WARZYN ENGINEERING INC

Engineers & Scientists
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Madison, WI 53715
(608) 257-4848
WIS. Toll Free No. 800-362-5005

LETTER OF TRANSMITTAL

DATE	JOB NO.
7-8-86	C205350

ATTENTION: MR. SKIP GLOR

RE: WORKSHOP FOR THE BLIND
SOILS INVESTIGATION REPORT

TO Wisconsin Dept. of Natural Resources
2300 N. Martin Luther King Jr. Dr.
Milwaukee, WI 53212

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☑ COPY OF REPORT

COPIES	DATE	NO.	DESCRIPTION
1	6/86		SOILS INVESTIGATION REPORT / WORKSHOP FOR THE BLIND

RECEIVED
JUL 9 1986
D.N.R. SED Hqtrs.
Milwaukee, WI

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☑ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS DEAR MR. GLOR: ENCLOSED PLEASE FIND ONE COPY OF THE SOILS INVESTIGATION REPORT FOR THE WORKSHOP FOR THE BLIND IN MILWAUKEE. A COPY HAS ALSO BEEN SENT TO MR. MARK GIESFELDT IN MADISON FOR HIS REVIEW.

PLEASE CONTACT LARRY FOX AT (414) 321-0100 IF YOU HAVE ANY QUESTIONS OR COMMENTS ON THE REPORT.

COPY TO _____

SIGNED: Michael G. Collentine
MICHAEL G. COLLENTINE, CPGS

If enclosures are not as noted, kindly notify us at once.

WARZYN

Report
C205350

Soils Investigation Report
Wisconsin Workshop For The Blind
Milwaukee, Wisconsin

Prepared for:

State Of Wisconsin
Department Of Administration
Madison, Wisconsin

Prepared by:

Warzyn Engineering Inc.
Milwaukee, Wisconsin

June, 1986

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Soils Investigation Report
Wisconsin Workshop For The Blind
Milwaukee, Wisconsin

June, 1986

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Engineers & Scientists
Environmental Services
Waste Management
Water Resources
Site Development
Special Structures
Geotechnical Analysis

June 27, 1986
C 205350

Mr. Helmut Seaman
Wisconsin Dept. of Administration
DSFM, P.O. Box 7866
Madison, WI 53707

Re: Soils Investigation Report
Wisconsin Workshop for the Blind
Milwaukee, Wisconsin

Dear Mr. Seaman:

Enclosed are three copies of the Soils Investigation Report summarizing the soil contamination investigation conducted by Warzyn Engineering Inc. at the Wisconsin Workshop for the Blind site, 5316 West State Street, Milwaukee, Wisconsin. The investigation and report were verbally authorized by the Wisconsin Department of Administration in response to hazardous soil conditions encountered at the site on May 7, 1986.

We trust that the findings and recommendations of this report adequately address the Department of Administration's concerns regarding potential soil contamination at the Workshop for the Blind facility. If you have any questions or comments, please contact us.

Sincerely,

WARZYN ENGINEERING INC.

Lawrence L. Fox by MGC

Lawrence L. Fox
Project Manager

Michael G. Collentine, CPGS
Senior Hydrogeologist

LLF/MGC/cac/DRV

Enclosures: As stated

Warzyn Engineering Inc.
One Science Court
University Research Park
P.O. Box 5385
Madison, Wisconsin 53705
(608) 273-0440

APPENDIX A

APPENDIX B

APPENDIX C

Boring Logs

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APPENDIX D

Analytical Laboratory Results of Soil Samples

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Appendix C - Boring Logs

Appendix D - Analytical Laboratory Results of Soil Samples

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SOILS INVESTIGATION REPORT
WORKSHOP FOR THE BLIND
MILWAUKEE, WISCONSIN

SITE BACKGROUND

On the morning of May 7, 1986, Earll and Associates, Ltd., were supervising excavation activities related to a sewer line installation at the rear of the Workshop for the Blind facility located at 5316 West State Street, Milwaukee, Wisconsin. During the course of the excavation, a metal object (later identified as a motor) containing unknown materials was uncovered, which, when exposed to air, spontaneously combusted. After consultation with the Department of Administration (DOA), Earll and Associates contacted Warzyn Engineering Inc. (WEI) to perform a site investigation as part of an emergency response.

Upon arrival at the site, Warzyn personnel interviewed Mr. Larry Earll of Earll and Associates, and Mr. Jack Williams of DOA. They informed Warzyn that Mr. Hans Frick, a former employee of Milwaukee Electric Tool Company, the previous facility operator had been interviewed regarding previous site activities. Mr. Frick indicated that manufacturing operations at the Milwaukee Electric Tool Company at one time included "case hardening" of steel. "Tuffriding" was a typical case hardening operation in which cyanide salts were used. Mr. Frick reported that some of the cyanide salts may have been deposited at the rear of the facility. In addition, Mr. Frick reported that a former waste oil/solvent dump site was located near the existing utility pole in the northwest corner of the site.

Based on the conversation with Mr. Frick, it was decided that cyanide was the primary hazard of concern, and employees working at the site, in addition to Mr. Earll and Mr. Jack Williams (DOA), were advised. Employees who had been working with the potentially contaminated soil were instructed to remove all dirty clothing and to leave the dirty clothing on-site. The employees were then instructed to go to their homes and shower. A dump truck partially filled with the soil in question was unloaded, and the front-end loader was cleaned of all attached soil. Upon Warzyn's recommendation, it was decided that soil samples would be collected from sites at the rear of the facility and from the pile of excavated soils to determine the presence of cyanide.

The site was secured until the arrival of the emergency response sampling team from Warzyn. Mr. Mike Zilmer of the Wisconsin Department of Natural Resources was then notified of the situation.

SITE INVESTIGATION

Emergency Response Sampling

The emergency response sampling team from Warzyn arrived at 5:00 p.m. on May 7, and performed surficial sampling of soils with a hand auger. A composite sample of the soil pile deposited by the dump truck was also collected. A Case Model 580 backhoe was delivered to the site along with 3 tons of sand. Mr. Jim Fuller of Mid-America, Inc. operated the backhoe. The sand was to be used if any other spontaneously combustible materials were uncovered. Personnel that were involved with the excavation and deeper coring activities were instructed to approach the potential hazard in EPA designated Level B protection (which includes self-contained breathing units). In addition to the soil pile composite sample, soil samples were collected from two soil borings (S1 and S2), two concrete slab core borings (C3 and C4), a pile of surficial material from the excavated area north of the concrete slab and backfill material from beneath the concrete slab (refer to Drawing C 205350-B1 for sampling locations). A sample of white pyrophoric material from the combustible motor was also collected for analysis. All samples were transported to the Warzyn analytical laboratory for analysis.

The chemical analyses were completed by the following morning (May 8). The highest concentration for total cyanide was 37.4 ppm at Boring S-1 at a depth of one foot (refer to Drawing C 205350-B1). The next highest total cyanide concentration was detected in the pile composite sample, with a value of 3.06 ppm. Analyses of samples from Boring S-1 (one foot) and the pile composite were performed in triplicate. The duplicate and triplicate samples at both sites had cyanide concentrations of less than 1 ppm, suggesting that the cyanide occurs in a solid, salt form and is not evenly dispersed in the site soils. All other samples contained less than 1 ppm total cyanide. The white pyrophoric (spontaneously combustible) material was found to consist of 36% elemental potassium and 11% elemental sodium. Analytical results for soil samples collected during the emergency response operation are included in Appendix D. Based on these analytical results, it appeared that no short term

or long term health effects to site workers from the previous day's activities were likely. Warzyn relayed the results of the investigation to the DOA, the DNR, and the Workshop for The Blind.

Investigation Phases I and II

With the approval of the DOA, Warzyn developed a work plan to further investigate potential soil contamination at the site. The work plan consisted of three phases. Phase I of the investigation would consist of eight soil borings in the rear courtyard of the facility. Selected samples from these borings would be analyzed for cyanide. Phase II of the work plan consisted of four to six soil borings to be performed in the area of the reported waste oil/solvent dump site. These samples were to be analyzed for volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). If contaminated soils were identified during either Phase I or Phase II, Warzyn was to proceed to Phase III and install up to four groundwater monitoring wells. The actual number of monitoring wells and their locations would be based on the results of the soil analyses from Phase I and Phase II and discussion of the results with DOA and, if necessary, DNR.

Phases I and II of the work plan were performed between May 14 and May 19, 1986. A total of 14 soil borings were rotary drilled using 3 1/4-inch diameter hollow stem augers (ASTM-D1586). Table 1 provides a summary of boring and sampling depths at Borings B-1 through B-14.

Borings B-1 through B-8 were originally scheduled to be drilled to a depth of 20 feet, however, the total depths were modified because groundwater was encountered at approximately 7 feet while drilling at Borings B-1, B-2 and B-3. General information regarding subsurface exploration is presented in Appendices A and B. Boring logs for Borings B-1, B-2, B-3, B-4, B-5, B-6, B-7, B-8, B-11, B-12, B-13, and B-14 are presented in Appendix C. Borings B-9 and B-10 were exploratory borings to locate the former waste oil dump site and were not logged. All boring locations are shown on Drawing C 205350-B1.

Subsoils beneath the site generally consisted of brownish silt/clay units interbedded with brown sand and gravel units. None of the soil borings encountered bedrock. Black, oily, odiferous soils were encountered at borings

B-10, B-11 and B-12.

All drilling equipment was steam cleaned prior to drilling activities and between soil borings. Upon completion of drilling activities, all boreholes were backfilled with a 1:1 ratio of flint sand and bentonite powder/pellets to within one foot of the surface. Drill cuttings were used to backfill the borehole to the ground surface. All remaining excavated soils on the site were deposited in a lined and covered dumpster located in the rear of the facility for temporary storage.

Analytical Results of Phase I and II Soil Samples

Analytical results of selected soil samples collected at the Wisconsin Workshop for The Blind site during the Phase I and II investigation are presented in Appendix D. With respect to total cyanide values, soil sample B-6-1 (0-2 feet) contained 1.25 ppm total cyanide. Sample B-8-1 (0-2 feet) contained 1.00 ppm; all other soil samples were found to contain less than 1 ppm total cyanide.

Volatile organic compounds (VOCs) were detected in soil samples from borings B-10, B-12 and B-14 in the vicinity of the former waste oil dump site. Compounds detected were toluene, ethylbenzene, xylenes and methylene chloride. VOC results for each of the analyzed soil samples from borings B-10, B-12, B-13 and B-14 are included in Appendix D. Toluene, ethylbenzene and xylenes are typical compounds detected in gasoline or oil contaminated soils. The source of methylene chloride is not known, though laboratory contamination is suspected. Methylene chloride is a common laboratory contaminant.

Polychlorinated biphenyls (PCBs) were detected in the soil sample from Boring B-10 only. The detected concentration was 5.53 ppm. PCBs were not detected in samples from Borings B-12, B-13 and B-14. Refer to Appendix D for the PCB analytical results.

CONCLUSIONS

In summary, soil contamination at the rear of the Workshop for the Blind facility has occurred in two areas. Cyanide contaminated soils were found in

the area of the concrete slabs in the rear courtyard of the facility. Concentrations of cyanide in the 37 soil samples analyzed by Warzyn ranged from less than 0.13 mg/kg (ppm) to 3.06 ppm in 36 of the samples. One soil sample from Boring S-1 (1 foot) had a cyanide concentration of 37.4 ppm.

The degree of cyanide contamination in the soils at the rear of the Workshop for the Blind facility presents a concern in regard to inhalation, absorption and ingestion. In the presence of certain liquids, such as acid, cyanide salts may produce highly toxic hydrogen cyanide gas. In addition, dust in the work area may contain cyanide compounds. These two factors result in a potential respiratory hazard at the site.

The former waste oil/solvent dump site was located by borings in the northwest corner of the Workshop for the Blind property, near the existing utility pole, as described by Mr. Frick (former employee of Milwaukee Electric Tool Co.). Toluene, ethylbenzene, xylenes and methylene chloride were detected in soil samples from the dump site area. In addition, one sample (B-10) had a PCB concentration of 5.53 ppm.

The results of the VOC and PCB analyses of soils from the dump site area suggest that the site was used to dispose of waste oils and oil used in electrical equipment. The type of PCB detected in the soil sample from Boring B-10 was Aroclor 1254, which is typically found in oils associated with electrical equipment.

Both areas of soil contamination present a potential for contamination of groundwater beneath and hydraulically downgradient from the site. Salts such as potassium cyanide and sodium cyanide, which may have been disposed at the site, are very soluble in aqueous solutions. The resulting cyanide ions readily hydrolyze with water to form hydrogen cyanide (Criteria and Standards Division, Office of Water Planning and Standards, U.S. EPA, no date). Infiltrating precipitation could contact the cyanide salts and the resulting solution could further infiltrate to the water table. Several of the VOCs detected in the waste oil dump site area soils (toluene, ethylbenzene and xylenes) are also water soluble and are potential groundwater contaminants.

RECOMMENDATIONS

Based on the analytical results from the emergency response soil sampling and the Phase I and II soil sampling program described above, Warzyn recommends that the DOA and WEI discuss the site investigation results with DNR to obtain guidance relative to the following recommendations:

- Sewer line construction at the rear of the Workshop for the Blind facility should be allowed to proceed. Warzyn personnel should observe the construction of the sewer line. Warzyn's activities should include monitoring the breathing zone for hydrogen cyanide, review of on-site safety procedures, and summarizing results.

- All on-site excavated soils should be properly disposed. Based on reported past operations at the facility, there is no information that indicates the presence of additional types of hazardous materials in the soils. DNR guidance should be followed with respect to testing of soils prior to disposal, as well as subsequent soil disposal methods.

- In past PCB soil contamination clean-ups, the DNR has recommended a clean-up level of 5 ppm PCB in soils. Because the maximum PCB concentration at this site slightly exceeded the DNR recommended clean-up level, the need for further soil testing should be discussed with DNR. Additional soil testing may be required to better characterize site soil PCB contamination and its areal extent.

- DNR guidance should be obtained regarding the proposed Phase III installation of groundwater monitoring wells. If DNR requires the installation of groundwater monitoring wells, Warzyn recommends the installation of one upgradient monitoring well to evaluate background groundwater quality at the site, one monitoring well within the waste oil/solvent disposal area, and one monitoring well located within the area where cyanide was detected (Refer to Drawing C 205350-B1 for proposed well locations). To avoid potential damage of the proposed monitoring wells from heavy construction equipment, we recommend that installation of wells be delayed until the sewer line construction is completed.

MMM/MGC/LLF/cac/DRV
[cac-59-25]

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TABLE 1

SUMMARY OF SOIL BORING AND SAMPLING DEPTHS
BORINGS B-1 THROUGH B-14
WORKSHOP FOR THE BLIND SITE
MILWAUKEE, WISCONSIN

Boring Number	Boring Depth (ft).	Depth(s) of Samples (ft)*
B-1	18.7	Continuous 0-10, 13.5-15.5, 18.5-18.7
B-2	19.5	Continuous 0-10, 13.5-15.5, 18.5-19.5
B-3	19.5	Continuous 0-10, 13.5-15.5, 18.5-19.5
B-4	15.0	Continuous 0-10, 13.5-15.0
B-5	15.0	Continuous 0-10, 13.5-15.0
B-6	15.0	Continuous 0-10, 13.5-15.0
B-7	14.5	Continuous 0-10, 13.5-14.5
B-8	15.0	Continuous 0-9, 13.5-15.0
B-9	15.0	None, exploratory boring
B-10	2.0	Grab Sample From Auger Cuttings
B-11	12.0	Continuous 0-12
B-12	10.5	Continuous 0.5-10.5
B-13	10.0	Continuous 0-10, Auger Samples Only
B-14	10.0	Continuous 0-10

*The term continuous refers to samples collected every two feet over the given interval.

[cac-59-25]

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APPENDIX A

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APPENDIX A

IMPORTANT INFORMATION
ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

More construction problems are caused by site subsurface conditions than any other factor. As troublesome as subsurface problems can be, their frequency and extent have been lessened considerably in recent years, thanks to the Association of Soil and Foundation Engineers (ASFE).

When ASFE was founded in 1969, subsurface problems were frequently being resolved through lawsuits. In fact, the situation had grown to such alarming proportions that consulting geotechnical engineers had the worst professional liability record of all design professionals. By 1980, ASFE-*member consulting soil and foundation engineers had the best professional liability record*. This dramatic turn-about can be attributed directly to client acceptance of problem-solving programs and materials developed by ASFE for its members' application. *This acceptance was gained because clients perceived the* ASFE *approach to be in their own best interests.* Disputes benefit only those who earn their living from others' disagreements.

The following suggestions and observations are offered to help you reduce the geotechnical-related delays, cost-overruns and other costly headaches that can occur during a construction project.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A geotechnical engineering report is based on a subsurface exploration plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and configuration; the location of the structure on the site and its orientation; physical concomitants such as access roads, parking lots, and underground utilities, and the level of additional risk which the client assumed by virtue of limitations imposed upon the exploratory program. To help avoid costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of his report may affect his recommendations.

Unless your consulting geotechnical engineer indicates otherwise, *your geotechnical engineering report should not be used:*

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one;
- when the size or configuration of the proposed structure is altered;
- when the location or orientation of the proposed structure is modified;
- when there is a change of ownership, or
- for application to an adjacent site.

A geotechnical engineer cannot accept responsibility for problems which may develop if he is not consulted after factors considered in his report's development have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by the geotechnical engineer who then renders an opinion about overall subsurface conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those opined to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. For example, the actual interface between materials may be far more gradual or abrupt than the report indicates, and actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their geotechnical consultant through the construction stage,* to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a geotechnical engineering report is based on conditions which existed at the time of subsurface exploration, *construction decisions should not be based on a geotechnical engineering report whose adequacy may have been affected by time.* Speak with the geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid these problems, the geotechnical engineer should be retained to work with other appropriate design professionals to explain relevant geotechnical findings and to review the adequacy

of their plans and specifications relative to geotechnical issues.

BORING LOGS SHOULD NOT BE SEPARATED FROM THE ENGINEERING REPORT

Final boring logs are developed by the geotechnical engineer based upon his interpretation of field logs (assembled by site personnel) and laboratory evaluation of field samples. Only final boring logs customarily are included in geotechnical engineering reports. *These logs should not under any circumstances be redrawn* for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to minimize the possibility of contractors misinterpretating the logs during bid preparation. When this occurs, delays, disputes and unanticipated costs are the all-too-frequent result.

To minimize the likelihood of boring log misinterpretation, *give contractors ready access to the complete geotechnical engineering report*. Those who do not provide such access may proceed under the *mistaken* impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes which aggravate them to disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY

Because geotechnical engineering is based extensively on judgement and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against geotechnical consultants. To help prevent this problem, geotechnical engineers have developed model clauses for use in written transmittals. These are *not* exculpatory clauses designed to foist the geotechnical engineer's liabilities onto someone else. Rather, they are definitive clauses which identify where the geotechnical engineer's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your geotechnical engineering report, and you are encouraged to read them closely. Your geotechnical engineer will be pleased to give full and frank answers to your questions.

OTHER STEPS YOU CAN TAKE TO REDUCE RISK

Your consulting geotechnical engineer will be pleased to discuss other techniques which can be employed to mitigate risk. In addition, the Association of Soil and Foundation Engineers has developed a variety of materials which may be beneficial. Contact ASFE for a complimentary copy of its publications directory.

Published by

ASFE

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APPENDIX B

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APPENDIX "B"

FIELD METHODS
for
EXPLORATION AND SAMPLING SOILS

A. Boring Procedures Between Samples

The bore hole is extended downward, between samples, by a continuous flight auger, driven and washed-out casing, or rotary boring with drilling mud or water.

B. Standard Penetration Test and Split-Barrel Sampling of Soils (ASTM* Designation: D 1586)

This method consists of driving a 2" outside diameter split barrel sampler using a 140 pound weight falling freely through a distance of 30 inches. The sampler is first seated 6" into the material to be sampled and then driven 12". The number of blows required to drive the sampler the final 12" is recorded on the log of borings and known as the Standard Penetration Resistance. Recovered samples are first classified as to texture by the driller. Later, in the laboratory the driller's classification is reviewed by a soils engineer who examines each sample.

C. Thin-walled Tube Sampling of Soils (ASTM* Designation: D 1587)

This method consists of forcing a 2" or 3" outside diameter thin wall tube by hydraulic or other means into soils, usually cohesive types. Relatively undisturbed samples are recovered.

D. Soil Investigation and Sampling by Auger Borings (ASTM* Designation: D 1452)

This method consists of augering a hole and removing representative soil samples from the auger flight or bucket at 5'0" intervals or with each change in the substrata. Relatively disturbed samples are obtained and its use is therefore limited to situations where it is satisfactory to determine approximate subsurface profile.

E. Diamond Core Drilling for Site Investigation (ASTM* Designation: D 2113)

This method consists of advancing a hole in hard strata by rotating downward a single tube or double tube core barrel equipped with a cutting bit. Diamond, tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings. Normally a 2" O.D. by 1 3/8" I.D. coring bit is used unless otherwise noted. The rock or hard material recovered within the core barrel is examined in the field and laboratory. Cores are stored in partitioned boxes and the length of recovered material is expressed as a percentage of the actual distance penetrated.

*American Society for Testing and Materials, Philadelphia, Pennsylvania

APPENDIX C

Boring Logs

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WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 1
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery	Moisture	N	Depth		qu	W	LL	PL	D
1	SS	4"	D/M	4		Concrete Pavement					
2	SS	8"	M	7		Mottled Brown Silty CLAY, Some Fine to Coarse Sand, Trace Fine Gravel (CL-ML)					
3	SS	10"	M	23	5	Red-Brown Sandy SILT (ML)					
4	SS	25"	W	59		*					
5	SS	10"	W	91	10	Brown Silty SAND, Trace to Little Fine Gravel (SM)					
6	SS	24"	W	52	15	Brown Fine to Coarse SAND and GRAVEL (SP)					
7	SS	6"	W	100	20	Trace to Little Clay at 18.5'					
						End Boring at 18.7'					
					25	*Mottled Red-Brown Silty CLAY, Little Cobbles (CL-ML)					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7.0'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/14/86 Complete 5/14/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS 0- 18.7'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 2
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
						Concrete Pavement					
1	SS	12"	M	8		Gray-Black Silty CLAY (CL-ML)					
2	SS	24"	M	13							
3	SS	20"	M	5	5	Brown Fine to Coarse SAND (SP)					
4	SS	24"	W	27		6" Clay Unit at 5.0-5.5'					
5	SS	24"	W	72		Brown Fine to Coarse SAND & GRAVEL (SP)					
					10	Brown Silty Fine SAND, Little to Some Gravel and Cobbles (SP)					
6	SS	7"	W	46	15	More Gravel & Cobbles at 13.5-15.0'					
7	SS	6"	W	100	20						
						End Boring at 19.5'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/14/86 Complete 5/14/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS
0-19.5'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 3
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9536, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES Qu	W	LL	PL	D
1	SS	16"	M	8		Brown-Black Clayey SILT, Trace Sand, Trace Fine Gravel (ML) (More Gravel and Some Organic Matter at 2-4')					
2	SS	4"	M	14							
3	SS	22"	M	18	5	Brown Fine to Coarse SAND and GRAVEL (SP)					
4	SS	14"	M/W	45		Brown Fine to Coarse GRAVEL & COBBLES Some Fine to Coarse Sand (GW)					
5	SS	24"	W	47	10	Brown Silty CLAY, Some Fine Silty Sand, Trace to Little Gravel, Trace Cobbles (CL-ML)					
6	SS	24"	W	38	15	Brown Fine to Coarse GRAVEL and Cobbles, Trace Fine to Coarse Sand (GW)					
7	SS	6"	W	100	20	End Boring at 19.5'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/15/86 Complete 5/15/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS
0-19.5'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 4
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery ↓	Moisture ↓	N	Depth		qu	W	LL	PL	D
1	SS	1"	M	6		Brown Fine GRAVEL, Little Coarse SAND, Some Black Silty Clay (GP-GC)					
2	SS	24"	M	10		*					
3	SS	24"	M	19	5	Brown Fine to Coarse SAND, Trace Gravel (SP) (More Gravel at 5-6')					
4	SS	20"	W	55		Brown Fine to Coarse SAND and GRAVEL, Some Cobbles (SP)					
6	SS	4"	W	53	10						
5	SS	16"	W	43	15	Brown-Gray GRAVEL and Cobbles, Trace Fine to Coarse Sand (GW)					
						End Boring at 15'					
					20	*Brown Mottled Silty CLAY, Trace Fine Gravel (CL-ML)					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/15/86 Complete 5/15/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS 0-15'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 5
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES q_u	W	LL	PL	D
1	SS	18"	M	9		Brown Fine to Coarse SAND (FILL)(SP)					
						*					
2	SS	16"	M	7		**					
						***					
3	SS	6"	M	20	5	Black-Brown Fine to Coarse SAND and GRAVEL (SP)					
4	SS	10"	M/W	32							
5	SS	20"	W	27	10	Maroon-Brown Silty Fine SAND, Little Fine to Coarse Sand (GW)					
						Brown Fine to Coarse GRAVEL and Cobbles, Little Fine to Coarse Sand (GW)					
6	SS	6"	W	22	15	End Boring at 15'					
					20	*Gray Fine to Coarse GRAVEL, Some Fine to Coarse Sand (GW)					
						**Brown-Black Silty CLAY, Trace Gravel (CL-ML)					
					25	***Brown-Reddish CINDERS					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/15/86 Complete 5/15/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS 0-15'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 6
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery	Moisture	N	Depth		qu	W	LL	PL	D
1	SS	5"	M	10		Black-Brown SILT, Some Clay and Sand and Gravel (ML)					
2	SS	10"	M	10							
3	SS	12"	M	28	5	Brown Fine to Coarse SAND, Trace Gravel (SP)					
4	SS	6"	M/W	56		Brown SAND and GRAVEL, Some Cobbles (SP)					
5	SS	4"	W	32	10						
6	SS	18"	W	51	15	Brown Fine to Coarse GRAVEL and Cobbles, Trace Fine to Coarse Sand (GW)					
						End Boring at 15'					
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/15/86 Complete 5/15/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS
0-15'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 7
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery	Moisture	N	Depth		qu	W	LL	PL	D
1	SS	15"	M	13		Gray SAND, GRAVEL, COBBLES					
2	SS	13"	M	8		Brown-Black Silty Fine to Coarse SAND, Trace Gravel (SP)					
3	SS	24"	M	13	5	* Brown Fine to Coarse SAND, Some Gravel (SP)					
4	SS	16"	M/W	26		Trace Black Cinders at 7'					
5	SS	24"	W	50	10	Gray-Brown Fine to Coarse SAND & GRAVEL, Trace Silt, Trace Clay (SP)					
6	SS	12"	W	100	15	Gray Fine to Coarse SAND & GRAVEL, Trace Silt (SP)					
						End Boring at 14.5'					
					20	*Brown Silty CLAY (CL-ML)					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 7.5'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/19/86 Complete 5/19/86
Crew Chief JP Rig 9150
Drilling Method HSA/SS 0- 13.5'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 8
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
		Recovery	Moisture								
No.	Type	↓	↓	N	Depth		Wn	W	LL	PL	D
						Gray GRAVEL, COBBLES, SAND					
1	SS	17"	M	9		Black-Brown SILT, Trace Fine to Coarse Sand (ML)					
2	SS	9"	M	13							
3	SS	22"	M	14	5	Brown Fine to Coarse SAND, Trace to Little Gravel (SP)					
4	SS	5"	M/W	16		More Gravel, Some Silt at 7-8'					
5	SS	6"	W	80	10						
6	SS	7"	W	54	15	Gray Silty SAND & GRAVEL, Some Cobbles (SM)					
						End Boring at 15'					
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 8'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/19/86 Complete 5/19/86
Crew Chief JP Rig 9150
Drilling Method HSA/SS 0-15'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 11
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES γ	W	LL	PL	D
						Asphalt Pavement					
1	SS	24"	M	9		Black TOPSOIL (Hydrocarbon Odor)					
2	SS	24"	M	10	5	Mottled Brown-Black Lean CLAY, Little to Some Silt (CL) (Turned Reddish-Brown at 4') (Turned Gray at 5')					
3	SS	24"	M	10							
4	SS	14"	M	25	10						
5	SS	12"	M	39		Brown Silty SAND and GRAVEL (SM)					
						End Boring at 12'					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling: '10'
Upon Completion of Drilling:
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/14/86 Complete 5/14/86
Crew Chief JJ Rig 9150
Drilling Method HSA/SS 0-12'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location

Boring No. 12
Surface Elevation
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES qu	W	LL	PL	D
1	SS	24"	M	11		Black SILT, Trace Gravel (ML)					
2	SS	15"	M	11	5	Black Silty CLAY, Trace Gravel (CL-ML)					
3	SS	24"	M	13		Yellow-Brown Silty CLAY, Trace Gravel (CL-ML)					
4	SS	12"	M	12		Brown Fine to Coarse SAND, Trace Gravel (SP) (Hydrocarbon Material at 10.0-10.5')					
5	SS	12"	M	26	10						
						End Boring at 10.5'					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/19/86 Complete 5/19/86
Crew Chief JP Rig 9150
Drilling Method SS 0-10.5'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 13
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery	Moisture	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES Qu	W	LL	PL	D
						Gray GRAVEL, SAND, COBBLES					
1	AS		M			Black SILT (ML)					
2	AS		M			Brown Silty CLAY (CL-ML)					
					5	Tan Silty CLAY (CL-ML)					
3	AS		M								
4	AS		M								
5	AS		M								
					10	End Boring at 10'					
					15						
					20						
					25	Note: Split-spoon samples were not obtained because drill rig tower could not be raised due to proximity to overhead power lines. Consequently, reported depths of changes in subsoils are approximate.					
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/19/86 Complete 5/19/86
Crew Chief JP Rig 9150
Drilling Method HSA 0-10'

W-1

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Wisconsin Dept. of Administration
Wisconsin Workshop for the Blind

Location:

Boring No. 14
Surface Elevation:
Job No. 205350
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	Type	Recovery	Moisture	N	Depth		qu	W	LL	PL	D
1	SS	24"	M	14		Black SILT, Trace Fine Sand, Trace Gravel (ML)					
2	SS	14"	M	11							
3	SS	24"	M	10	5	Yellow-Brown SILT, Some Clay, Trace Fine Sand, Trace Gravel (SM)					
4	SS	24"	M	10		Yellow-Brown Silty CLAY, Trace Fine Gravel (CL-ML)					
5	SS	22"	M/W	23	10	Yellow-Brown Fine to Coarse SAND (SP)					
						End Boring at 10'					
					15						
					20						
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling 9'
Upon Completion of Drilling
Time After Drilling
Depth to Water
Depth to Cave In

GENERAL NOTES

Start 5/19/86 Complete 5/19/86
Crew Chief JP Rig 9150
Drilling Method HSA/SS
0-10'

W-1

APPENDIX D

Analytical Laboratory Results of Soil Samples

WARZYN

W A R Z Y N E N G I N E E R I N G
A N A L Y T I C A L L A B O R A T O R Y R E S U L T S

PROJECT: HOUSE OF THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/7/86
CK'D: CAW APP'D: MJL
DATE ISSUED: 5-19-86

LAB #	SAMPLE DESCRIPTION	CYANIDE MG/KG
9806	PILE COMPOSITE	0.45*
9807	SURFACE 1 - 1'	0.47*
9808	SURFACE 1 - 2'	0.68
9809	SURFACE COMPOSITE	0.54
9810	SURFACE 2 - 1'	0.13
9811	SURFACE 2 - 2'	<0.13
9812	SURFACE 3 - 6"	0.66
9813	CORE 4 0 - 6"	<0.13
9814	CORE 4 1.5 - 2'	0.20
9815	CORE 4 2.5 - 3'	0.20
9816	TANK BACKFILL	0.28

* AVERAGE OF REPLICATE ANALYSES.

RESULTS ARE REPORTED ON AN "AS RECEIVED" BASIS.

W A R Z Y N E N G I N E E R I N G
A N A L Y T I C A L L A B O R A T O R Y R E S U L T S

PROJECT: HOUSE OF THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/7/86
CK'D: CAW APP'D: MJL
DATE ISSUED: 5-19-86

9837
WHITE PYROPHORIC MATERIAL

POTASSIUM (%)	36%
SODIUM (%)	11%

RESULTS ARE REPORTED ON AN "AS RECEIVED" BASIS.

W A R Z Y N E N G I N E E R I N G
A N A L Y T I C A L L A B O R A T O R Y R E S U L T S

PROJECT: HOUSE OF THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/15/86
CK'D: CAW APP'D: MJL
DATE ISSUED: 5-21-86

LAB #	SAMPLE DESCRIPTION	CYANIDE MG/KG
10026	B1 0.5 - 2'	0.15
10027	B1 2 - 4'	0.13
10029	B1 6 - 8'	<0.13
10031	B1 13.5 - 15.5'	<0.13
10033	B2 0.5 - 2'	<0.13
10034	B2 2 - 4'	<0.13
10036	B2 6 - 8'	<0.13
10038	B2 13.5 - 15'	<0.13

RESULTS ARE REPORTED IN AN "AS RECEIVED" BASIS.

W A R Z Y N E N G I N E E R I N G
A N A L Y T I C A L L A B O R A T O R Y R E S U L T S

PROJECT: WORKSHOP FOR THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/21/86
CK'D: [illegible] APP'D: MJL
DATE ISSUED: 6-[illegible]-86

LAB #	SAMPLE #	TOTAL CYANIDE
10128	B3-1	0.16
10129	B3-2	0.36
10130	B3-4	<0.15
10131	B4-1	<0.15
10132	B4-2	<0.15
10133	B4-4	<0.15
10134	B5-1	0.20
10135	B5-2	0.20
10136	B5-4	<0.15
10137	B6-1	1.25
10138	B6-2	<0.15
10139	B6-4	<0.15
10140	B7-1	0.37
10141	B7-2	<0.15
10142	B7-4	<0.15
10143	B8-1	1.00
10144	B8-2	<0.15
10145	B8-4	<0.15

RESULTS ARE IN MG/KG AS RECEIVED.

W A R Z Y N E N G I N E E R I N G
V O L A T I L E O R G A N I C R E S U L T S

PROJECT: HOUSE OF THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/15/86
CK'D: CAW APP'D: MJL
DATE ISSUED: 5-21-86

COMPOUND	REPORTABLE DETECTION LIMIT (UG/G)	10040 B10-1-2
BENZENE	0.1	X
BROMODICHLOROMETHANE	0.1	X
BROMOFORM	0.2	X
CARBON TETRACHLORIDE	0.1	X
CHLOROBENZENE	0.1	X
CHLORODIBROMOMETHANE	0.1	X
CHLOROETHANE	0.1	X
2-CHLOROETHYLVINYL ETHER	1.0	X
CHLOROFORM	0.1	X
1,2-DICHLOROBENZENE	0.5	X
1,3-DICHLOROBENZENE	0.5	X
1,4-DICHLOROBENZENE	0.5	X
1,1-DICHLOROETHANE	0.1	X
1,2-DICHLOROETHANE	0.1	X
1,1-DICHLOROETHENE	0.1	X
1,2-DICHLOROETHENE	0.1	X
T-1,3-DICHLOROPROPENE	0.1	X
C-1,3-DICHLOROPROPENE	0.1	X
1,2-DICHLOROPROPANE	0.1	X
ETHYLBENZENE	0.1	0.11
METHYL BROMIDE	0.2	X
METHYL CHLORIDE	0.1	X
METHYLENE CHLORIDE	0.1	X
1,1,2,2-TETRACHLOROETHANE	0.1	X
TETRACHLOROETHENE	0.1	X
TOLUENE	0.1	BMDL
1,1,1-TRICHLOROETHANE	0.1	X
1,1,2-TRICHLOROETHANE	0.1	X
TRICHLOROETHENE	0.1	X
VINYL CHLORIDE	0.1	X
XYLENES	0.1	0.47

X = ANALYZED, BUT NOT DETECTED.
BMDL = DETECTED, BUT LESS THAN REPORTABLE DETECTION LIMIT.

W A R Z Y N E N G I N E E R I N G
V O L A T I L E O R G A N I C R E S U L T S

PROJECT: WORKSHOP FOR THE BLIND

LOCATION: MILWAUKEE, WISCONSIN

PROJECT#: 205350
DATE SAMPLED: 5/21/86
CK'D: CAW APP'D: MJC
DATE ISSUED: 6/19/86

COMPOUND	REPORTABLE DETECTION LIMIT (UG/G)	10146 B12-5	10147 B13-1	10148 B14-3
BENZENE	0.1	X	X	X
BROMODICHLOROMETHANE	0.1	X	X	X
BROMOFORM	0.2	X	X	X
CARBON TETRACHLORIDE	0.1	X	X	X
CHLOROBENZENE	0.1	X	X	X
CHLORODIBROMOMETHANE	0.1	X	X	X
CHLOROETHANE	0.1	BMDL	X	X
2-CHLOROETHYLVINYL ETHER	1.0	X	X	X
CHLOROFORM	0.1	X	X	X
1,2-DICHLOROBENZENE	0.5	X	X	X
1,3-DICHLOROBENZENE	0.5	X	X	X
1,4-DICHLOROBENZENE	0.5	X	X	X
1,1-DICHLOROETHANE	0.1	X	X	X
1,2-DICHLOROETHANE	0.1	X	X	X
1,1-DICHLOROETHENE	0.1	X	X	X
1,2-DICHLOROETHENE	0.1	X	X	X
T-1,3-DICHLOROPROPENE	0.1	X	X	X
C-1,3-DICHLOROPROPENE	0.1	X	X	X
1,2-DICHLOROPROPANE	0.1	X	X	X
ETHYLBENZENE	0.1	X	X	X
METHYL BROMIDE	0.2	X	X	X
METHYL CHLORIDE	0.1	X	X	X
METHYLENE CHLORIDE	0.1	X	X	0.18
1,1,2,2-TETRACHLOROETHANE	0.1	X	X	X
TETRACHLOROETHENE	0.1	X	X	X
TOLUENE	0.1	0.11	X	0.31
1,1,1-TRICHLOROETHANE	0.1	X	X	X
1,1,2-TRICHLOROETHANE	0.1	X	X	X
TRICHLOROETHENE	0.1	X	X	X
VINYL CHLORIDE	0.1	X	X	X
XYLENES	0.1	X	X	X

X = ANALYZED, BUT NOT DETECTED.
BMDL = DETECTED, BUT LESS THAN REPORTABLE DETECTION LIMIT.

HAZLETON LABORATORIES AMERICA, INC. Chemical & BioMedical Sciences Division
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

MIKE LINSKENS
WARZYN ENGINEERING, INC.
1 SCIENCE COURT
UNIVERSITY RESEARCH PARK
MADISON, WI 53705

SAMPLE NUMBER: 60504051
DATE ENTERED: 05/19/86
REPORT PRINTED: 06/20/86

SOIL: WEI # 10040; B10 1-2

PURCHASE ORDER NUMBER: 205350-5/19/86

PCB

COMPOUND NAME	AS IS BASIS PPM
PCB 1254	5.53
PCB 1016	LESS THAN 0.01
PCB 1221	LESS THAN 0.01
PCB 1232	LESS THAN 0.01
PCB 1242	LESS THAN 0.01
PCB 1248	LESS THAN 0.01
PCB 1260	LESS THAN 0.01
MOISTURE	12%

METHOD REFERENCES

PCB
CHEMISTRY LABORATORY MANUAL FOR BOTTOM SEDIMENTS AND ELUTRIATE TESTING, U. S. ENVIRONMENTAL PROTECTION AGENCY, CHICAGO, IL., MARCH 1979, CRL METHOD NUMBERS 198 THRU 207.

HAZLETON LABORATORIES AMERICA, INC. Chemical & BioMedical Sciences Division
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

MIKE LINSKENS
MARZYN ENGINEERING, INC.
SCIENCE COURT
UNIVERSITY RESEARCH PARK
MADISON, WI 53705

SAMPLE NUMBER: 60504777
DATE ENTERED: 05/22/86
REPORT PRINTED: 06/20/86

WEI # 10146: 5 FROM B-12

PURCHASE ORDER NUMBER: 205350-5/21/86

PESTICIDE/PCB FRACTION

COMPOUND NAME	DRY WEIGHT BASIS MCG/KG
PCB 1260	LESS THAN 920
PCB 1254	LESS THAN 920
PCB 1248	LESS THAN 460
PCB 1242	LESS THAN 460
PCB 1232	LESS THAN 460
PCB 1016	LESS THAN 460
PCB 1221	LESS THAN 2300*
MOISTURE	13.2%

* ELEVATED LIMIT OF QUANTIFICATION DUE TO INTERFERENCES PRESENT.

METHOD REFERENCES

PESTICIDE/PCB FRACTION
METHODS FOR ORGANIC ANALYSIS OF MUNICIPAL AND INDUSTRIAL WASTEWATER, EPA PUBLICATION NO. 600/4-82-057, METHOD 608, U.S. EPA, CINCINNATI, OH (REVISED OCTOBER 1984)
U.S. EPA METHOD 608 (FEDERAL REGISTER, VOLUME 49, NO. 209, PG. 43321-43336, OCTOBER 26, 1984)
TEST METHODS FOR EVALUATING SOLID WASTE, EPA PUBLICATION NO. SW-846, SECOND EDITION, METHOD 8080, U.S. EPA, WASHINGTON, DC (REVISED APRIL 1984)

HAZLETON LABORATORIES AMERICA, INC. Chemical & BioMedical Sciences Division
3301 KINSMAN BLVD. • P.O. BOX 7545 • MADISON, WISCONSIN 53707 • PHONE (608) 241-4471 • TLX 703956 HAZRAL MDS UD

REPORT OF ANALYSIS

MIKE LINSKENS
MARZYN ENGINEERING, INC.
SCIENCE COURT
UNIVERSITY RESEARCH PARK
MADISON, WI 53705

SAMPLE NUMBER: 60504778
DATE ENTERED: 05/22/86
REPORT PRINTED: 06/20/86

WEI # 10147: 1 FROM B-13

PURCHASE ORDER NUMBER: 205350-5/21/86

PESTICIDE/PCB FRACTION

COMPOUND NAME	DRY WEIGHT BASIS MCG/KG
PCB 1260	LESS THAN 184
PCB 1254	LESS THAN 184
PCB 1248	LESS THAN 92
PCB 1242	LESS THAN 92
PCB 1232	LESS THAN 92
PCB 1016	LESS THAN 92
PCB 1221	LESS THAN 92
MOISTURE	12.9%

METHOD REFERENCES

PESTICIDE/PCB FRACTION
METHODS FOR ORGANIC ANALYSIS OF MUNICIPAL AND INDUSTRIAL WASTEWATER, EPA PUBLICATION NO. 600/4-82-057, METHOD 608, U.S. EPA, CINCINNATI, OH (REVISED OCTOBER 1984)
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REPORT OF ANALYSIS

MIKE LINSKENS
HARZYN ENGINEERING, INC.
SCIENCE COURT
UNIVERSITY RESEARCH PARK
MADISON, WI 53705

SAMPLE NUMBER: 60504779
DATE ENTERED: 05/22/86
REPORT PRINTED: 06/20/86

WEI # 10148: 3 FROM B-14

PURCHASE ORDER NUMBER: 205350-5/21/86

PESTICIDE/PCB FRACTION

COMPOUND NAME	DRY WEIGHT BASIS MCG/KG
PCB 1260	LESS THAN 206
PCB 1254	LESS THAN 206
PCB 1248	LESS THAN 103
PCB 1242	LESS THAN 103
PCB 1232	LESS THAN 103
PCB 1016	LESS THAN 103
PCB 1221	LESS THAN 103
MOISTURE	22.7%

METHOD REFERENCES

PESTICIDE/PCB FRACTION
METHODS FOR ORGANIC ANALYSIS OF MUNICIPAL AND INDUSTRIAL WASTEWATER, EPA PUBLICATION NO. 600/4-82-057, METHOD 608, U.S. EPA, CINCINNATI, OH (REVISED OCTOBER 1984)
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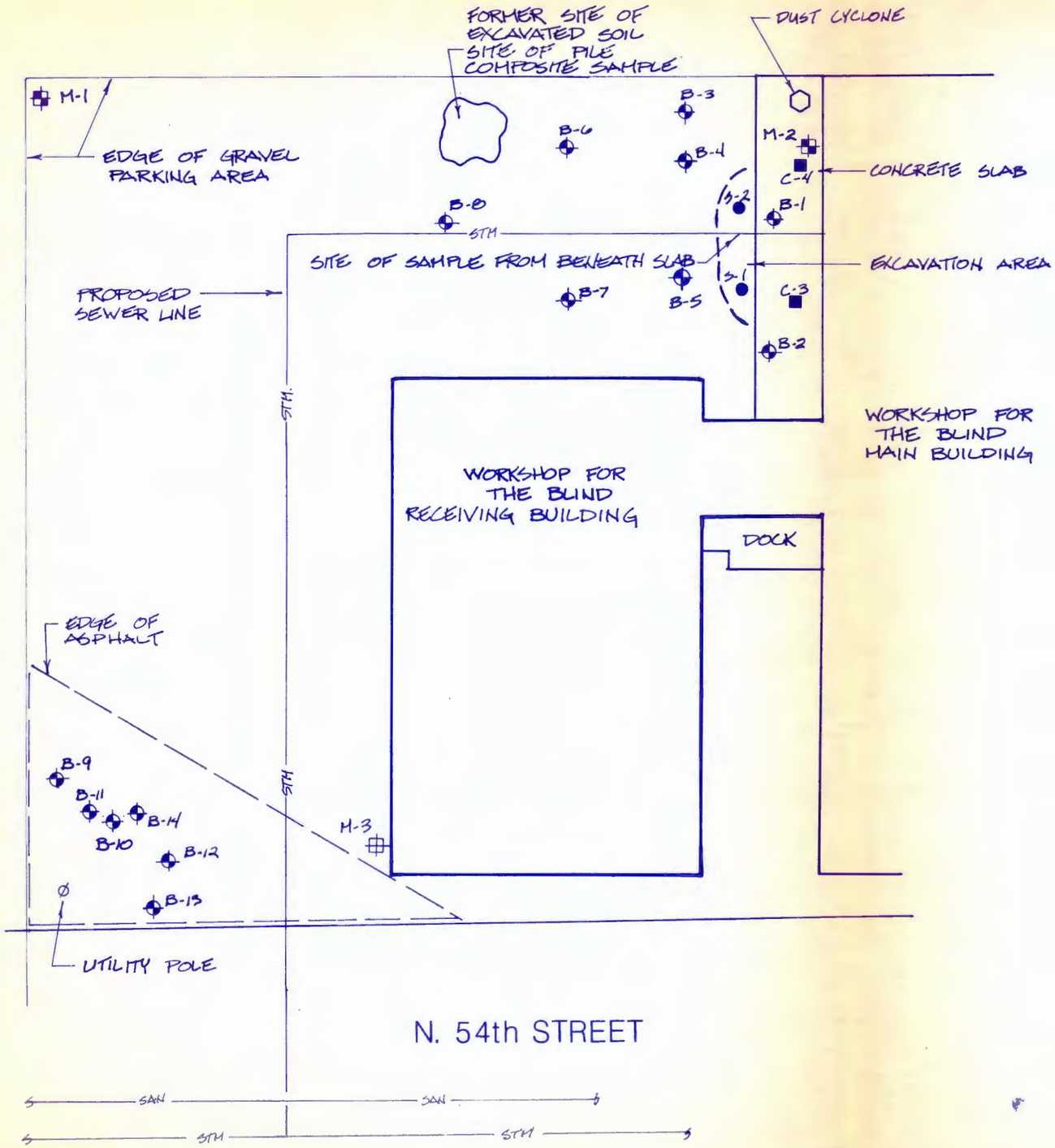

LEGEND:

- B-6 DRILLED SOIL BORING LOCATION AND NUMBER
- C-1 CORE BORING LOCATION AND NUMBER
- M-1 PROPOSED MONITORING WELL LOCATION
- S-1 HAND AUGER SOIL BORING LOCATION AND NUMBER.
- M-3 PROPOSED MONITORING WELL LOCATION

NOTES

1. LOCATIONS OF SOIL BORINGS AND CORE BORINGS ARE APPROXIMATE.
2. BASE MAP FROM EARLL AND ASSOCIATES, LTD. SITE PLAN DRAWING NO. 1 DATED 9/26/85.

north

WARZYN

SITE FEATURES & SOIL BORING LOCATION MAP

WISCONSIN WORKSHOP FOR THE BLIND
MILWAUKEE, WISCONSIN

DRAWN	CHECKED	APPROVED	DATE	SCALE	DRAWING NO.
EKG	MGC²	MGC²	6-26-86	1" = 20'	C205350-B1

TELEDYNE POST N75674

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