 53074

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Pennington Rd. Greer, SC 29651
(803) 877-1648 FAX (803) 877-1878

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Chicago and Northwestern Butler Railroad Yar PAGE 1 OF 1

U.S. EPA ID: N/A

DATE: > 5/11/90

TIME: > 9:15 AM

DIRECTION OF PHOTOGRAPH:
> Northeast

WEATHER CONDITIONS:
> 55°F, Clear skies

> light winds

PHOTOGRAPHED BY:
> Jim Cheshire

SAMPLE ID (if applicable):
> N/A

DESCRIPTION: > View of removal of piping. Note stockpiled contaminated soil.

>

>

DATE: > 5/11/90

TIME: > 9:30 AM

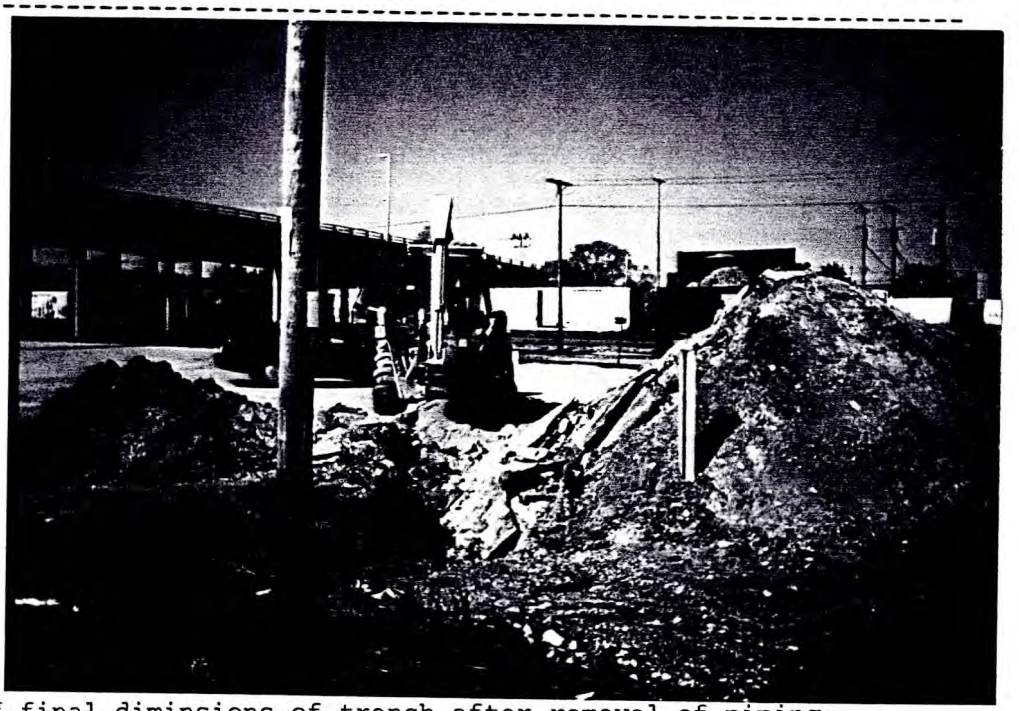
DIRECTION OF PHOTOGRAPH:
> Northwest

WEATHER CONDITIONS:
> 55°F, clear skies

> light winds

PHOTOGRAPHED BY:
> Jim Cheshire

SAMPLE ID (if applicable):
> P-1, P-2



DESCRIPTION: > View of final diminsions of trench after removal of piping.

>

>

AQUA-TECH | CORPORATE
GROUP LABORATORIES | Aqua-Tech, Inc. 140 S. Park St., Port Washington, WI 53074 (414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO.: 90730
PROJECT NAME: Chicago Nw - Butler

SAMPLERS: (Signature) [signature]

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX	TOTAL VOC (method 8240)				REMARKS
[illegible]	5/2/90	11:00		X	Sump #73206	3	X	X				~~Hold Total VOC Sample until further notice~~
												Run BTEX First: Call Jim w/Results to see if Total VOC Needs to be Run.

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
[signature]	5/2/90 17:00		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	
	5/3/90 1230	Donna Myers	

Report to:
Name: Jim H. Cheshire
Street: AQUA-TECH, INC.
City ______ State ____ Zip ______
Phone no. ( )

Remarks

Remarks: return signed chain of custody w/ results
NET - Rockford 5-2-90

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

AQUA-TECH
GROCE LABORATORIES
CORPORATE
Aqua-Tech, Inc.
140 S. Park St., Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
91730	Cain-Butler

SAMPLERS: *(Signature)* James H. Cheshire
James H. Cheshire

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Solids	TPH (Gasoline)					REMARKS
W2850A	5-11	9:[illegible]		x	P-1 (Midpt. of piping)	1	x	x					0 ppm
W2850B	|	9:25		x	P-2 (Pump Island)	1	x	x					0 ppm
	|	9:45		x	Sump-1	1							[illegible]

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
James H. Cheshire	5-11-90 11:45		
Relinquished by: *(Signature)*	**Date / Time**	**Received by:** *(Signature)*	**Date / Time**
Relinquished by: *(Signature)*	**Date / Time**	**Received for Laboratory by:** *(Signature)*	
		Paul Shimel	5-11-90 12:00

Report to:
Name Jim Cheshire
Street ______
City ______ State ______ Zip ______
Phone no. (____) ______

Remarks

Non - 007

ATI 5-15-90

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Jim Cheshire
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

05-21-90

Sample No: 73206

SAMPLE DESCRIPTION: Sump, Grab Water #2794
Project #90730 Chicago NW-Butler

Date Taken: 05-02-90 1100

Date Received: 05-03-90 1230

UST VOLATILE CMPDS-WATER

Benzene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Toluene	<1.0	ug/L
Xylenes	<1.0	ug/L

Brian Wanner, Manager
Rockford Division

AQUA-TECH
GROCE LABORATORIES

ANALYTICAL LABORATORY REPORT

Sample #: W2850 A,B

Customer: CNW - Butler

Date Sampled: 5-11-90

Date Received: 5-11-90

Date Wanted: 5-15-90

Lab Director Approval: [signature] 5-24-90

ATI Contact Name:

Sample Description

PARAMETER	W2850 A		W2850 B		Tech ID	Date Analysis Completed
total solids	82 %		81 %		PJ	5-15-90
TPH - gasoline	ND (1.0 ug/g)		ND (1.0 ug/g)		YRK	5-25-90
	ND: Not Detected					
	Detection limit is in (ug/g)					

CORPORATE
Aqua Tech, Inc.
140 S. Port St. Port Washington, WI 53074
0243

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd. Greer, SC 29651
(803) 877-1048 FAX (803) 877-1672

Chicago and NorthWestern
Transportation Company

One NorthWestern Center
Chicago, Illinois 60606

May 8, 1990

Ms. Bernice Aument
Environmental Repair Section
Department of Natural Resources
Box 12436
Milwaukee, Wisconsin 53212

Dear Ms. Aument:

This is in response to your letter of April 20 concerning a NST Closure Assessment for our Butler Yard track removal.

Please be informed that the firm which conducted the initial assessment, AQUA-TECH, has been retained to complete the removal and disposal of the contaminated soil from that site and to monitor the well.

I have been informed by AQUA-TECH that the soil should be disposed of in a landfill within the next two weeks. As soon as confirmation is received, we will inform your office.

Sincerely,

D. R. York
Director-Environmental Control

CC: D. Lott

AS21-1 (3)

FILE NOTE

Facility/Company Name	Location (Address or ¼¼)	City, State, Zip Code
Chicago & Northwestern	Butler Railroad Yard	Milwaukee WI

Facility Type	District	County	Contact Method	Date (M M D D Y Y)	Time (24-Hour Clock)
RR Yard	SED	Waukesha	☒ Telephone ☐ In-Person	05/02/90	1530

Facility Representative Contacted	Title or Position of Representative	Telephone Number (include area code)
Donald Yost	Director of Env. Controls	(312) 539-6127

+ Verify consultant they're using
+ Further Explanation will be provided on gw investigation/remediation
+ will be sending me a letter

Jeni Cheshire, Aqua-Tech called 5/2/90 4:45PM

fiberglass tank; ruptured during removal; pdt which could not be pumped spilled in excavation
Nat'l tank has been contracted to remove water collecting in sump - sample collected today

Will send report documenting soil removal, removal of piping & island (yet to be conducted) contain sample results & all info on disposal of sludges & soil

Check if additional sheets attached ☐

By pAument

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 12436
Milwaukee, Wisconsin 53212
Fax: (414) 562-1258

April 20, 1990

File Ref: 4440

Mr. Donald York
Director of Environmental Controls
1 Northwestern Center
Chicago, IL 60185

Dear Mr. York:

RE: "Underground Storage Tank Closure Assessment for the Chicago and Northwestern Company, Butler Railroad Yard, Milwaukee, Wisconsin", Dated February 1990

The Wisconsin Department of Natural Resources (WDNR) is in receipt of the subject document prepared as part of a site assessment performed at the time your tanks were abandoned. The Department of Industry, Labor and Human Relations' site assessment guidelines require that you notify the WDNR when results of the soil sample analyses indicate the presence of Total Petroleum Hydrocarbons (TPH) in excess of 10 ppm or if BETX compounds, (benzene, ethylbenzene, toluene and total xylenes), are present in groundwater collected from the excavation. Based on the apparent presence of petroleum in the soil and groundwater, the WDNR believes that petroleum products have been discharged to the environment.

> Wisconsin Statute 144.76(3) states: A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of this state."

Because you are the legal owner of the property and possess or control a hazardous substance which has been discharged, you are responsible for determining the extent and degree of the contamination to the soil and groundwater, cleanup and proper disposal of all hazardous substances present at the site. You have a legal obligation to take the steps necessary to cleanup the discharge in a timely manner.

The Department requests that within 30 days of receiving this letter that you notify this office in writing whether you have hired an experienced

environmental consultant to conduct remedial investigation to assess the environmental impact. Please provide the following information:

1. verification that you have hired a consultant,

2. the name of the consultant,

3. the date that the remedial investigation is to begin.

Releases from underground storage tanks regulated under Subtitle I of the Resource Conservation and Recovery Act require compliance with the provisions of 40 CFR Parts 280 and 281. This is federal law administered by the Environmental Protection Agency (EPA). EPA has the authority to take enforcement action at any time, but will generally not take action against parties cooperating with the state.

You are encouraged to contact the Department of Industry, Labor, and Human Relations (DILHR), the state agency that administers the Petroleum Environmental Cleanup Fund (PECFA). This fund will reimburse you for eligible costs associated with the remedial investigation and cleanup. DILHR should be contacted at (608) 267-4545 to obtain current information regarding the PECFA program.

Your cooperation in this matter will be appreciated. Please be aware that your ability to use PECFA funds is dependent on your cooperation in adequately addressing this problem.

If you have any questions please contact me at (414) 562-9525 or at the above address.

Sincerely,

Bernice A. Aument

Bernice A. Aument
Hydrogeologist, Environmental Repair Section

BAA:sbr

c: Mr. Daryl Lott
Mr. Z. Vance Jackson, Aqua-Tech, Inc.
SED Case File

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 12436
Milwaukee, Wisconsin 53212
Fax: (414) 562-1258

April 3, 1990

File Ref: 4440

Mr. Z. Vance Jackson
Aqua-Tech, Inc.
140 South Park Street
Port Washington, WI 53074

Dear Mr. Jackson:

RE: "Underground Storage Tank Closure Assessment for the Chicago and Northwestern Company, Butler, Wisconsin"

The subject document was received by this office March 19, 1990. Contamination discovered during the closure assessment at the referenced facility is identified therein. In order to inform the owner/operator of this facility of their legal responsibilities per Wisconsin Statue 144.76, the following information is required:

1. Facility owner/operator,
2. Facility representative/contact,
3. Address of facility representative/contact,
4. Phone number of facility representative/contact.

Releases from underground storage tanks regulated under Subtitle I of the Resource Conservation and Recovery Act require compliance with the provisions of 40 CFR Parts 280 and 281. This is federal law administered by the Environmental Protection Agency (EPA). EPA has the authority to take enforcement action at any time, but will generally not take action against parties cooperating with the state. Additionally, the ability to use the Petroleum Environmental Cleanup Fund (PECFA) to recover eligible costs associated with UST remedial investigations and cleanup is dependent on the cooperation of the owner/operation in complying with state and federal regulations.

The requested information should be sent to me at the above address immediately. If you have any questions regarding this letter, you may contact me at (414) 562-9525.

Sincerely,

Bernice A. Aument

Bernice A. Aument
Hydrogeologist, Environmental Response Section

c: SED Case File

Apr90\1897\4

UNDERGROUND STORAGE TANK CLOSURE ASSESSMENT

FOR THE

CHICAGO AND NORTHWESTERN TRANSPORTATION COMPANY

BUTLER RAILROAD YARD

MILWAUKEE, WISCONSIN

FEBRUARY 1990

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT NO. 90730

SIGNATURE PAGE

FOR THE

UNDERGROUND STORAGE TANK CLOSURE ASSESSMENT

FOR THE

CHICAGO AND NORTHWESTERN TRANSPORTATION COMPANY

BUTLER RAILROAD YARD

MILWAUKEE, WISCONSIN

Prepared by: James H. Cheshire Date: 02-19-1990

James H. Cheshire
Field Chemist
Aqua-Tech, Inc.

Reviewed by: Z. Vance Jackson, Jr. Date: 2/21/90

Z. Vance Jackson, Jr.
Hydrogeologist
Aqua-Tech, Inc.

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1.0 SUMMARY

Aqua-Tech, Inc. was contracted by Chicago and Northwestern Transportation Company on November 8, 1989, to conduct an underground storage tank closure assessment for the removal of one 10,000 gallon fiberglass gasoline tank. The tank was located at the Butler Railroad Yard located at 119th Street and Hampton Avenue, Milwaukee, Wisconsin. The tank closure assessment included the following:

* Removal and disposal of one 10,000 gallon tank and its contents according to the Wisconsin Department of Industry, Labor and Human Relations (DILHR) regulations
* Screening the tank bed for volatile organic compounds (VOCs) with a photoionization meter
* Collection of three soil samples and laboratory analysis of the samples for total petroleum hydrocarbons (TPH) as gasoline.
* Collection of one composite soil sample for laboratory analysis for landfill disposal
* Analysis of one groundwater sample for benzene, toluene, ethylbenzene and xylenes (BTEX).
* Documentation of sampling procedures, soil and groundwater conditions, and corrective actions at the tank bed excavation.

In the process of excavation and removal operations the tank ruptured and its residual contents spilled into the excavation area. Subsequently, 3,600 gallons of gasoline contaminated groundwater were pumped from the excavation area and a

groundwater collection sump was installed. Approximately 150 cubic yards of contaminated soil was also excavated and stockpiled on the site.

As a result of the underground storage tank closure conducted at the Chicago and Northwestern Transportation Company Butler Railroad Yard, Aqua-Tech recommends that NO FURTHER INVESTIGATION OR REMEDIAL ACTION IS NECESSARY FOR THE SOILS ON THE SITE. HOWEVER, FURTHER REMEDIATON AND PERIODIC MONITORING OF THE GROUNDWATER WILL BE NECESSARY.

2.0 SITE ASSESSMENT PROCEDURES AND FIELD OBSERVATONS

2.1 Introduction

This section outlines site assessment procedures and field observations of the underground storage tank closure assessment at the Chicago and Northwestern Transportation Company Butler Railroad Yard at 119th Street and Hampton Avenue in Milwaukee, Wisconsin (See Figure 2-1). Individual subsections address specific assessment activities including field observations, sampling procedures, and chain of custody procedures.

2.2 Field Observations

Aqua-Tech personnel arrived at the Chicago and Northwestern Transportation Company Butler Railroad Yard at 8:15 a.m. on November 8, 1989, to observe and supervise the excavation and removal operations contracted by Aqua-Tech to Auto-Quip, Inc.

The tank was registered with the Wisconsin DILHR and was installed in 1978. However, it was constructed of fiberglass instead of steel as registered (See Appendix A).

National Tank Service of Wisconsin was, in turn, contracted by Auto-Quip, Inc. to pump and dispose of the contents of the tank and any contaminated water from the excavation site. National Tank Service arrived at 10:05 a.m. and pumped 600 gallons of gasoline from the tank.

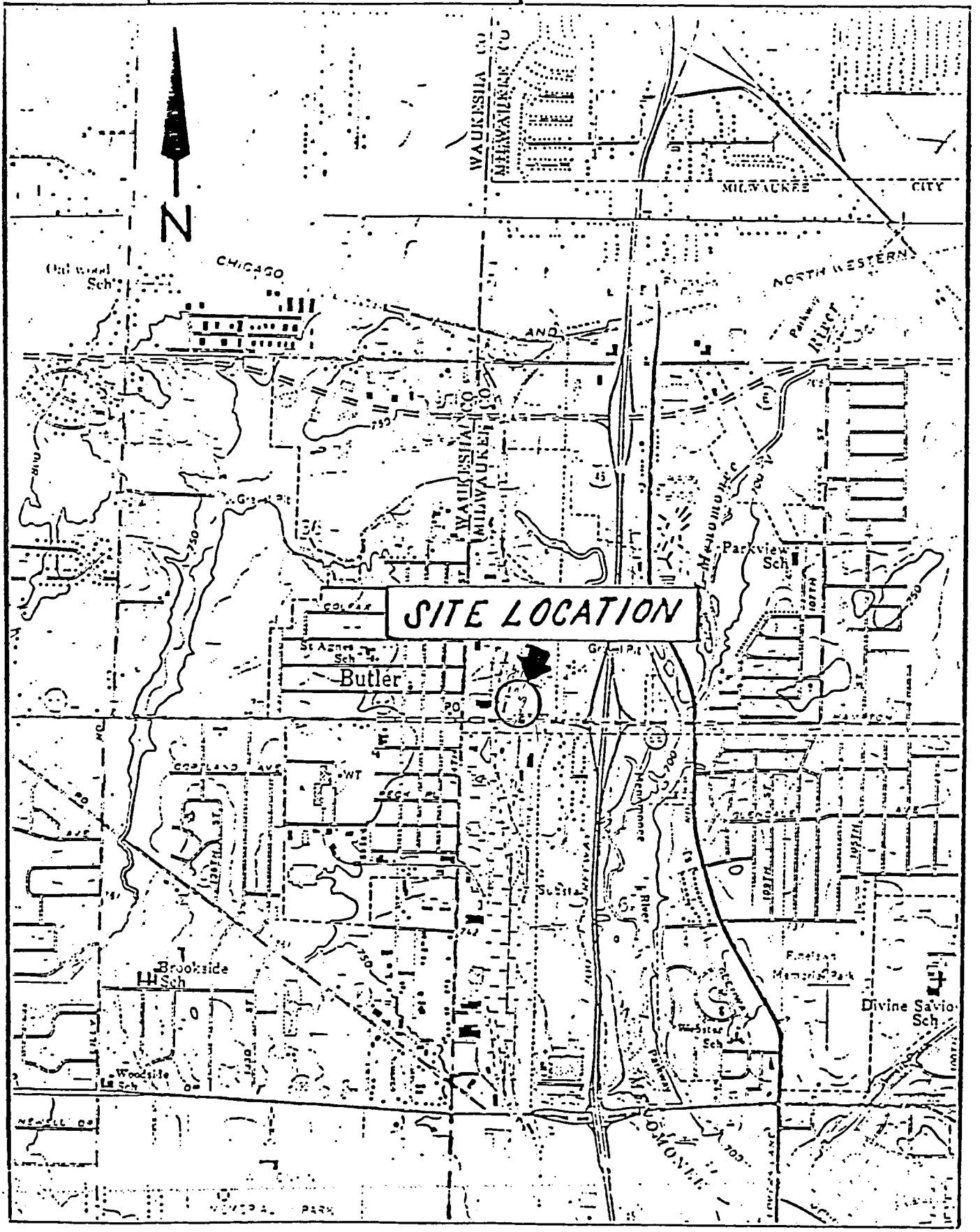
The tank was located in the area depicted in the Site Feature Map (See Figure 2-2). Twenty-five feet of straight piping lead to the concrete pump island. The tank was

AQUA-TECH INC.
GROCE LABORATORIES INC.

1 24 000 WAUWATOSA, WIS.
SE/4 WAUKESHA 15' QUADRANGLE

C.N.W. BUTLER, WI
90730

FIGURE 2-1
SITE LOCATION MAP



installed within an old concrete building foundation and had two concrete ballasts running lengthwise on top of the tank. Fiberglass straps ran over the top of the tank between the ballasts (See Appendix C).

Sandy, gravelly clay with brick debris fill extended down to 1 foot. Thick clay extended from 1 foot to the bottom of the excavation at 11 feet. The groundwater level was 7 feet 8 inches before the tank was removed, and a slight petroleum film was apparent on the water. No leaks were apparent, and the small amount of petroleum present is believed to be the result of overfill spillage.

The concrete building foundation and concrete ballasts made excavation of the tank difficult, and in the process of breaking the concrete ballasts the tank was damaged. As it was being lifted from the excavation area, the tank ruptured and broke into two sections. Approximately 100 gallons of the product that could not be pumped out prior to removal of the tank spilled into the excavation area.

National Tank Service personnel returned to the site, entered the larger section of the tank that remained in the tank bed as it was tilted to prevent further spillage, and pumped out as much of the remaining liquid as possible. The remaining section of tank was then removed from the excavation area, tilted to allow the product to collect on one end, and again pumped by National Tank Service.

The majority of the contaminated soil was excavated and stockpiled on the site on November 9, 1989. On November 9,

1989, the remaining contaminated soil was excavated and stockpiled on site while National Tank Service pumped and skimmed off 3,600 gallons of contaminated groundwater in two separate truckloads (Refer to Appendix A). Approximately 150 cubic yards of contaminated soil were excavated and stockpiled. The final dimensions of the excavation area were 38 feet by 16 feet by 11 feet deep.

A composite soil sample was collected from the stockpiled soil for laboratory analyses necessary for landfill disposal approval.

Three soil samples collected from the walls of the tank bed excavation area revealed no TPH levels above the 10 ppm detection limit. In addition, field screening of the tank bed with a photoionization meter indicated no volatile organic compounds were present after it was believed all of the contaminated soil was removed.

Duplicate groundwater samples were also collected for laboratory analysis after field screening of the water in the excavation.

On November 9, 1989, a 10 inch groundwater collection sump was installed. The bottom of the excavation area was filled with approximately 4-1/2 feet of pea gravel, and the uncontaminated soil from the surface of the tank bed was used to fill the remainder of the excavation. The top of the excavation area was covered with base coarse gravel. A cement pad was poured around the sump and a manhole cover was installed (Refer to Figure 2-3).

but that thought cont. due to overfill - how could superficial soil be assumed "clean"?

2.3 Sampling Procedures

Three soil samples were collected on November 8, 1989 by James H. Cheshire of Aqua-Tech in the locations depicted in the Site Feature Map (Refer to Figure 2-2). The samples were collected from the walls of the excavation just above the groundwater table. In addition, a composite soil sample was collected from the stockpiled soil.

nothing from base of pit

A photoionization meter was used for field screening of soil samples within the excavation and the stockpile. The samples which produced the highest readings were packed into four ounce jars, cooled to 4°C, and sent to the Aqua-Tech laboratory in Port Washington, Wisconsin, for analysis. Results of the photoionization meter survey are recorded in Table 3-1.

On November 9, 1989, a groundwater sample was collected by dipping two 40 ml. VOC vials into the groundwater in the bottom of the excavation area before the sump was installed and the excavation backfilled.

2.4 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures was to ensure that the quality of the samples was maintained during their collection, transportation, storage and analysis.

Sample identification documents were carefully prepared so that sample identification and chain of custody was

maintained and sample disposition controlled. Sample identification documents included:

* Field Notebooks
* Sample Labels
* Chain of Custody Records

Each sample was labeled, physically preserved, and sealed immediately after collection. To minimize handling of sample containers, labels were filled out prior to sample collection. The sample label was completed using waterproof ink and was firmly affixed to the sample containers. The sample label gave the following information:

* Location
* Sample Number
* Date and Time of Collection
* Analysis Required
* Name of Sampler

A chain of custody record was fully completed in duplicate by the Aqua-Tech sampler (See Appendix D) immediately following sample collection.

Transfer of Custody Shipment

The coolers in which the samples were packed were accompanied by the chain of custody record. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification number matched that on the chain of custody record. A copy of the completed chain of custody record was retained by the laboratory until analyses were completed. The record was then transferred to the site file with the analytical results.

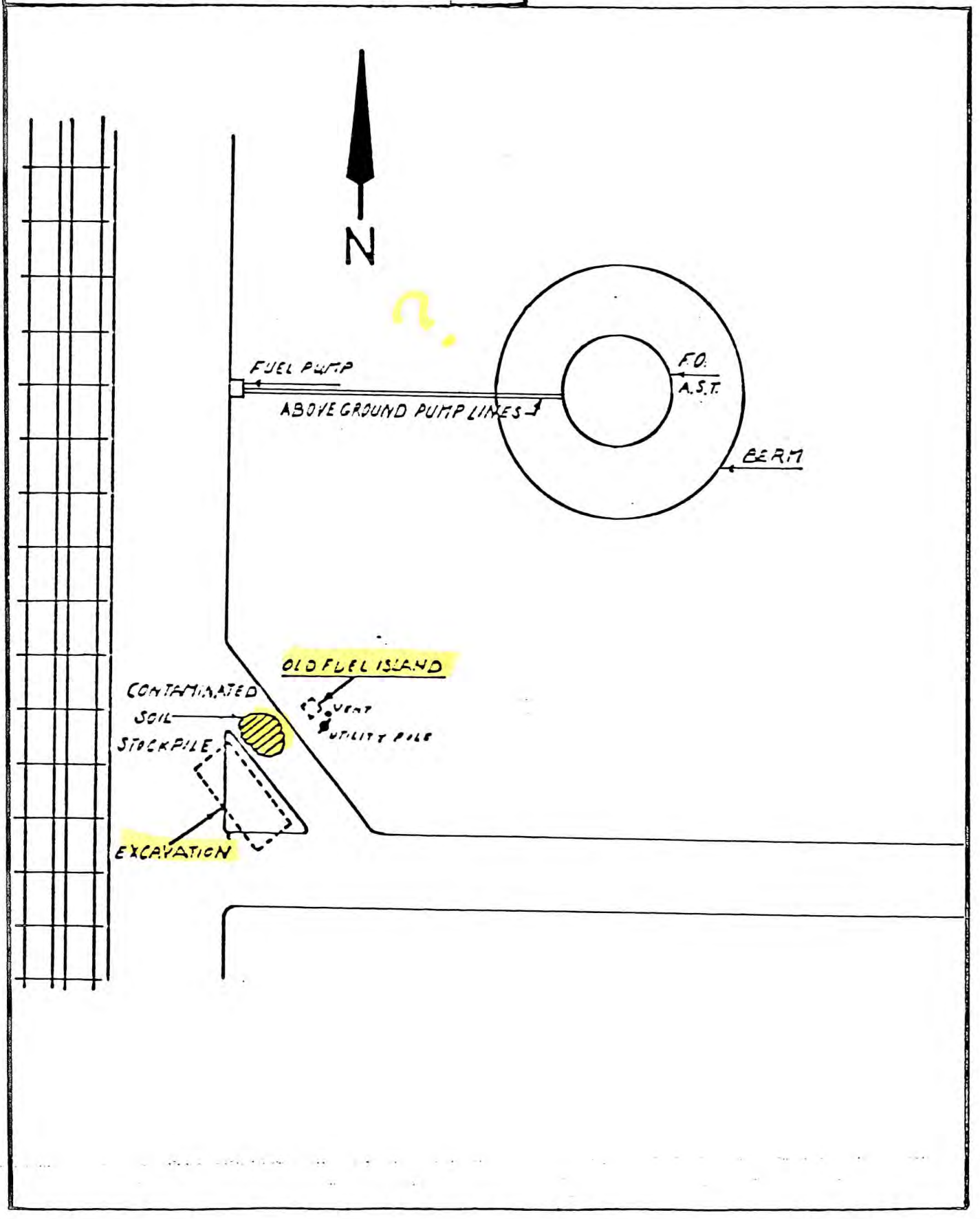
AQUA-TECH INC.

GROCE LABORATORIES INC

SCALE: 1": 50'	APPROVED BY	DRAWN BY
DATE: 12/27/89		RICHARDSON

C.N.W. BUTLER, WI
90730

FIGURE 2-2
SITE FEATURE MAP

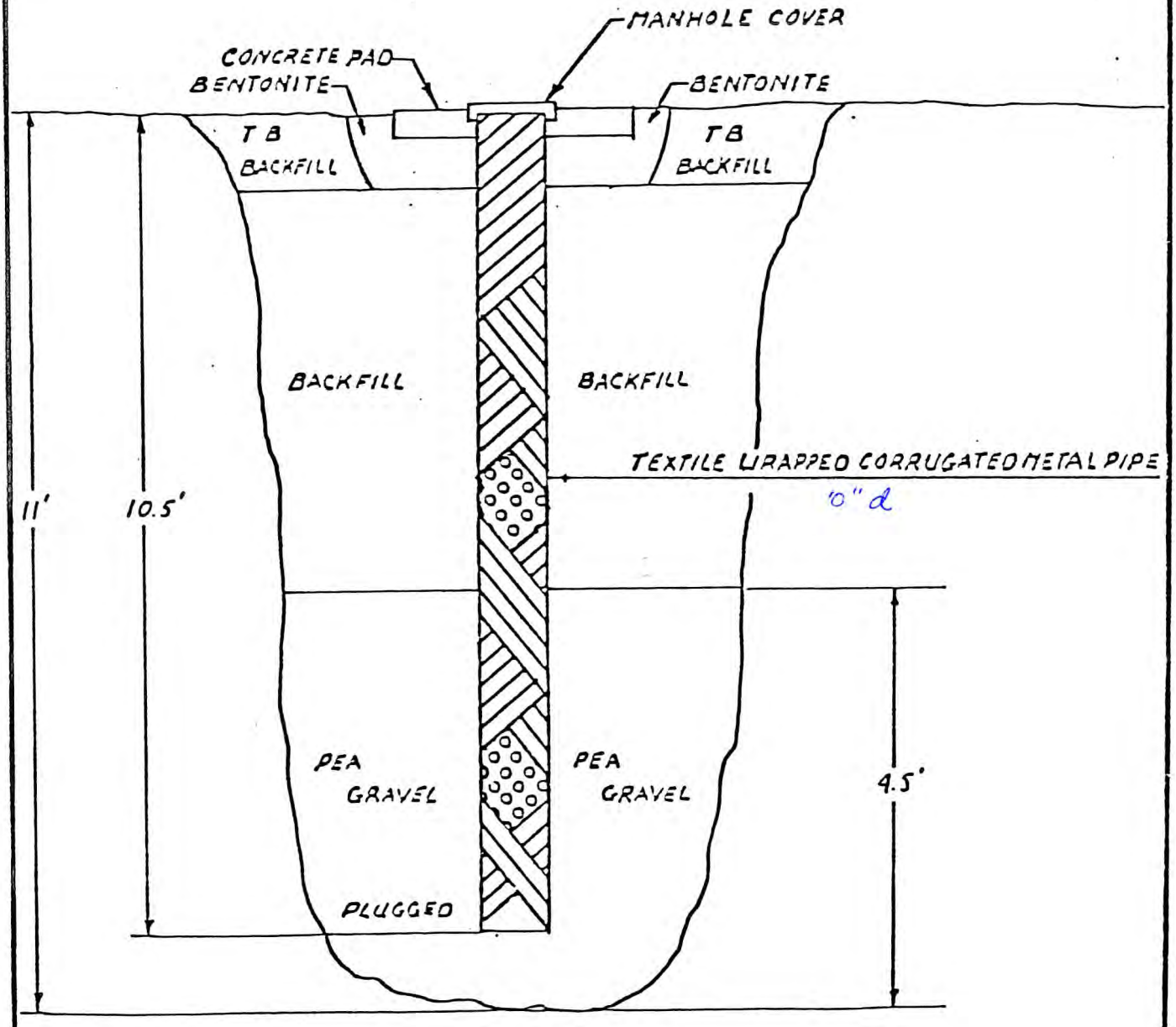


AQUA-TECH INC.
GROCE LABORATORIES INC.

SCALE: 1" = 2'	APPROVED BY	DRAWN BY
DATE: 12/27/89	J.H.C.	RICHARDSON

TEMP. SUMP PROFILE
C.N.W. BUTLER

FIGURE 2-3
COLLECTION SUMP DESIGN



3.0 ANALYTICAL PROCEDURES AND RESULTS

3.1 Introduction

This section includes results of laboratory analysis of Aqua-Tech collected soil samples for total petroleum hydrocarbons (TPH) and groundwater samples for benzene, toluene, ethyl benzene and xylenes (BTEX) using U.S. EPA methods 5030 and modified 8020.

3.2 Analytical Procedures

Analytical methodology references contain specific QC criteria associated with the particular methods. These specific requirements include calibration and QC samples and are described in detail within the methods. Daily performance tests and demonstration of precision and accuracy are required.

3.3 Results of Chemical Analysis of Aqua-Tech Collected Samples

Soil

Chemical analysis of samples revealed no TPH contaminants at levels above the 10 ug/g laboratory detection limit in the three soil samples collected from the tank bed after excavation operations had been completed.

Analysis of the composite sample of stockpiled soil indicated:

* TPH was present at a concentration of 46 ug/g
* Detectable levels of toluene (3.1 ug/g), ethylbenzene (1.1 ug/g), and xylenes (14 ug/g) were present

* No detectable level of benzene (<1.0 ug/g) was present
* No E.P. Toxic lead was detected
* pH and flash point of the soil were 8.81 and greater than 200°F, respectively

Table 3-1 and Appendix E give complete results of chemical analyses of soil samples.

Groundwater

Chemical analysis of the groundwater sample revealed BTEX compounds in the following concentrations:

Benzene	500 ug/l
Toluene	1,650 ug/l
Ethylbenzene	194 ug/l
Xylenes	3,000 ug/l

Appendix E contains the laboratory analysis report for the groundwater sample.

TABLE 3-1

RESULTS OF CHEMICAL ANALYSIS

OF

AQUA-TECH, INC. COLLECTED

SOIL AND GROUNDWATER SAMPLES

Parameter	Soil Sample #1	Soil Sample #2	Soil Sample #2	Composite Soil Sample #4	Groundwater Sample #5
TPH* (Gasoline)	<10 ug/g**	<10 ug/g	<10 ug/g	46 ug/g	----
Total Solids	87%	79%	93%	81%	----
Benzene	----	----	----	1.0 ug/g	500 ug/l
Toluene	----	----	----	3.1 ug/g	1,650 ug/l
Ethylbenzene	----	----	----	1.1 ug/g	194 ug/l
Xylene	----	----	----	14 ug/g	3,000 ug/l
pH	----	----	----	8.81	----
Total Lead	----	----	----	13 ppm	----
E.P. Toxic Lead	----	----	----	<1.0 mg/l	----
Flash Point	----	----	----	>200°F	----
Photoionization Meter Readings	0 ppm	0 ppm	0 ppm	2-20 ppm	----

* The total petroleum hydrocarbon results are reported on a dry weight basis as required by the Wisconsin Department of Industry, Labor and Human Relations.

** 10 ug/g is the maximum concentration of TPH contamination allowed in soil before remediation is required by the Wisconsin Department of Industry, Labor and Human Relations.

4.0 DISCUSSION

4.1 Introduction

This section discusses data and information that apply to observed and potential contamination that may be attributed to the Chicago and Northwestern Transportation Company Butler Railroad Yard underground storage tank site.

4.2 Soil

Gasoline was detected in the soil at the Chicago and Northwestern Transportation Company Butler Railroad Yard site above the 10 ug/g Wisconsin DILHR remedial action level in the soil excavated and stockpiled on the site. However, no gasoline contamination was detected in any of the soil samples collected from the tank bed walls after excavation operations were completed. In addition, field screening of the tank bed with a photoionization meter did not indicate any volatile organic compound levels above background in the soils. It is probable that the thick clay soils on the site have limited the migration of the contaminants within the soil medium.

4.3 Groundwater

Gasoline constituents were detected in the groundwater at concentrations above the Wisconsin Administrative Code N.R. 140.10 Groundwater Quality Enforcement Standards (Table 4-1). A groundwater collection sump has been installed, and further monitoring of the groundwater for petroleum components will be necessary to determine if further pumping and disposal of contaminated groundwater is required.

TABLE 4-1

PUBLIC HEALTH GROUND WATER QUALITY STANDARD

WISCONSIN ADMINISTRATIVE CODE - CHAPTER N.R. 140

SUBCHAPTER II - GROUNDWATER QUALITY STANDARDS

Substance	Enforcement Standard (micrograms per liter)	Preventative Action (micrograms per liter)
Benzene	0.67	0.067
Ethylbenzene	1360	272
Toluene	343	68.6
Xylene	620	124

5.0 RECOMMENDATIONS

After completing the environmental site assessment for the Chicago and Northwestern Transportation Company Butler Railroad Yard site, Aqua-Tech, Inc. recommends no further investigation or corrective action for the soils on the site. Based on analytical results of the soil samples collected, the soil contamination is believed to have been removed from the tank bed.

However, the groundwater at the site is contaminated with gasoline and further periodic monitoring will be necessary. Aqua-Tech, Inc. recommends the following course of action:

* Monthly pumping of the sump via a tank truck disposal company.
* Collection of a groundwater sample from the collection sump following each pumping and laboratory analysis of the sample for benzene, toluene, ethylbenzene, and xylene (BTEX).
* When the BTEX levels reach a combined total of 5 ppm, collection of a groundwater sample for laboratory analysis for total volatile organic compounds.
* When the groundwater meets the 5 ppm total volatile organic compounds standard set by the Milwaukee Metropolitan Sewerage District, a discharge permit will be sought so that the groundwater can be pumped into the nearest sanitary sewer under the terms of the permit.
* Periodic collection of a groundwater sample from the collection sump until the levels meet, as closely as

possible, the Wisconsin Department of Natural Resources Chapter NR 140.10 Groundwater Quality Standards.

* Completion of a remedial action report for DNR submittal and review.

Wisconsin Department of
Industry, Labor and
Human Relations

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Send Completed Form To:
Safety & Buildings Division
Bureau of Petroleum Inspection
P.O. Box 7969
Madison, WI 53707
Telephone (608)266-8981

For Office Use Only:
Tank ID # 07103 76

Instructions

This form is to be completed pursuant to Section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored, currently store or will store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

This Individual Tank Registration Applies To (check one):

1. [X] Tank still in active use
2. [ ] Inoperative or abandoned tank with product still in tank
3. [ ] Inoperative or abandoned tank with no known product in tank
4. [ ] Location for which tank has been removed
5. [ ] New tank to be installed (provide date): _____

A. IDENTIFICATION

1. Name of Installation: CHICAGO AND NORTH WESTERN

Street Address of Installation: 4823 N. 119th STREET

[X] City [ ] Village [ ] Town of: MILWAUKEE

State: WISC | Zip Code: 53225 | County: MILWAUKEE 40

2. Name for Mailing if Different Than # 1: CHICAGO AND NORTH WESTERN - D.R. YORK

Mailing Address if Different Than #1: 165 N. CANAL

[X] City [ ] Village [ ] Town of: CHICAGO

State: ILLINOIS | Zip Code: 60606 | County: COOK 99

3. Name of Contact Person: B. A. NELSON

Street Address: 325 SPENCER

[X] City [ ] Village [ ] Town of: WEST CHICAGO

State: ILLINOIS | Zip Code: 60185 | County: DU PAGE

Telephone Number (include area code): 312 - 260 - 2797

4. Name of Owner if Different from #3: SAME AS 2

Street Address:

[ ] City [ ] Village [ ] Town of:

State: | Zip Code: | County:

Telephone Number (include area code): 312 - 559 - 6127

5. Fire Department Name and ID #: BUTLER ~~MILWAUKEE~~ FIRE DEPT

6. Tank Age (date installed, if known; or years old): ~~8~~ 780101

7. If Tank Abandoned, Give Date (mo / day / yr):

8. Tank Capacity (in gallons): 10000

9. Tank Manufacturer's Name, if known:

B. TANK CONSTRUCTION:

1. [ ] Bare Steel
2. [ ] Cathodically Protected Steel
3. [X] Coated Steel
4. [ ] Fiberglass
5. [ ] Other (specify): _____

C. TANK CONTENTS:

1. [ ] Diesel
2. [ ] Leaded Gasoline
3. [X] Unleaded Gasoline
4. [ ] Fuel Oil
5. [ ] Gasohol
6. [ ] Other (specify): _____

D. TYPE OF USER (check one):

1. [ ] Gas Station
2. [ ] Bulk Storage
3. [ ] Utility
4. [ ] Mercantile
5. [X] Industrial
6. [ ] Government
7. [ ] School
8. [ ] Residential
9. [ ] Agricultural
10. [ ] Other (specify): _____

Signature of Person Completing Form: D.R. York

Date Completed: 5-1-86

SBD-7437(R.09/85)

APPENDIX B

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

THIS MEMORANDUM

is or acknowledgment that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

WO# 90730

Shipper's No. _____

Carrier's No. _____

CARRIER: NATIONAL TANK SERVICE OF WI INC. SCAC

Date 11-8-89

TO:		FROM:	
Consignee	NATIONAL TANK SERVICE OF WISC., INC.	Shipper	CHICAGO & NORTHWESTERN
Street	1813 SO. 73RD ST.	Street	4823 N. 119TH ST.
Destination	WEST ALLIS, WISC. Zip 53214	Origin	MILW., WISC. Zip

Route XX CONTRACTOR; AUTO-QUIP, INC.

Vehicle Number

No. Shipping Units	Kind of Packing, Description of Articles (If HAZARDOUS MATERIALS — PROPER SHIPPING NAME)	Hazard Class	I.D. Number	Weight (Subject to Correction)	Rate	Labels Required (If Exempt)
1-TT	GASOLINE - FLAMMABLE LIQUID UN1203	FLAMMABLE ~~LIQUID~~	UN1203	Load	GALS	NONE
	E.R.G. #27					
	FEDERAL & STATE REGULATIONS Generators material disposed of In accordance with all rules and regulations at our Hazardous Waste Facility, 1813 S. 73rd St. West Allis, WI E.P.A. Indent. No. WI D 073333330 and WI D.N.R. No. 10648	Pumped out free liquids only NO SLUDGE TAKEN				

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE:
Prepaid ☐
Collect ☐ $

FREIGHT CHARGES
☐ PREPAID ☐ COLLECT

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
Signature of Consignor

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

PLACARDS SUPPLIED FLAMMABLE 1203

PLACARDS REQUIRED ☐ YES ☒ NO — FURNISHED BY CARRIER

DRIVER SIGNATURE: _____

SHIPPER: CHICAGO & NORTHWESTERN

PER: _____

DATE: 11-8-89

CARRIER: NATIONAL TANK SERVICE OF WISC., INC.

PER: _____

DATE: 11-8-89

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge.

8-BLS-B3
Rev. 9/68

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

THIS MEMORANDUM

is an acknowledgment that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

Carrier's No. _____

CARRIER: NATIONAL TANK SERVICE OF WI INC. SCAC Date Nov. 9, 189

TO:		FROM:	
Consignee	Nationaol Tank Serv.	Shipper	Chicago Northwestern Transp.
Street	1813 S. 73	Street	4823 N. 119th St.
Destination	Milv. Zip	Origin	Milv. Zip

Route: Vehicle Number 29

Marks Showing Units	Kind of Packages, Description of Articles HM HAZARDOUS MATERIALS — PROPER SHIPPING NAME	HAZARD CLASS	I.D. Number	WEIGHT (subject to correction)	RATE	LABELS REQUIRED (or exemption)
1-TT	GASOLINE SOLUTION FLAMMABLE LIQUID	FLAMMABLE	UN1203	1800	GALS.	BONE
	(WATER & GASOLINE)					
	FEDERAL & STATE REGULATIONS Generators material disposed of In accordance with all rules and regulations at our Hazardous Waste Facility, 1813 S. 73rd St. West Allis, WI E.P.A. Indent. No. WI D 073836883 and WI D.N.R. No. 10648	Pumped out free liquids only NO SLUDGE TAKEN				

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor)

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

PLACARDS SUPPLIED FLAMMABLE PLACARDS REQUIRED ☐ YES ☐ NO — FURNISHED BY CARRIER

DRIVER SIGNATURE W.L.C.

SHIPPER: CHAW TRANSP.
PER: _____
DATE: 11/9/989

CARRIER: NATIONAL TANK SERV.
PER: _____
DATE: 11/9/89

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge.

CONTAINS HAZARDOUS MATERIALS

8-BLS-B3
Rev. 9/88

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

THIS MEMORANDUM

is an acknowledgment that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

CARRIER: NATIONAL TANK SERVICE OF WI INC. SCAC Carrier's No. _____ Date 11-9-89

TO:		FROM:	
Consignee	NATIONAL TANK SERVICE OF WISC., INC.	Shipper	CHICAGO & NORTHWESTERN
Street	1813 SO. 73RD ST.	Street	4823 N. 119TH ST.
Destination	WEST ALLIS, WISC. Zip 53214	Origin	MILW., WISC. Zip

Route: CONTRACTOR; AUTO-QUIP, INC. (PUMP OUT EXCAVATION AREA) Vehicle Number

No. Shipping Units	HM	Kind of Package, Description of Articles (If HAZARDOUS MATERIALS — PROPER SHIPPING NAME)	Hazard Class	I.D. Number	Weight (Subject to correction)	Rate	Labels Required (If Hazardous)
1-TT		GASOLINE SOLUTION (WATER/GASOLINE) FLAMMABLE LIQUID UN1203	FLAMMABLE ~~LIQUID~~	UN1203	1800 GALS		NONE

FEDERAL & STATE REGULATIONS
Generators material disposed of
In accordance with all rules and
regulations of our Hazardous
Waste Facility, 1813 S. 73rd St.
West Allis, WI
E.P.A. Indent. No. WID073838880
and WI D.N.R. No. 10845

Pumped out free liquids only
NO SLUDGE TAKEN

Remit C.O.D. to:
Address:
City: State: Zip:

COD Amt: $

C.O.D. FEE:
Prepaid ☐
Collect ☐ $

NOTE — Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor)

FREIGHT CHARGES
☐ PREPAID ☐ COLLECT

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Per _____

PLACARDS SUPPLIED: FLAMMABLE 1203

PLACARDS REQUIRED: ☐ YES ☒ NO — FURNISHED BY CARRIER

DRIVER SIGNATURE: _____

SHIPPER: ~~CHICAGO & NORTHWESTERN~~
PER: _____
DATE: 11-9-89

CARRIER: NATIONAL TANK SERVICE OF WISC., INC.
PER: _____
DATE: 11-9-89

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Manned 24 hours/day by a person with knowledge of the hazards of the material and emergency response information or who has access to a person with that knowledge.

8-BLS-83
Rev. 9/88

CONTAINS HAZARDOUS MATERIALS

FOR HELP IN CHEMICAL EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL-FREE 1-800-424-9300 DAY OR NIGHT

APPENDIX C

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Chicago and Northwestern Butler Railroad Yard PAGE 1 OF 1

U.S. EPA ID: NA

DATE: > 11/8/89

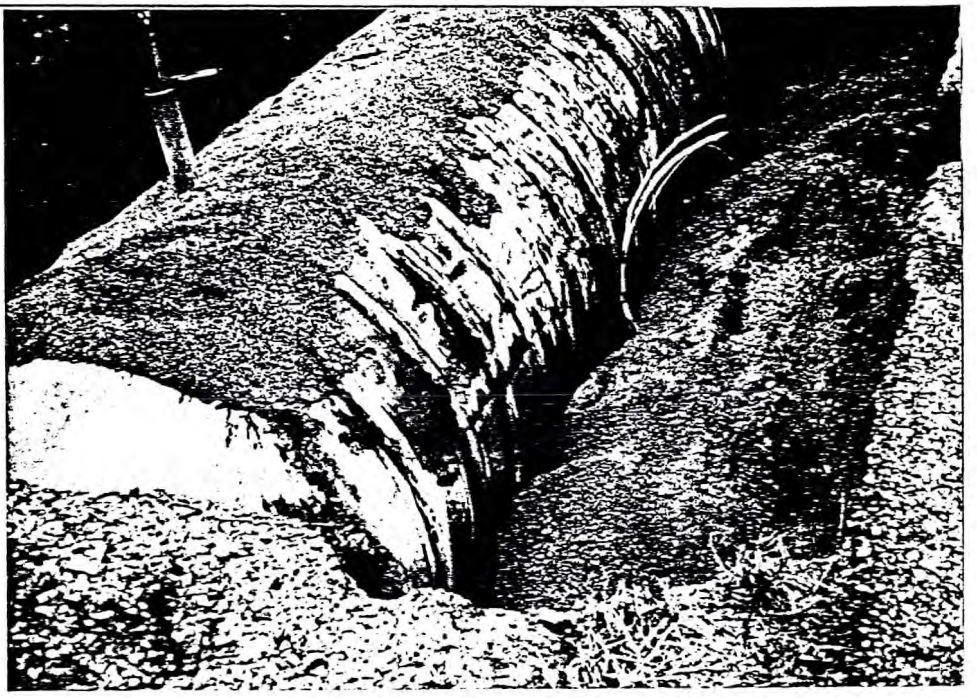
TIME: > 1:00 p.m.

DIRECTION OF PHOTOGRAPH:
> North

WEATHER CONDITIONS:
> Overcast, light
> wind, 45° F

PHOTOGRAPHED BY:
> Michael A. Meyer

SAMPLE ID (if applicable):
> NA



DESCRIPTION: > View of tank and excavation after tank was ruptured. Note concrete
> ballast and fiberglass strap to the right of the tank. Also note pump truck
> line in the fill pipe.

DATE: > 11/8/89

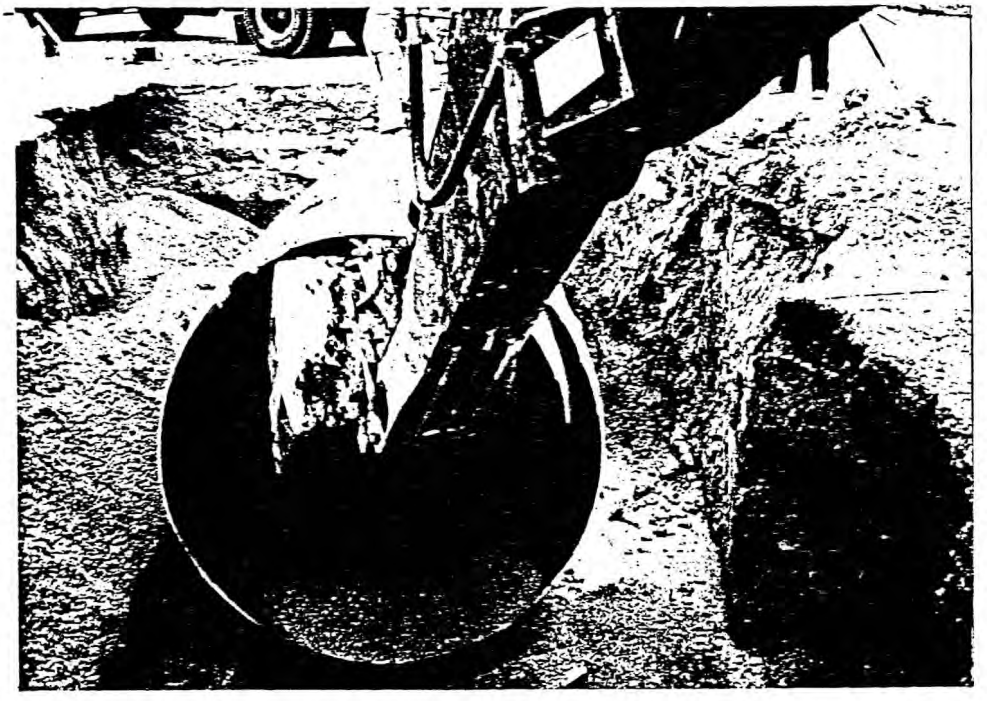
TIME: > 1:00 p.m.

DIRECTION OF PHOTOGRAPH:
> South

WEATHER CONDITIONS:
> Overcast, light
> wind, 45° F

PHOTOGRAPHED BY:
> Michael A. Meyer

SAMPLE ID (if applicable):
> NA



DESCRIPTION: > View of tank and excavation area showing open end of ruptured tank.
> Tank is being tilted back by backhoe to prevent further spillage of product and
> to allow the remaining product to be pumped.

APPENDIX D

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
	CNW Railroad - Butler

SAMPLERS: (Signature)
James N. Cheshire

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH (gasoline)	BTEX	pH	Total Solids	Total Pb.	E.P. Tox Pb (if total Pb > 5ppm)	REMARKS
W2257A	11-8-89	1:45		x	#1	1	x			x			HNU readings: 0ppm
W2257B		2:00		x	#2	1	x			x			0ppm
W2257C		2:15		x	#3	1	x			x			0ppm
W2257D		2:30	x		#4 Composite Soil Sample	1	x	x	x	x	x	x	2-20ppm

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
James N. Cheshire	11-8-89 4:45		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	
		Paul Shimek	11-8-89

Report to:
Name Jim Cheshire
Street
City State Zip
Phone no. ( )

Remarks

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

AQUA-TECH
GROCE LABORATORIES

CORPORATE
Aqua-Tech, Inc.
140 S. Park St., Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
90730	CNW- Butler

SAMPLERS: *(Signature)*

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Flashpoint	REMARKS
W2457	1-10-89	7:45	x		#4 Composite Soil Sample	1	X	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
	1/10/90 7:00		
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	7:45 1-10-90

Report to:
Name Jim Cheshire
Street
City State Zip
Phone no. ( )

Remarks

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

Phone (414) 284-5746

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
90730	CNW Railroad - Butler

SAMPLERS: *(Signature)*
James H. Chesshire

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	BTEX						REMARKS
		D.C. 11-9-89											
W2260	11-9-89	~~16:50~~ 10:15		X	#5 Groundwater from excavation	2	X						

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
James H. Chesshire	11-9-89 16:50		
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	
		Paul Shumch	11-10-89

Report to:
Name Jim Cheshire
Street
City State Zip
Phone no. ( )

Remarks

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

APPENDIX E

WATER OR WASTEWATER

ANALYTICAL LABORATORY REPORT

Sample #: WZ257 A-D (non DOT)

Customer: CNW Railroad - Butler

Date Sampled: 11-8-89

Date Received: 11-9-89

Date Mailed: 11-23-89

Lab Director Approval: [signature] 11-29-89

All Contact Name:

Sampling Labor:

Vehicle Mileage:

Lab I.D. Number

Sample Description ≈ 125 yd³

PARAMETER	WZ257 A	WZ257 B	WZ257 C	WZ257 D	Tech ID	Date Analysis Completed
total solids	87 %	79 %	93 %	81 %	PS	11-13-89
TPHC- gasoline	<10 mg/g	<10 mg/g	<10 mg/g	46 mg/g	YAH	11-23-89
Benzene	—	—	—	<1.0 mg/g	YAH	11-23-89
Toluene	—	—	—	3.1		
Ethylbenzene	—	—	—	1.1		
Xylene	—	—	—	14		
pH	—	—	—	8.81	EF	11-29-89
total Pb	—	—	—	13 ppm	ME	11-15-89
E.P. tox Pb if total is >5 ppm	—	—	—	<1.0 mg/l	BT	11-28-89

AQUA-TECH
GROCE LABORATORIES

WO# 90730

ANALYTICAL LABORATORY REPORT

Sample #: W2457

Customer: CWW - Butler

Date Sampled: 1-10-90

Date Received: 1-10-90

Date Wanted: 1-10-90

Lab Director Approval: [signature] 1-10-

ATI Contact Name:

Sample Description: Soil #4 Composite

PARAMETER	W2457				Tech ID	Date Analysis Completed
Flashpoint	>200°F				BT	1-10-90

CORPORATE
Aqua Tech, Inc.
1405 Port St Port Washington, WI 53074
(414) 284-5745 FAX (414) 284-0263

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd Greer, SC 29651
(803) 877-1048 FAX (803) 877-1872

BUTLER

WATER OR WASTEWATER

ANALYTICAL LABORATORY REPORT

Sample #: #WZZ60 NON DOT

Customer: CNW Railroad

Date Sampled: 11-9-89

Date Received: 11-10-89

Date Mailed: 11-24-89

Lab Director Approval: Bruce T. Hahn 11-15

All Contact Name:

Sampling Labor:

Vehicle Mileage:

Lab I.D. Number

Sample Description

PARAMETER		WZZ60			Tech ID	Date Analysis Completed
Benzene		500 ug/l			YRH	11-14-89
Toluene		1,650 ug/l				
Ethylbenzene		194 ug/l				
Xylene		3,000 ug/l				

8110

DEPARTMENT OF NATURAL RESOURCES
LEAKING UNDERGROUND STORAGE TANK

COMPUTER TRACKING
FORM 4400

706

PWN#: _____ FID#: _____

PROJECT MGR: Bernice Aument

SUPPORT PERSON: _____

DISTRICT: SED COUNTY: Waukesha MNDI: ___

SITE NAME: Chicago & Northwestern - Butler yard

ADDRESS: 119th [redacted] St. and Hampton Ave

Butler WI

___TN ___CITY ___VIL

LEGAL DESC: ___1/4 ___1/4 SEC ___T ___R ___E/W

DATE OF INITIAL CONTACT: 03/19/90 (mo day yr)
11-10-89

DATE OF RP LETTER: ___/___/___ (mo day yr)

DATE SITE CLOSURE APPROVED: 04/01/92 (mo day yr)

LUST TRUST ELIGIBLE: (X)
X 1 = FEDERAL
___ 2 = NON-FEDERAL

STATUS: (X)
___ 1 = STATE LEAD
X 2 = RP LEAD

PRIORITY SCREENING: (X)
___ 1 = HIGH SCORE: ___
X 2 = MEDIUM
___ 3 = LOW
___ 4 = UNKNOWN

(see worksheet on back)

FUNDING SOURCE: (X)
X 1 = RESPONSIBLE PARTY
___ 2 = LUST TRUST FUND
___ 3 = ENVIRONMENTAL RESPONSE FUND
___ 4 = SUPER FUND
___ 5 = NONE
___ 6 = OTHER _____

(X AS APPROPRIATE)	DATE INITIATED (MO DAY YR)	DATE COMPLETED (MO DAY YR)
___ NO ACTION TAKEN		
___ EMERGENCY		
___ EMERGENCY RESPONSE		
___ FIELD INVESTIGATION		
___ REMEDIAL ACTION		
___ LONG TERM MONITORING		

COMMENTS:

FIRM OR PERSON RESPONSIBLE: [redacted] Daryl Lotz
P.O. Box 519
West Chicago, IL
60185
(708) 260-2797

CONTACT: Donald York Dir. of Env. Controls

ADDRESS: 1 Northwestern Center
Chicago IL 60606

PHONE: 312/559-6127
(list additional on separate list & attach)

CONSULTANT: Aqua Tech Inc

CONTACT: E. [redacted] Vance Jackson

ADDRESS: 140 South Park St
Port Washington, WI 53074

PHONE: ___/284-

AMOUNT COMMITTED: $_____.___ AMOUNT SPENT: $_____.___
(list additional on separate list & attach)

PECFA REVIEW REQUESTED: (X) ___YES ___NO

DATE PECFA REQUEST RECEIVED: (mo day yr) ___/___/___

	KNOWN IMPACTS: (X)	POTENTIAL IMPACTS: (X)
FIRE/EXPLOSION THREAT		
CONTAMINATED PRIVATE WELL		
CONTAMINATED PUBLIC WELL		
GROUNDWATER CONTAMINATION	X	
SOIL CONTAMINATION	X	
OTHER: _____		

SUBSTANCES: (X) QUANTITY DISCHARGED: (gals) _____

X LEADED GAS
X UNLEADED GAS
___ DIESEL
___ FUEL OIL
___ UNKNOWN HYDROCARBONS
___ OTHER _____
___ VOCS
___ PESTICIDE

ENFORCEMENT ACTION TAKEN

01=INF. CONTACT, RESP INITIATED
02=RP LETTER, RESP INITIATED
03=NTC OF NON COMPLIANCE
06=INSPECTION LETTER
07=RESPONSE RECEIVED
11=CLOSE OUT
14=NOTICE OF VIOLATION
18=ADMIN. ORDER FINAL
20=ADMIN. ORDER CANCELLED
23=REFERRAL TO DOJ
25=REFERRAL TO EPA
99=OTHER ACTION: _____

ACTION (code from above)	DATE (mo/day/yr)	COMMENT:
02	4/3/90	WDNR letter to RP
02	4/20/90	DNR letter to RP
08	5/8/90	Removal of contaminated soils imminent
09	3/7/90	WDNR rec'd closure assessment - g.w + soil contam
11	04 01 92	Close out

(for additional action codes see instructions/list additional on separate list and attach)

OVER ALL CASE COMMENT: _____

LUST CASE PRIORITY SCREENING WORKSHEET

HIGH FACTORS: (DEFINITION: Any case which presents an actual threat to human health, or has a high potential of causing a threat to human health and property; and/or any case which has caused or has a high potential of causing substantial impacts to the soil waters and air of the State of Wisconsin)

HIGH FACTORS:

___ Contaminated private or public well >NR140 enf. std.
___ Explosive or toxic vapors in structures
___ Threat of fire
___ Floating product
X Known gw contamination
___ Impacted surface water--wetland, trout stream, etc. impacted

MEDIUM FACTORS: (DEFINITION: Any case which does not appear to be an immediate threat to human health or vital natural resources but which shows levels of contamination that may cause substantial environmental impacts if left unaddressed.)

___ saturated soil contamination
___ Moderate soil contamination with moderate potential for impacting groundwater.
___ Impacted surface water--no critical habitat threats.

LOW FACTORS: (DEFINITION: Any case where contamination has been documented, but which presents limited potential for any immediate threat to human health and vital natural resources.)

___ Soil contamination which appears to have a limited potential for impacting groundwater. ([redacted]
___ Initial remedial action has substantially reduced environmental threat.

UNKNOWN FACTOR: (DEFINITION: Any case where some indication of contamination is present, but due to incomplete or inaccurate information the level of threat to human health or the environment can not be assessed at this time.)

___ Inadequate information to assign a high, medium, or low ranking.

OVERALL RANKING: The screening rank for the site along with the date of ranking. This may be updated when additional information is received. Special circumstances for a particular case may be taken into account in the comment section. The District LUST coordinator may independently set the ranking of a site based upon "special circumstances."

Circle one & date, indicate in priority screening box opposite side ___HIGH X 3/27/90 SA___MEDIUM___LOW___UNKNOWN

COMMENT: _____

_____

NUMERICAL LUST SCORING WORKSHEET (complete for LUST cases ranked HIGH)

1. GROUNDWATER & SOILS: (circle one)

POINTS	Documented Petroleum Contamination:	POINTS	
20	Municipal well	8	Soil & gw within 1200' of a public well
18	>6 private wells	6	Soil & gw within 1200' of one or more private wells
16	4 - 6 private wells	4	GW contamination, no wells within 1200'
14	2 - 3 private wells	2	Soil contamination
12	1 private well		

2. EXPLOSIVE OR TOXIC VAPORS: (circle one)

POINTS CONFIRMED	POTENTIAL	
20	10	Explosive levels in a residence or building
16	8	Explosive levels in a sewer or structure
12	6	Toxic levels in a residence or building

Note: Explosive levels determined to be >20% LEL as per an explosivity meter; toxicity levels are based on OSHA permissible exposure limits (PEL)

3. HYDROGEOLOGIC SETTING: (circle one)

POINTS	
12	Highly permeable sub-soils (gravel, well sorted sand, fractured bedrock or utilities capable of intercepting and directing flow) and groundwater within 25 feet of the ground surface.
10	Highly permeable sub-soils and groundwater more than 25 feet below ground surface.
8	Moderately permeable sub-soils (silty sands, silty gravel, clayey sands) and groundwater within 25 feet of ground surface
6	Moderately permeable sub-soils and groundwater greater than 25 feet below ground surface.
4	Low permeability sub-soils (silt, clayey silt, sand clays) and groundwater within 25 feet of ground surface.
2	Low permeability sub-soils and groundwater greater than 25 feet below ground surface.

4. TYPE OF PRODUCT: (circle one)

POINTS	NOTE: Add 4 points if free product is present. (score in parentheses)
8 (12)	Gasoline, mixture of gasoline and other products, other light petroleum products.
6 (10)	Diesel, fuel oil
2 (6)	Bunker oil, other heavy oils or crude fractions

___ TOTAL SCORE (indicate score in priority screening box on opposite side)

List Additional Responsible Party Names Here:

Responsible Party Name: _____ Responsible Party Name: _____

Address: _____ Address: _____

_____ _____

Phone: ___/___ Phone: ___/___

Responsible Party Name: _____ Responsible Party Name: _____

Address: _____ Address: _____

_____ _____

Phone: ___/___ Phone: ___/___

List Additional Consultants Here:

Consultant: _____ Consultant: _____

Contact: _____ Contact: _____

Address: _____ Address: _____

_____ _____

Phone: ___/___ Phone: ___/___

Amount Committed: $_____.____ Amount Spent: $_____.____ Amount Committed: $_____.____ Amount Spent: $_____.____

List Additional Enforcement Actions Here:

Action Code	Date (mo/day/yr)	Comment
09	6 / 28 / 90	DNR rec'd Remedial Assessment - contaminated soils + g.w. removed from site
___	___ / ___ / ___	
11	4 / 1 / 92	Closout
___	___ / ___ / ___	
___	___ / ___ / ___	
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Additional Site Comments:

Return this form to:

Wisconsin Department of Natural Resources
Tank Response Unit - Annual Report SW/3
P.O. Box 7921
Madison, WI 53707

ANNUAL SITE STATUS FORM
LEAKING UNDERGROUND STORAGE TANK (LUST) SITE
Form 4400-161 5-93

INSTRUCTIONS: The information on this form will be used to monitor progress on site clean up, and to determine whether action by the Department is necessary to attain compliance with s. 144.76, Wis. Stats., Hazardous Substance Spills. Personally identifiable information on this form will be used by the Department for no other purpose. This voluntary form is for actions taken in the preceding calendar year. Actions taken at LUST sites in other years are not to be included, unless specified below. A separate form is to be completed for each site. This form is to be completed in addition to technical reports which have been submitted to the Department.

241012860

SITE IDENTIFICATION

Site Name: BUTLER YARD	Site Owner's Name: CHICAGO & NORTH WESTERN TRANSP. CO.
Site Address: 9823 N. 119th ST.	Site Owner's Telephone Number: 312-559-6127
City, State, Zip Code (Site Address): MILWAUKEE WISCONSIN 53225	Environmental Consulting Firm: NONE Currently Under Contract
County in Which Site is Located: MILWAUKEE	DNR Site Identification Number: 706-3-SED (from DNR correspondence)

SITE STATUS - Check all which apply, enter yards and gallons in the spaces provided. **Definitions are on back of page.**

___ Field Investigation - This site was still being investigated in the preceding calendar year to identify the extent of contamination.

___ Soil Excavation in preceding calendar year.
(Indicate cubic yards for each below.)

_____ yds^3 Landfilled
_____ yds^3 Mixed into asphalt
_____ yds^3 Thermal treatment process ("incineration")
_____ yds^3 Thinspead
_____ yds^3 Excavated and placed into active bioremediation
_____ yds^3 Landspread (Ch. NR 518, Wis. Adm. Code)
_____ yds^3 Placed in a stockpile awaiting treatment or disposal
_____ yds^3 Other: _____

___ In-situ (in place) Soil Treatment in preceding calendar year.
(Indicate systems active in 1992, regardless of the year started.)

_____ (est.) yds^3 Soil vapor extraction system
_____ (est.) yds^3 Natural (passive) contaminant biodegradation
_____ (est.) yds^3 Active bioremediation
_____ (est.) yds^3 Other: _____

___ Groundwater Treatment in preceding calendar year

_____ gals. Pumped and airstripped
_____ gals. Pumped and other aboveground treatment
Type of treatment unit - _____
_____ (est.) gals. Air sparging
_____ (est.) gals. Active groundwater bioremediation
_____ gals. Other: _____

___ Free Product Recovery - _____ gallons of petroleum product were removed from the water table at this site in the preceding calendar year.

Signature: _____ Date Signed: 7-16-93

X Site owner
___ Other (indicate your relationship to this site) _____

Please use this space and the back of the page to provide any additional information you would like the Department to have regarding the status of this site.

Thank You.

No Work Performed in 1992. See Attached Letter from WDNR

Definitions:

FIELD INVESTIGATION - The initial investigation to determine the extent and degree of contamination in soil and groundwater was in progress.

SOIL EXCAVATION - Contaminated soil was excavated and stored, treated or disposed. This may be a partial or total response to contamination. This definition does not include removal of clean tank backfill material. Enter the cubic yards of soil which went to each destination.

LANDFILLED - Excavated contaminated soil was disposed of at a licensed landfill.

MIXED INTO ASPHALT - Excavated contaminated soil was mixed into asphalt as a plant which is permitted to accept petroleum contaminated soil.

THERMAL TREATMENT - Excavated contaminated soil was treated in a unit which heats soil to volatilize contaminants and controls emissions of contaminants to the atmosphere.

THIN SPREAD - Excavated contaminated soil was spread on an impermeable surface and remediated by exposure to the atmosphere and naturally occurring microbes.

ACTIVE BIOREMEDIATION - Oxygen and/or nutrients were added to soil or groundwater to promote the breakdown of contaminants by microbes. Active bioremediation may be an in-situ or ex-situ treatment method.

LANDSPREAD - Excavated contaminated soil was spread on the land surface to promote natural degradation of the contaminants through exposure to the atmosphere and naturally occurring microbes. Landspreading must be conducted in accordance with the requirements of Ch. NR 518, Wis. Adm. Code.

IN-SITU TREATMENT - Contaminated soil and/or groundwater was remediated without removal from its original location. Soil vapor extraction is an example of in-situ soil treatment .

SOIL VAPOR EXTRACTION - A system consisting of vapor recovery wells, pumps and, in some cases, an off-gas treatment system, was installed to remove contamination from the soil.

NATURAL BIODEGRADATION - The rate of natural breakdown of petroleum compounds by naturally occurring microbes in soil or groundwater was monitored.

GROUNDWATER TREATMENT - Contaminated groundwater was treated in compliance with applicable state and federal requirements to remove contaminants.

PUMPED AND AIRSTRIPPED - Contaminated groundwater was pumped from the aquifer and treated to remove the contaminants by mixing the water with air in a tower or other structure.

AIR SPARGING - Air was injected into the aquifer to move dissolved contaminants from groundwater into the air. Air sparging is usually used in conjunction with soil vapor extraction.

FREE PRODUCT - Liquid petroleum which was floating on the water table was removed by pumping.