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PHASE I
ENVIRONMENTAL INVESTIGATION
MANUFACTURED GAS PLANT SITE
SHEBOYGAN, WISCONSIN

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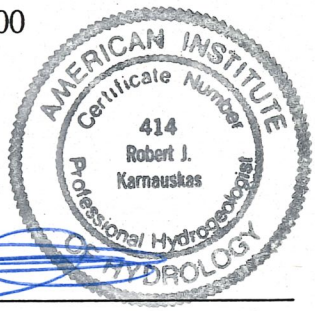

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1.0 EXECUTIVE SUMMARY

Wisconsin Public Service Corporation (WPSC) contracted Simon Hydro-Search in cooperation with the City of Sheboygan (City) to conduct a Phase I environmental investigation at the former WPSC Sheboygan manufactured gas plant (MGP) site. The MGP facility manufactured gas used for lighting and heating as well as producing by-products which served as feedstocks for other chemical manufacturing operations. The plant operated between the period of approximately 1880 through 1930.

The purpose of the Phase I environmental investigation at the former MGP site was to gather preliminary information to evaluate the presence/absence of conditions of potential concern to human health and the environment.

The investigation conducted by Simon Hydro-Search consisted of test pit excavations, surface and subsurface soil sampling and ground-water sampling. Regional and local geology and hydrogeology, and the proximity of water supply wells to the site were also investigated.

Based on the results of this investigation, the following conclusions and recommendations are made:

Summary and Conclusions

- Organics impacts to site soils are generally confined to subsurface soils in the central portion of the property in the area of the former water gas and gas meter shop, purifier and tar storage tanks, which were likely sources. A presumably localized area of impacts related to fill materials at the location of a relief holder foundation occurs in the southern portion of the site.

- No significant concentrations of cyanide compounds, arsenic or nickel were detected in site test pit and surface soil samples.

- Based on grab ground-water sample results, organics ground-water impacts occur in the central portion of the site in the area of the former water gas and gas meter shop, purifier and tar storage tanks. Based on field observations and infrared spectroscopy analysis of a saturated soil sample from the gas holder and gas/oil tank area in the northern portion of the site, organics ground-water impacts likely occur in this area as well.

- Total (field filtered) cyanide concentrations above the State Enforcement Standard or Preventive Action Limit occurred for all site ground-water samples. The source of the elevated concentrations is unknown, as no significant concentrations of cyanide compounds was detected in site soil samples and no purifier wastes were observed during the investigation. However, the area near the former purifier was not investigated by Simon Hydro-Search as it is the current location of the City boat dock. Arsenic (field

filtered) was detected at or just above the State Preventive Action Limit at all locations.

Recommendations

- Site hydrogeologic conditions including shallow ground-water flow direction and the magnitude and extent of ground-water organics and total cyanide impacts should be further evaluated via monitor well installation and ground-water sampling.

- The extent of site soil impacts in the southern portion of the property near the relief holder, as well as the possible occurance of purifier wastes in the boat dock/former purifier area, should be further evaluated.

- The potential that observed site impacts related to petroleum oil (possibly devolatilized fuel oil) are in part due to non-MGP activities on and/or off-site should be further evaluated.

2.0 INTRODUCTION

2.1 Background

Wisconsin Public Service Corporation (WPSC) contracted Simon Hydro-Search in cooperation with the City of Sheboygan (City) to conduct a Phase I environmental investigation at the former WPSC Sheboygan manufactured gas plant (MGP) site. The MGP facility manufactured gas used for lighting and heating as well as producing by-products which served as feedstocks for other chemical manufacturing operations. The plant operated between the period of approximately 1880 through 1930.

The purpose of the Phase I environmental investigation at the former MGP site was to gather preliminary information to evaluate the presence/absence of conditions of potential concern to human health and the environment. Where target compounds are present in sufficient concentration to represent a human health and/or environmental concern, a Phase II investigation may be conducted to evaluate their extent and magnitude, as well as potential remedial alternatives. This report documents Simon Hydro-Search's Phase I investigation.

2.2 Facility Description/Operating History

The WPSC MGP site is located at 732 N Water Street in Sheboygan, Wisconsin (Figure 2-1). The MGP site is approximately three acres in size and is bounded by New York Avenue to the north, North Water Street to the east, Center Street to the south, and to the west by the Sheboygan River. Gas was manufactured at the facility between approximately 1880 and 1930 using coal and water gas processes. The gas plant buildings and structures have since been razed.

The property has been under the ownership of others since 1966 when the site was sold to Heileman Brewery for parking vehicles. A complete listing of previous owners is included in Appendix A. The potential for environmental impairment from subsequent property

owners since WPSC is unknown although a toy manufacturer, Garton Toy, reportedly stored naphthalene on the north edge of the property in the past. The property is currently owned by the City and has been developed into a boat docking and RV camping area due to its accessibility to the Sheboygan River. The site is gravel covered.

Previously existing and existing structures relevant to this investigation are shown on Figures 2-2 and 2-3, respectively. The maps were produced after review of a WPSC survey map of the property dated July 13, 1923 (Appendix A) and City of Sheboygan survey maps of the property. Based on the information provided, the following structures were present on the site during MGP operations:

- Gas relief holders,
- Gas/oil tank,
- Tar tanks,
- Purifier, and
- Gas manufacturing buildings and garage.

The wastes generated by the gas manufacturing processes used (coal and water gas) typically included coal tar residues and oxide box (purifier) wood chip wastes. Wood chips were commonly used at MGPs in the gas clean-up process. If produced, the fate of the oxide box wastes is unknown. The fate of the coal tar wastes is also not known although it is assumed that most of the coal tars were commercially marketed for other uses as was the case of many similar sites.

During construction of a foundation for the boat docking facility by the City in August 1990, dark oily waste material was encountered in an excavation along the shoreline. The location of this excavation was reported to be near the former location of the MGP tar tanks. A "worst case" sample of the waste was collected by the City and analyzed for a variety of organic and inorganic parameters by Ortek Environmental Laboratory. Compounds detected included polynuclear aromatic hydrocarbons (PAHs), benzene, ethylbenzene, toluene, and xylene (BETX), total petroleum hydrocarbons (TPH), and total/amenable

cyanide. Based on information obtained from the City, other test pit excavations contained "visible contamination" but were not sampled. Analytical results are contained in Appendix A. The locations of previous test pits and sample locations could not be reliably determined based on the available documentation.

2.3 Purpose and Scope of Investigation

The objective of this investigation was to collect data to complete a Phase I study of the site to confirm the above initial findings and to evaluate if the target compounds are present in sufficient concentrations to represent a human health and/or environmental concern. The investigation conducted by Simon Hydro-Search consisted of test pit excavations, surface and subsurface soil sampling and ground-water sampling. Regional and local geology and hydrogeology, and the proximity of water supply wells to the site was also investigated.

Sampling protocol strictly followed the sampling and analysis plan (SAP), Quality Assurance/Project Plan (QAPP), and Health and Safety Plan (HASP) methodologies and objectives outlined in Simon Hydro-Search's (October 4, 1991) Work Plan. The WDNR approved the approach of the investigation as outlined in the Work Plan in a letter dated February 17, 1992.

Included within this report are the field and laboratory data collected over the course of the investigation. Appendix A contains previous investigation documentation. Test pit logs are contained in Appendix B. Field photoionization detector calibration and field data documentation are summarized in Appendix C. Laboratory documentation is provided in Appendix D and available well logs for local water supply wells is provided in Appendix E.

3.0 REGIONAL SETTING

3.1 Physiography

The MGP site is located adjacent to the Sheboygan River approximately 1 mile west of Lake Michigan. There is approximately 35 feet of relief at the site ranging from approximately 590 ft. msl. at the Sheboygan River to approximately 625 ft. msl. at the top of the riverbank on the southeast side of the property near the intersection of N. Water Street and Center Street. The majority of the site is flat-lying and has been cut and filled into the river bank. This includes the former area of MGP structures which occurs at an elevation of approximately 610 ft. msl. Relief within one mile of the site is approximately 95 feet, ranging from about 580 ft. msl at Lake Michigan to approximately 675 ft. msl. northwest of the site near the intersection of Wilgus and Erie Avenues. Surface drainage from the site is to the southwest, toward the Sheboygan River.

3.2 Surficial Geology

Naturally occurring soils in the vicinity of the site are classified as "Cut and Fill Land", Loamy, and consist of silt, sand and clay. These soils are underlain by low permeability glacial till and lucustrine sediments (Skinner and Borman, 1973 and USDA, SCS, 1978).

Unconsolidated deposits in the area are generally less than one hundred feet in thickness (Skinner and Borman, 1973; Figure 3-1). Based on available well logs for wells within approximately one-half mile of the site (Appendix E), unconsolidated deposits in the site area range in thickness from approximately 50 to 95 feet.

3.3 Regional Bedrock Geology

Underlying the unconsolidated deposits is Silurian-Age dolomitic bedrock (Skinner and Borman, 1973; Figure 3-2). Underlying the undifferentiated Silurian dolomites (approximately 460 feet thick) is the Ordovician-Age Maquoketa Shale (approximately 280

feet thick) which is underlain by approximately 400 feet of Ordovician-Age dolomites (Galena Dolomite, and Decorah and Platteville Formations) and sandstone (St. Peter Sandstone). Approximately 280 feet of Cambrian-Age sandstones (which may include the Tremealeau Formation, and Franconia, Galesville, Eau Claire, and Mount Simon Sandstones) underlie the Ordovician-Age units. Underlying the Cambrian units are undifferentiated Precambrian-Age crystalline rocks.

3.4 Regional Hydrogeology

The three major sources of ground water in the area are, in general order of depth below grade, the unconsolidated (" sand-and-gravel") deposits, the Niagara Dolomite, and the sandstone aquifers (Skinner and Borman, 1973). The shallow unconsolidated aquifer in the area is composed of deposits of saturated sand and gravel (some over 50 feet thick) and lake deposits containing beach sand. The shallow dolomite aquifer (or Niagra Aquifer) includes the Silurian units to the top of the Maquoketa Shale. The Maquoketa Shale is, in general, a low permeability unit or aquitard which separates the shallow aquifers from the underlying sandstone aquifer. Underlying the sandstone aquifer are relatively impermeable Precambrian-Age crystalline rocks (aquiclude). Combined, the shallow aquifers comprise the water-table (unconfined) system, while the deep sandstone units below the Maquoketa Shale make up the artesian (confined) system. Locally, the shallow aquifer system is confined by low permeability glacio-lacustrine silty clays.

Depth to groundwater at the site is less than 10 feet in the main gas plant area to approximately 30 feet in the extreme southeast portion of the site. Shallow ground-water flow is likely to the south-southwest towards the Sheboygan River. Regional ground-water flow is to the east, towards Lake Michigan.

The predominant source of water recharging the water-table aquifer in the area is precipitation which averages approximately 30 inches annually (National Oceanic and Atmospheric Administration, 1987). Infiltration is predominantly controlled by soil permeability, which ranges from approximately 0.05 to 0.2 inches/hour within the area

(Skinner and Borman, 1973). Additional ground-water entering the water-table system within the site area arrives via underflow of ground water which recharged the system at locations well to the west of the area. Underflow of recharge water from the west is the predominant source of ground water in the deep sandstone aquifer in the area.

Discharge of ground water from the water-table aquifer in the area is via seepage to Lake Michigan and surface drainage features, including the Sheboygan River. Within the area, some discharge from the sandstone aquifer to the water-table system is possible through the Maqoketa shale aquitard where upward vertical gradients exist from the sandstone system to the water-table aquifer. At the site, ground-water discharge likely occurs within the Sheboygan River.

3.5 Local Water Supply Wells

As part of the Phase I investigation, the occurrence of wells within one-half mile of the site was investigated. Based on Wisconsin Geological and Natural History Survey (WGNHS), The Wisconsin Department of Natural Resources (WDNR, 1985) and City of Sheboygan records, the City, is currently serviced by municipal water obtained from Lake Michigan. However, based on WGNHS records two city wells, CW-1 and CW-2, and one private well, PW-1, are known to have been completed within one-half mile of the site in the past (Figure 3-3). Available information on the status of these wells is as follows:

- CW-1; This well was installed in Fountain Park in 1877. The well is completed in St. Peters Sandstone between 1340 and 1475 feet. The status of this well is currently unknown.

- CW-2; This well was installed in 1969 at the Sheboygan County Court House Emergency Defense Center. The well is believed to be completed between 99 and 635 feet. The well was completed for emergency use only.

- PW-1; This well was completed in 1943 at Hayssen Manufacturing Co. The well is completed between 70 and 126 feet. The status of this well is unknown.

Borehole logs for the wells and three additional private wells in the area are contained in Appendix E.

4.0 SITE INVESTIGATION

4.1 Scope

Simon Hydro-Search's Phase I investigation included the performance of exploratory test pit excavations, surface and subsurface soil sampling and ground-water sampling on site. The soil samples were screened in the field for the potential presence of volatile organic compounds (VOCs) by the soil headspace method using an HNu Model PI-101 photoionization detector (PID). Selected soil and ground-water samples were submitted for laboratory analysis of total, amenable and weak acid dissociable cyanides, PAHs, phenol, and benzene, ethylbenzene, toluene, and xylenes (BETX). Selected samples were also submitted for analysis of arsenic, nickel, diesel range organics (DRO), and infrared spectroscopy (IR) analysis. Sampling and analytical methodology were performed in conformance with Simon Hydro-Search's (October 4, 1991) Work Plan. The site investigation activities are described in detail below.

4.2 Test Pit Excavation

A total of 15 test pits (TP-101 through TP-108, TP-108a and TP-109 through TP-114) were excavated at locations across the site to characterize near surface conditions and evaluate the potential presence of impacted soils proximate to suspected source areas. The excavation locations are shown on Figure 2-3 and did not exceed depths of approximately 10 feet. Since none of the former MGP structures remain, test pit locations were established in the field, after reviewing historical and existing conditions maps of the site by scaled measurements from remnants of existing structures. The rationale for each of the test pit locations was as follows:

- TP-110, TP-114, TP-111, TP-103, TP-101 and TP-105 were excavated to evaluate soil conditions on the periphery of the site. TP-105 and TP-111 were specifically located along the western border of the property to evaluate the

potential presence of impacted soil in response to reports of impacts encountered along the river by the City while constructing a pier foundation.

- TP-109 and TP-112 were excavated in the vicinity of the MGP facility buildings.

- TP-102, TP-104, TP-108 and TP-113 were located in the vicinity of the gas holders.

- TP-107 was excavated in the vicinity of the former tar tank location.

- TP-106 was excavated in the vicinity of the former purifier location.

Soil samples were collected at representative depths from the test pits (generally at 2 feet, 5 feet and at the base of excavation) for field observation, PID field screening, and possible submission for laboratory analysis. Based on field observations and PID readings, samples were submitted for laboratory analysis from locations; TP-101 (5 feet), TP-102 (5 feet), TP-103 (7 feet), TP-104 (6.5 feet), TP-106 (5 feet), TP-107 (2 feet), TP-108a (5 feet), TP-109 (1.5 feet and 5 feet), TP-110 (1.5 feet), TP-111 (5 feet), TP-112 (5 feet), TP-113 (5 feet) and TP-114 (5 feet) to characterize site soil conditions. The sampling depths were selected as being representative of soil conditions at the test pit locations. Each of the samples was submitted for analysis of total, amenable and weak acid dissociable cyanide, BETX, PAHs and phenol. In addition, TP-101 (5 feet), TP-102 (5 feet), TP-103 (7 feet), TP-108 (5 feet), TP-109 (5 feet) TP-110 (1.5 feet) and TP-113 (5 feet) were submitted for arsenic and nickel analysis. These seven samples were believed to be most impacted based on field observations. TP-103 (7 feet), TP-108 (5 feet) TP-109 (5 feet) and TP-113 (5 feet) were also submitted for DRO analysis due to field observations of fuel oil-like hydrocarbon odors at the locations. The following samples were submitted for IR analysis in order to evaluate organic constituents observed at the locations; TP-102 (10 feet, fuel oil-like odor), TP-106 (6 feet; creosote-like/fuel oil-like mixture odor) and TP-113 (10 feet; creosote-like odor).

During the test pit excavation, the initial 1 to 2 feet of surficial soils was segregated from deeper soils which have higher potential to be impacted. All soils were placed on visqueen. Following completion of the excavation, the deeper soils were returned to the excavation first and recompacted to sustain site traffic. The segregated surficial soils were returned to the excavation and recompacted. The test pit logs are contained in Appendix B. Field PID documentation is contained in Appendix C.

4.3 Surface Soil Sampling

Six surface soil grab samples (CS101B,C and D, CS-102B and D and CS-103C) were collected from the top 0 to 3 inches of soil. The sample locations are shown on Figure 2-3. Each of the samples were submitted for laboratory analysis of total, amenable and weak acid dissociable cyanide, BETX, PAHs and phenol.

4.4 Ground-Water Sampling

Grab ground-water samples were obtained from three test pit locations TP-101 (10 feet), TP-107 (5.5 feet) and TP-110 (5.5 feet) to characterize ground-water conditions across the site. Samples from TP-101 and TP-110 were observed to be clean based on field observations. The sample from TP-107 was visibly impacted. The samples were submitted for analysis of total, amenable and weak acid dissociable cyanide (field filtered), arsenic (field filtered), nickel (field filtered), BETX, PAHs, and phenol. TP-107 (5.5 feet) was also analyzed for DRO as a fuel oil-like odor was observed at the location.

5.0 RESULTS OF INVESTIGATION

The results of the soil and ground water samples collected at the WPSC site are discussed in the following sections. Analytical results are summarized on Tables 5-1 through 5-3. Test pit logs are contained in Appendix B. Field PID documentation for the test pit and surface soil samples are contained in Appendix C. Laboratory documentation is contained in Appendix D.

5.1 Test Pit Exploration and Sampling

5.1.1 Soil Description

Based on site test pit logs (Appendix B), the site is generally characterized by approximately 0.25 to 1.0 feet of silty sand and gravel or topsoil fill underlain by sand and gravel fill to a depth of up to 9 feet. The subsurface sand and gravel fill (1.0 to 9 feet) was found to contain coal, slag, and cinders in some of the test pit locations. Buried construction debris (bricks, concrete, etc.) was encountered at eight test pit locations (TP-105, TP-106, TP-107, TP-108A, TP-109, TP-110, TP-111 and TP-113). The fill is underlain by silty to clayey alluvial sand. Clayey silt to silty clay materials were encountered to a depth of 10 feet in the southern portion of the site (TP-114) and below a depth of 6 feet to the depth of excavation (7 feet) at TP-110. Ground-water is possibly perched within fill materials at several locations by clayey silt or buried structures as it was not observed at consistent levels throughout the site.

Former gas holder foundations were not conclusively located, although a curved foundation was encountered at test pit TP-108. Test pit TP-104 also contained a foundation as well as loose grained sand which may have been fill inside a foundation.

A strong moth ball-like hydrocarbon odor and elevated PID reading occurred in the vicinity of the former tar tanks at locations TP-108 (4 feet 27 ppm), TP-107 (5 feet 28 ppm), TP-113 (1.5 feet 28 ppm), and TP-109 (8 feet 36 ppm). Similar odors and PID readings were also

noted within the relief holder at the southern portion of the site in TP-113 (5 feet 110 ppm), and TP-113 (10 feet 103 ppm). The soil samples exhibited a black coloring (stained). Very slight diesel fuel-like odors and slightly elevated field PID readings (3.5 to 14 ppm) were observed in the northern portion of the site at locations; TP-106 (5 feet), TP-104 (6.5 feet), TP-109 (5 feet), TP-103 (7 and 10 feet) and TP-102 (5 and 10 feet). A former gas oil tank existed in this area of the site. In each case, with the exception of TP-103, elevated readings were associated with former on site structures. No other elevated field PID response or significant hydrocarbon odor were observed for any of the other test pit samples. (All responses were less than or equal to 6.0 ppm benzene equivalents.)

5.1.2 Laboratory Analytical Results

A summary of analytical results for site test pit samples is shown on Table 5-1. Total PAHs were detected in site test pit samples at concentrations ranging from below detection limits to approximately 150 ppm. The current State draft guideline for total PAH concentrations in soils is 100 ppm although the guideline may change based on future promulgation of chapter NR 700, Wisconsin Administrative Code. Soil samples exhibiting total PAH concentrations exceeding the 100 ppm guideline generally occur in the central portion of the site coincident with field observations of impacts; TP-107 (2 feet), TP-109 (5 feet), TP-110 (1.5 feet). The sample from TP-101 (5 feet) at the northern end of the property exhibited a total PAH concentration of approximately 100 ppm. However, no field evidence of impacts was observed at the location. Phenol was detected in two samples TP-101 (5 feet:2.7 ppm) and TP-106 (5 feet; 13.2 ppm).

Low concentrations of BETX constituents ranging from below detection limits to approximately 2 ppm were detected in all samples except TP-109 (5 feet) which exhibited a concentration of 17 ppm. Elevated levels of DRO were detected in four samples: TP-103 (7 feet; 3000 ppm), TP-108 (5 feet;110 pm), TP-109 (5 feet; 380 ppm) and TP-113 (5 feet; 390 ppm). These samples were selected for DRO analysis based on field observations of fuel oil-like and or creosote-like hydrocarbon odors in the field.

Based on IR analysis of three soil samples; TP-102 (10 feet, fuel oil-like odor), TP-106 (6 feet; creosote-like/fuel oil-like mixture odor) and TP-113 (10 feet; creosote-like odor), all of the samples contain PAHs typical of "heavy" coal tar and may contain devolatilized carburetted water gas tar. Petroleum oil, possibly devolitalized fuel oil was also observed in the samples.

The sample from TP-102 contained heavy aromatic petroleum oil, possibly devolitalized fuel oil and minor PAHs. This is consistent with field observations of a fuel oil-like odor. The samples from TP-106 and TP-113 contained mostly PAHs and minor petroleum oil. This is also consistent with field observations at the locations. The samples from TP-102 and TP-106 were saturated (collected at the water table) and represent ground water conditions at the locations.

Although a gas/oil tank was present at the former MGP (Figure 2-2), the source of the petroleum oil (possible devolatilized fuel oil) is currently unknown. Sources associated with non-MGP activities on and/or off-site (upgradient) may exist.

Total cyanide concentrations in test pit soil samples ranged from below detection limits to 9.5 ppm, well below the draft guideline concentration of 100 ppm. Similarly low concentrations of amenable and weak acid dissociable cyanide were detected ranging from below detection limits to 2.5 ppm and below detection limits to 1.9 ppm, respectively.

Arsenic concentrations ranged from 0.5 ppm to 3.4 ppm, which is within the natural range for soils in Wisconsin (2 to 5 ppm; WDNR, 1980). Nickel concentrations ranged from 7 to 14 ppm which is also within the natural range for soils in Wisconsin (10 to 100 ppm).

5.2 Surface Soil Sampling

5.2.1 Soil Description

Based on site test pit logs, the surface sediments (0 to 0.25 feet;) across the site consist of well graded sand and gravel or topsoil. The samples were field analyzed with a PID and did not exhibit elevated (> 10 ppm benzene equivalents) responses. All readings were less than 2 ppm benzene equivalents (Appendix C). No hydrocarbon odors were noted in the surface soil samples.

5.2.2 Laboratory Analytical Results

A summary of analytical results for surface soil samples is shown on Table 5-2. Low levels of total PAHs were detected in samples CS-101 B (0.112 ppm) and CS-103C (0.065 ppm) well below the current state draft guideline of 100 ppm. No phenol, BETX or total, amenable and weak acid dissociable cyanide compounds were detected in the samples.

5.3 Ground-Water Analytical Results

A summary of analytical results for site ground water samples is shown on Table 5-3. Naphthalene was detected in TP-107 (5.5 feet) at 0.780 ppm, above the NR 140 Enforcement Standard (ES) of 0.040 ppm. Low levels of PAHs were also detected in TP-101 (10 feet) (anthracene 0.0006 ppm, fluoranthene; 0.0007 ppm and phenanthrene 0.002 ppm). There currently are no State standards for these compounds. Phenol was detected at 0.026 ppm at TP-107 (5 feet) at 0.026 ppm, below the NR 140 preventive action limit of 1.2 ppm.

Benzene was detected above the ES (0.005 ppm) in TP-107 (5 feet, 1.7 ppm) and above the PAL (0.000067 ppm) in TP-110 (5.5 feet). The PAL for ethylbenzene (0.272 ppm), toluene (0.0686 ppm) and xylenes (0.124 ppm) was exceeded for sample TP-107 (5.5 feet) at 0.380, 0.170 and 0.280 ppm, respectively. DRO was also detected in the sample at 5 ppm.

Total cyanide (field filtered) was detected above the ES (0.200 ppm) in TP-101 (10 feet; 0.37 ppm) and TP-107 (5.5 feet; 0.30 ppm) and above the PAL (0.04 ppm) in TP-110 (5.5 feet; 0.23 ppm). Amenable cyanide (field filtered) concentrations ranged from 0.028 to 0.18 ppm. Weak acid dissociable cyanide (field filtered) concentrations ranged from 0.085 to 0.15 ppm. There currently are no standards for these compounds.

Arsenic (field filtered) was detected at or just above the PAL (0.005 ppm) in the samples; TP-101 (10 feet; 0.006 ppm), TP-107 (5.5 feet; 0.005 ppm) and TP-110 (5.5 feet; 0.019 ppm). Nickel (field filtered) was not detected in the samples.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this investigation, the following conclusions and recommendations are made:

Summary and Conclusions

- Organics impacts to site soils are generally confined to subsurface soils in the central portion of the property in the area of the former water gas and gas meter shop, purifier and tar storage tanks, which were likely sources. A presumably localized area of impacts related to fill materials at the location of a relief holder foundation occurs in the southern portion of the site. A conceptual model of site soil organics impacts is shown on Figure 6-1.

- No significant concentrations of cyanide compounds, arsenic or nickel were detected in site test pit and surface soil samples.

- Based on grab ground-water sample results, organics ground-water impacts occur in the central portion of the site in the area of the former water gas and gas meter shop, purifier and tar storage tanks. Based on field observations and infrared spectroscopy analysis of a saturated soil sample from the gas holder and gas/oil tank area in the northern portion of the site, organics ground-water impacts likely occur in this area as well.

- Total (field filtered) cyanide concentrations above the State Enforcement Standard or Preventive Action Limit occurred for all site ground-water samples. The source of the elevated concentrations is unknown, as no significant concentrations of cyanide compounds was detected in site soil samples and no purifier wastes were observed during the investigation. However, the area near the former purifier was not investigated by Simon

Hydro-Search as it is the current location of the City boat dock. Arsenic (field filtered) was detected at or just above the State Preventive Action Limit.

Recommendations

- Site hydrogeologic conditions including shallow ground-water flow direction and the magnitude and extent of ground-water organics and total cyanide impacts should be further evaluated via monitor well installation and ground-water sampling.

- The extent of site soil impacts in the southern portion of the property near the relief holder area as well as the possible occurance of purifier wastes in the boat dock/former purifier area should be further evaluated.

- The potential that observed site impacts related to petroleum oil (possibly devolatilized fuel oil) are in part due to non-MGP sources on and/or off site should be further evaluated.

7.0 REFERENCES

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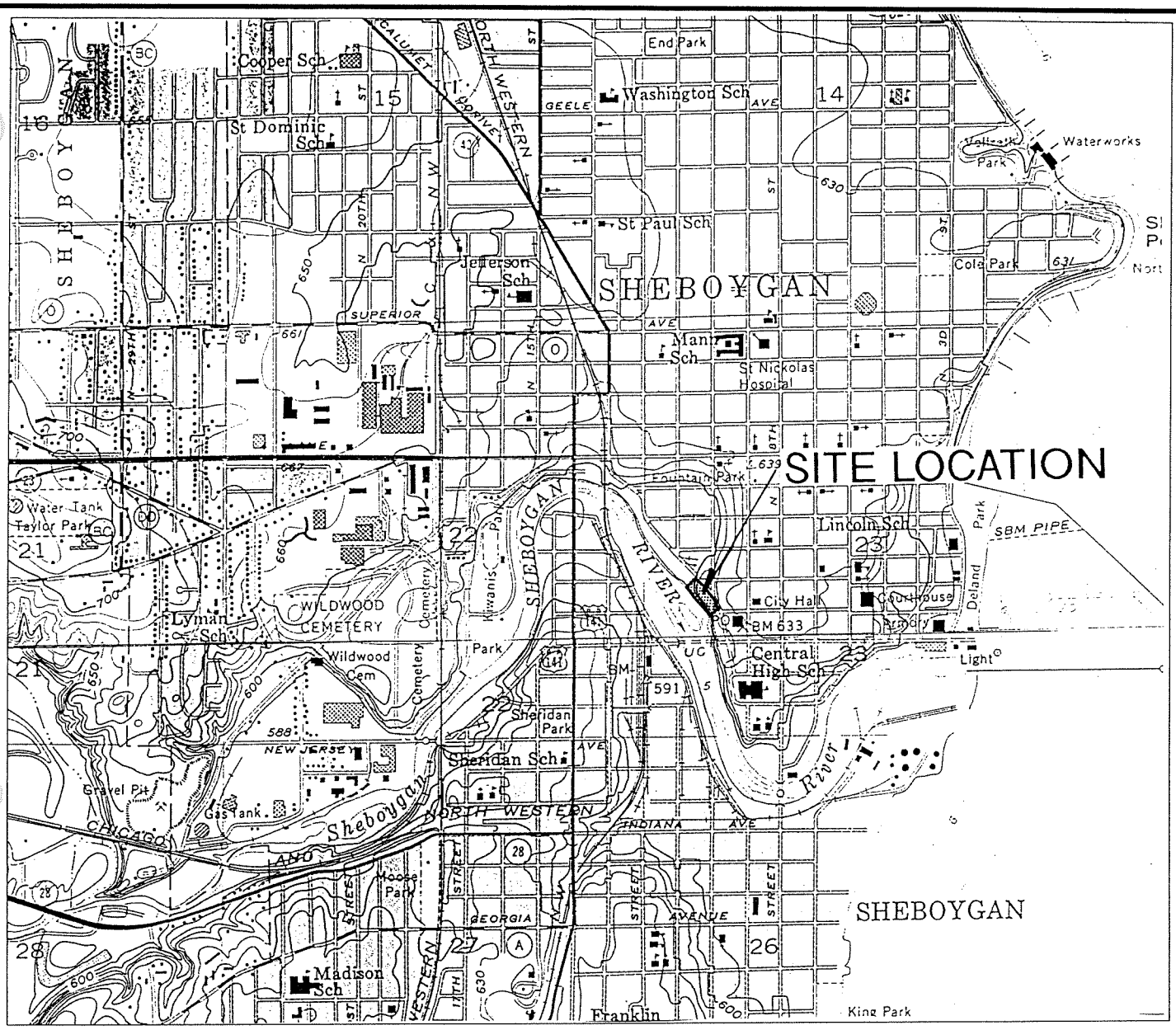
FIGURES



Base map from U.S.G.S. 7.5' Sheyboygan North, WI and Sheboygan South, WI topographic quadrangle maps, photorevised 1973.

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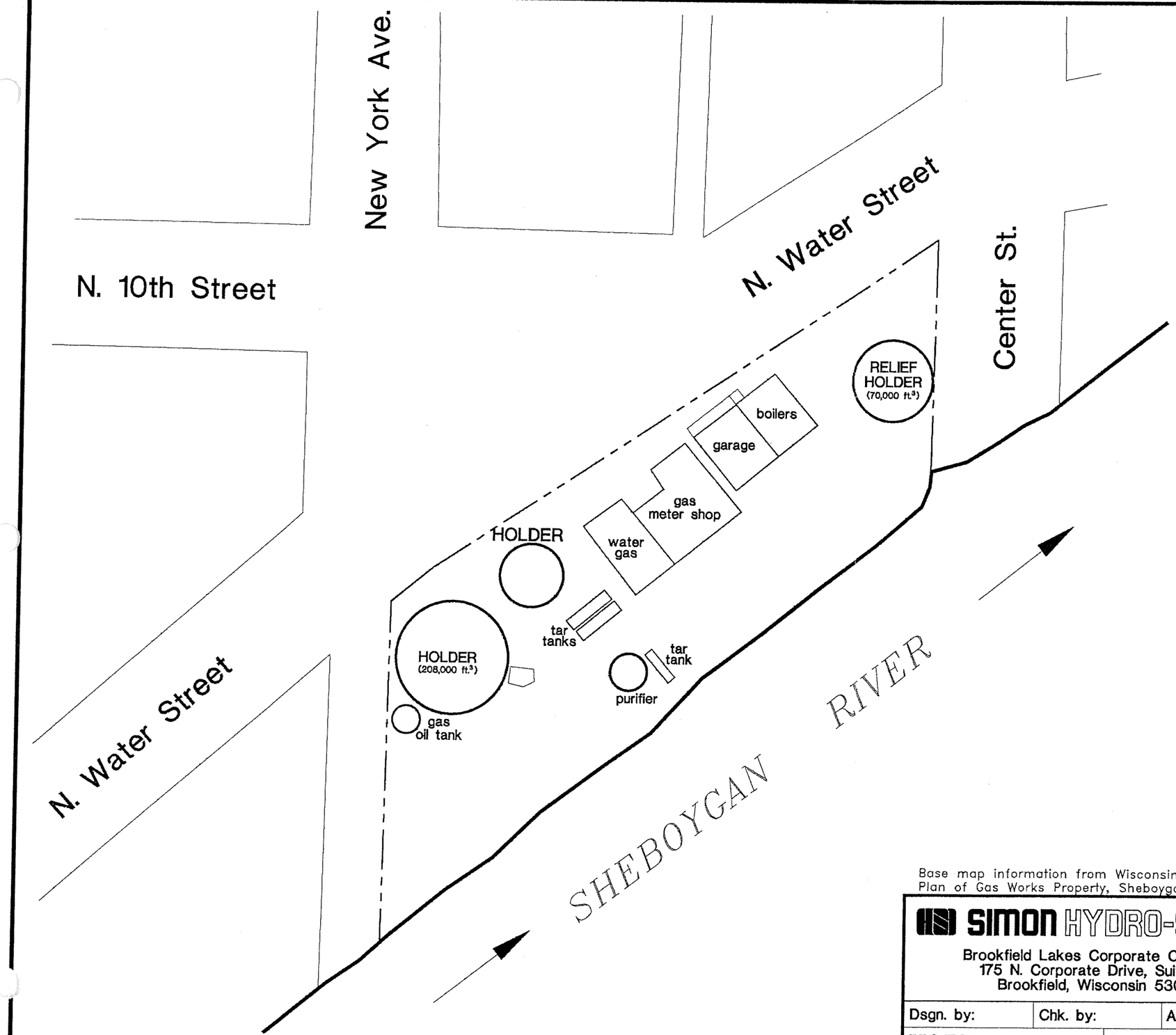
WISCONSIN PUBLIC SERVICE CORPORATION
SHEBOYGAN, WISCONSIN

SITE LOCATION and LOCAL TOPOGRAPHY

Dsgn. by:	Chk. by:	Apprv. by:
PROJECT: 453114843	DATE: 07/16/91	
DRAWING NO.: 1484-4	FIGURE: 2-1	



EXPLANATION

— — — — WISCONSIN PUBLIC SERVICE CORPORATION GAS WORKS PROPERTY BOUNDARY

N

SCALE

0 200

FEET

Base map information from Wisconsin Public Service Corporation, Sheboygan Division, Plan of Gas Works Property, Sheboygan, WI, July 31, 1923, revised 12/04/24 and 10/06/41.

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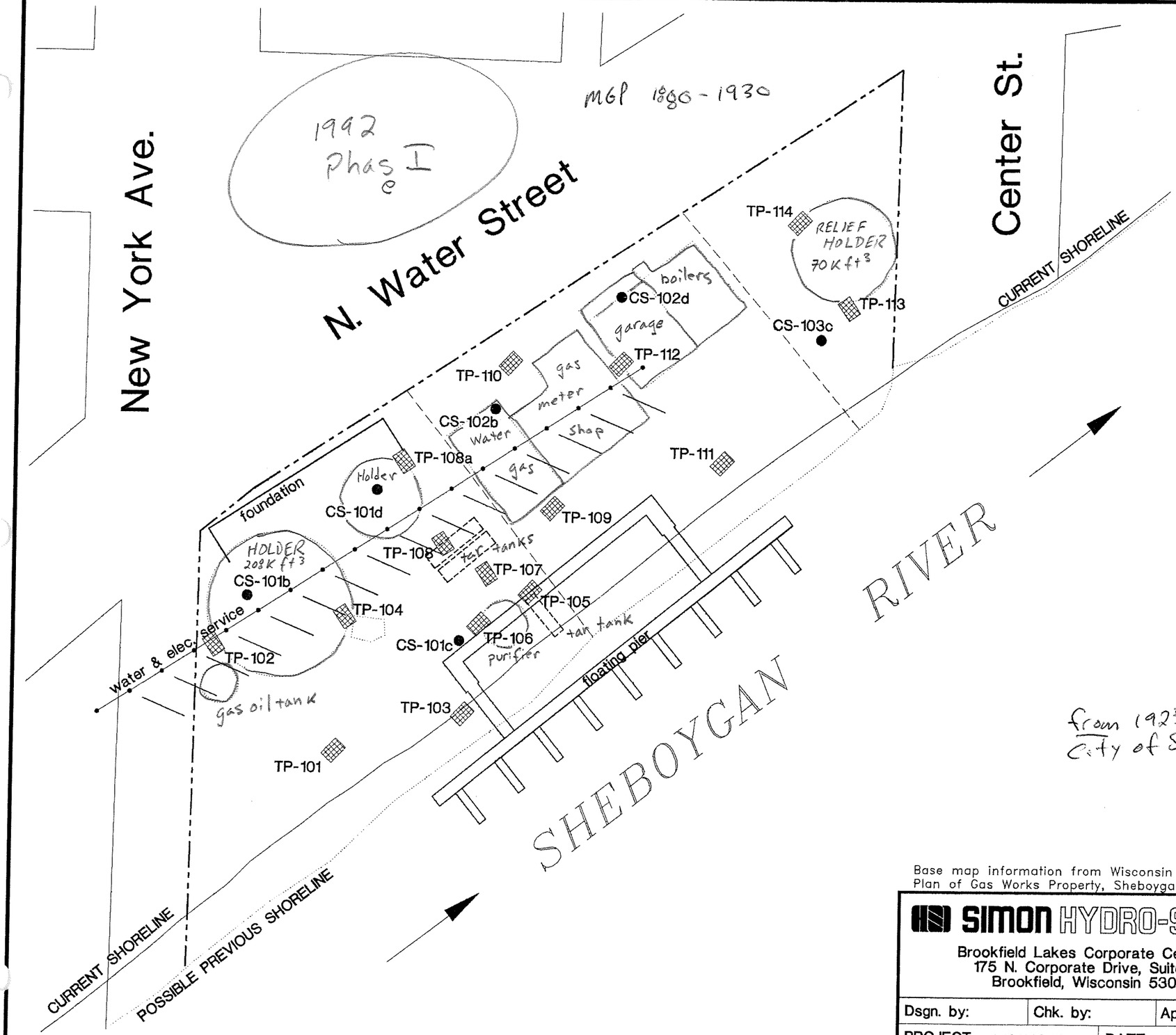
SHEBOYGAN, WISCONSIN

PREVIOUSLY EXISTING STRUCTURES

DRAWING NO.: 1484-1 FIGURE: 2-2



EXPLANATION

- WISCONSIN PUBLIC SERVICE CORPORATION GAS WORKS PROPERTY BOUNDARY
- PREVIOUSLY EXISTING STRUCTURE
- CS-103b ● COMPOSITE SURFICIAL SOIL SAMPLE LOCATION AND DESIGNATION
- TP-111 TEST PIT LOCATION AND DESIGNATION

N

from 1923 WPS Survey map + City of Sheboygan survey maps.

SCALE

0 150

FEET

Base map information from Wisconsin Public Service Corporation, Sheboygan Division, Plan of Gas Works Property, Sheboygan, WI, July 31, 1923, revised 12/04/24 and 10/06/41.

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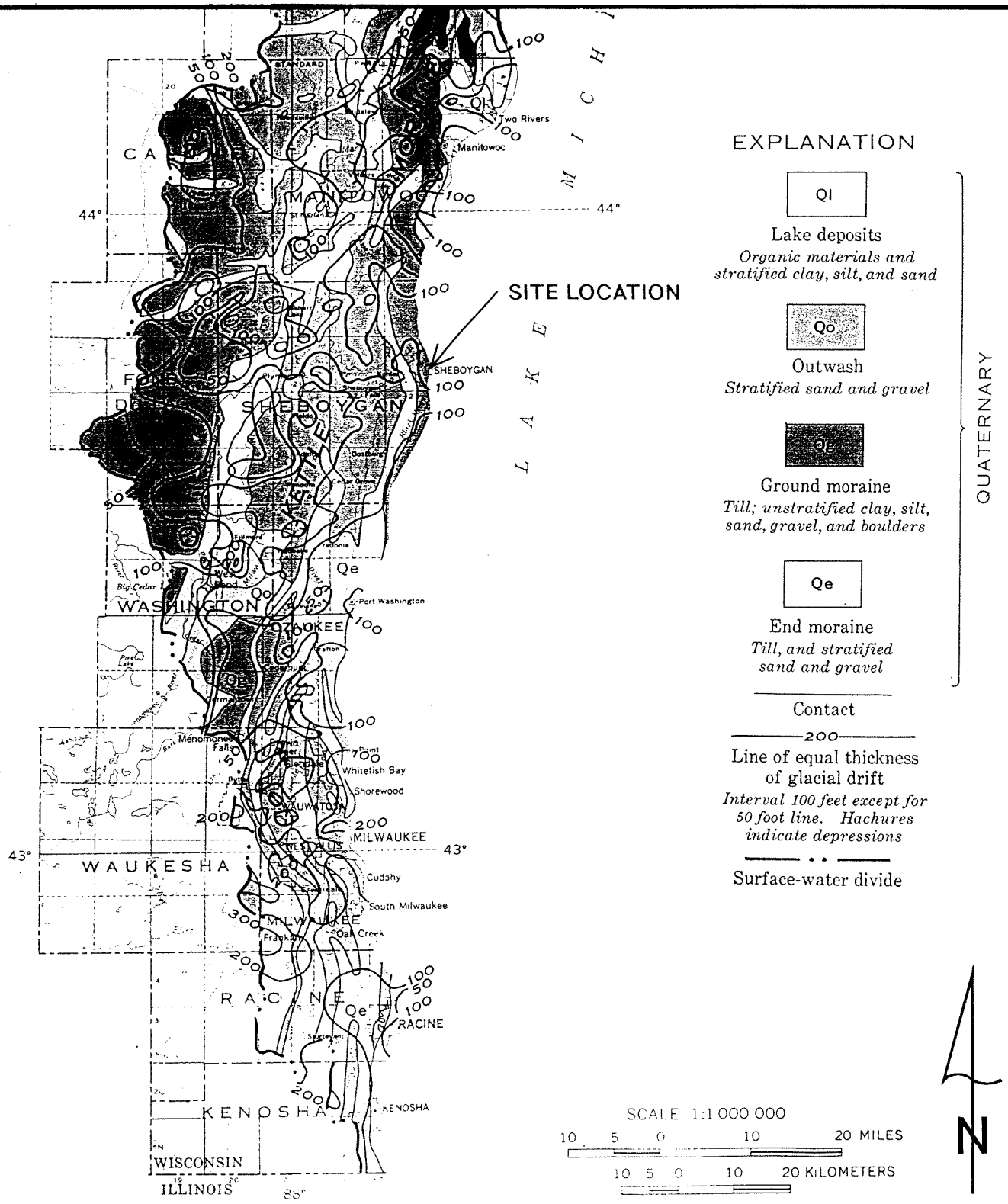
WISCONSIN PUBLIC SERVICE CORPORATION
SHEBOYGAN, WISCONSIN

EXISTING SITE LAYOUT AND SAMPLE LOCATIONS

DRAWING NO.: 1484-2a | FIGURE: 2-3



Source: Skinner & Borman, 1973.

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WISCONSIN PUBLIC SERVICE CORPORATION
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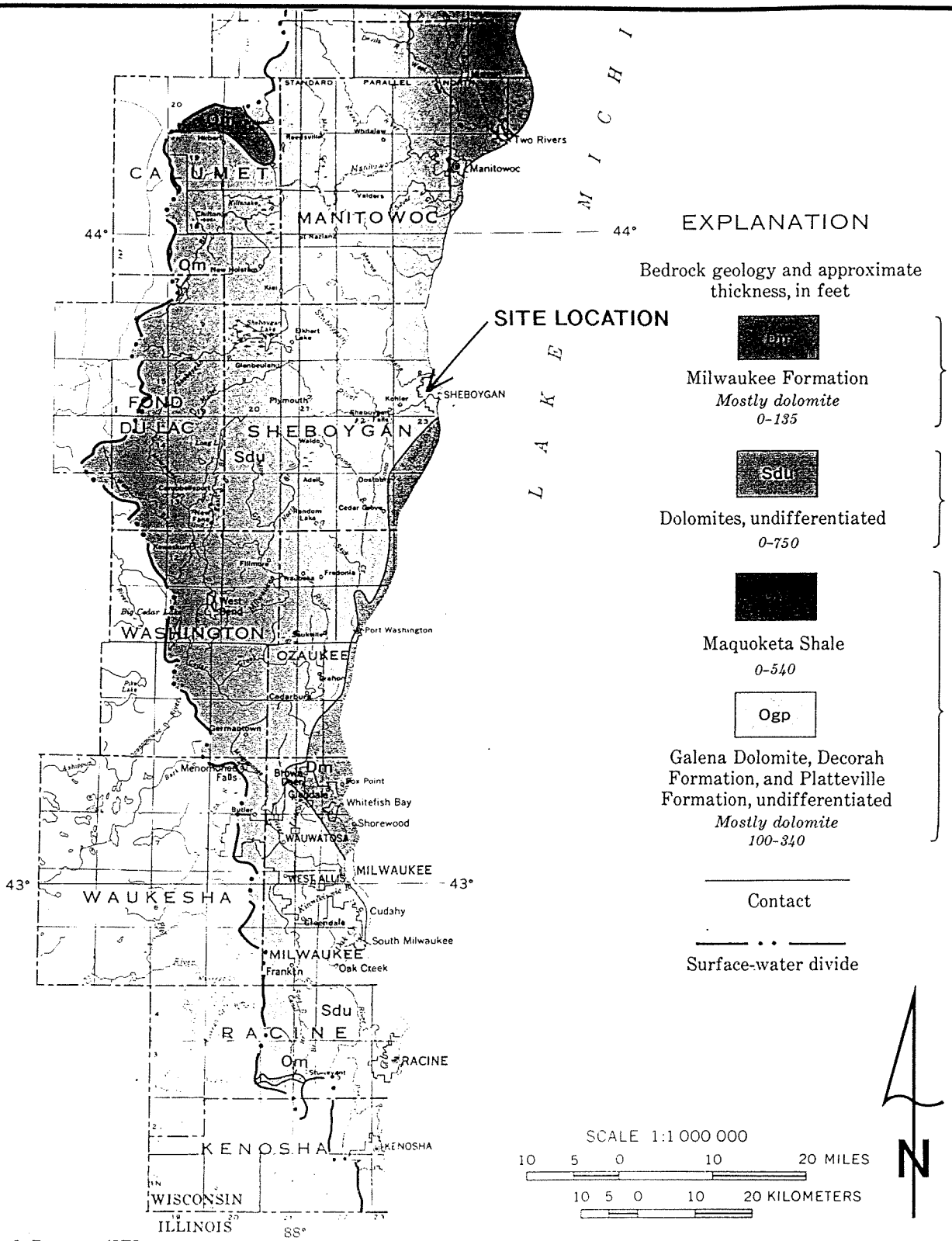
REGIONAL SURFICIAL GEOLOGY

Dsgn. by:	Chk. by:	Apprv. by:
PROJECT: 453114843	DATE: 05/19/92	
DRAWING NO.: 1484-3	FIGURE: 3-1	



Source: Skinner & Borman, 1973.

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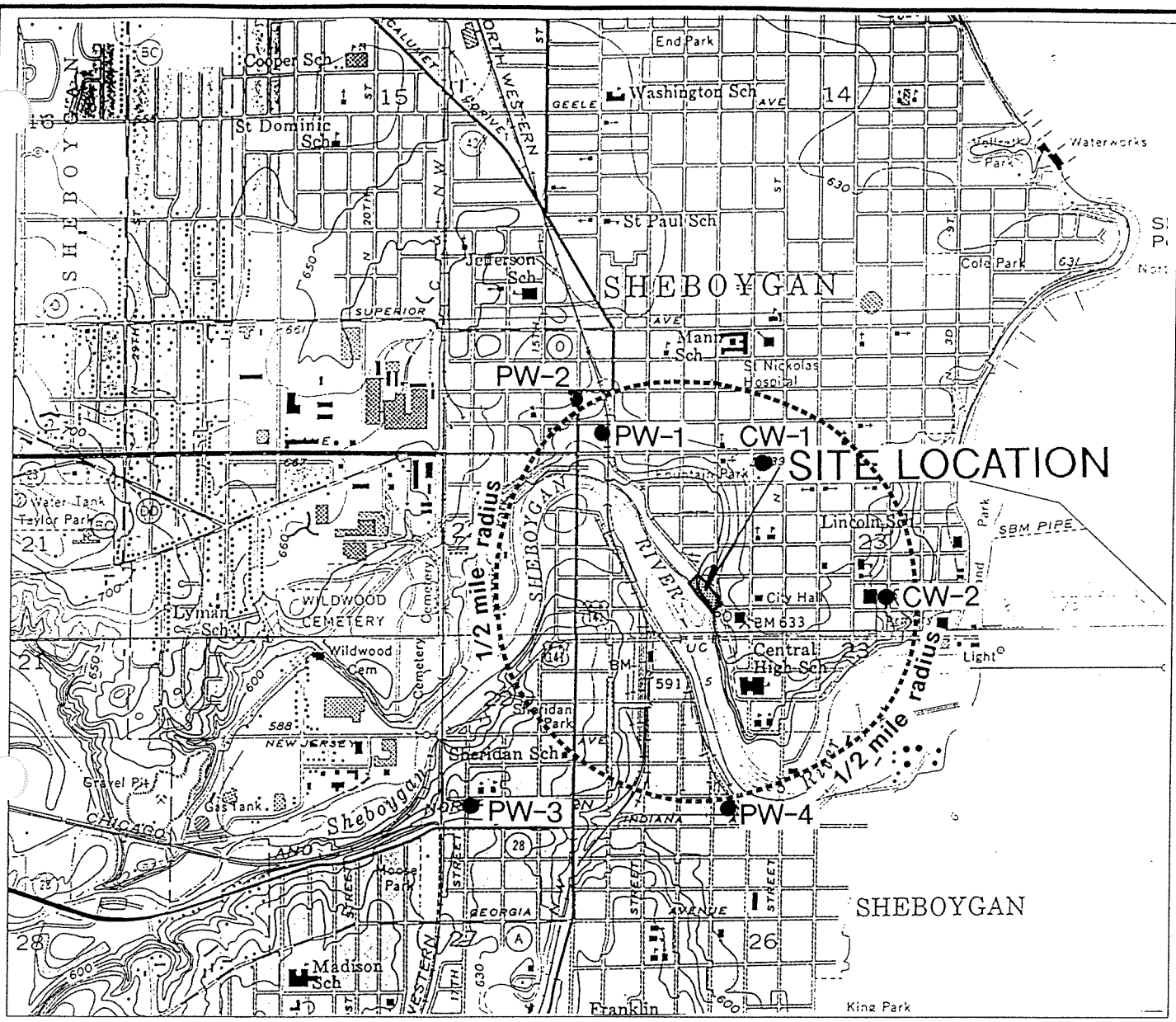
REGIONAL BEDROCK GEOLOGY

Dsgn. by:	Chk. by:	Apprv. by:
PROJECT: 453114843	DATE: 05/19/92	DRAWING NO.: 1484-3

FIGURE: 3-2



Base map from U.S.G.S. 7.5' Sheyboygan North, WI and Sheboygan South, WI topographic quadrangle maps, photorevised 1973.

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WISCONSIN PUBLIC SERVICE CORPORATION
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LOCAL WATER SUPPLY WELLS

Dsgn. by:	Chk. by:	Apprv. by:
PROJECT: 453114843	DATE: 05/20/92	DRAWING NO.: 1484-4

FIGURE: 3-3

New York Ave.

N. Water Street

Center St.

CURRENT SHORELINE

TP-114

CS-102d

TP-113

CS-103c

TP-110

TP-112

CS-102b

TP-108a

TP-111

foundation

CS-101d

TP-109

TP-108

TP-107

CS-101b

TP-105

TP-104

water & elec. service

CS-101c

TP-106

floating pier

TP-102

TP-103

TP-101

RIVER

SHEBOYGAN

CURRENT SHORELINE

POSSIBLE PREVIOUS SHORELINE

EXPLANATION

WISCONSIN PUBLIC SERVICE CORPORATION GAS WORKS PROPERTY BOUNDARY

PREVIOUSLY EXISTING STRUCTURE

CS-103b ● COMPOSITE SURFICIAL SOIL SAMPLE LOCATION AND DESIGNATION

TP-111 TEST PIT LOCATION AND DESIGNATION

CONCEPTUAL EXTENT OF SITE ORGANICS SOIL IMPACTS

N

SCALE

0 150

FEET

Base map information from Wisconsin Public Service Corporation, Sheboygan Division, Plan of Gas Works Property, Sheboygan, WI, July 31, 1923, revised 12/04/24 and 10/06/41.

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PROJECT: 453114843	DATE: 05/19/92	

WISCONSIN PUBLIC SERVICE CORPORATION
SHEBOYGAN, WISCONSIN

CONCEPTUALIZATION OF SITE ORGANICS SOIL IMPACTS

DRAWING NO.: 1484-2a FIGURE: 6-1

TABLES

Table 5-1 Summary of Analytical Results, Site Test Pit Soil Samples, WPSC Sheboygan MGP Site

PARAMETER	PHASE I TP101 5' 3/26/92	PHASE I TP102 5' 3/26/92	PHASE I TP103 7' 3/26/92	PHASE I TP104 6.5' 3/26/92	PHASE I TP106 5' 3/26/92	PHASE I TP107 2' 3/26/92	STATE GUIDELINE**
Cyanide, Amenable	<0.80*	<0.19*	<8.5*	<2.5	<0.83*	<2.5*	
Cyanide, Dissociable	0.65	<0.25	1.9	<2.5	0.64	<2.5	
Cyanide, Total	0.80	0.19	8.5	<2.5	0.83	<2.5	100
Solids, Total (%)	69.	85.	81.	86.	86.	85.	
Arsenic	3.4	0.9	0.9	NA	NA	NA	
Nickel	14.	7.	10.	NA	NA	NA	
Volatile Organic Compounds (VOCs)							
Benzene	<0.1	<0.1	<0.1	<0.1	0.3	0.9	
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	
Toluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Xylenes, Total	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	
Total BETX***	0.0	0.0	0.0	0.0	0.5	1.1	
Diesel Range Organics - non-aqueous	NA	NA	3,000.	NA	NA	NA	10
Polynuclear Aromatic Hydrocarbons (PAHs)							
Acenaphthene	<2.700	<0.660	1.100	<0.660	<13.200	<6.600	
Acenaphthylene	<2.700	<0.660	<0.660	<0.660	<13.200	<6.600	
Anthracene	<2.700	<0.660	1.600	<0.660	<13.200	<6.600	
Benzo	11.000	<0.660	3.800	<0.660	<13.200	13.000	
Benzo(a)anthracene	11.000	<0.660	3.500	<0.660	<13.200	15.000	
Benzo(a)pyrene	8.800	<0.660	3.200	<0.660	<13.200	13.000	
Benzo(b)fluoranthene	10.000	<0.660	3.400	<0.660	<13.200	16.000	
Benzo(k)fluoranthene	7.000	<0.660	2.100	<0.660	<13.200	14.000	
Chrysene	9.900	<0.660	3.400	<0.660	<13.200	13.000	
Dibenzo(a,h)anthracene	3.100	<0.660	0.980	<0.660	<13.200	<6.600	
Fluoranthene	15.000	<0.660	6.900	<0.660	18.000	18.000	
Fluorene	<2.700	<0.660	1.200	<0.660	<13.200	<6.600	
Ideno(1,2,3)pyrene	7.000	<0.660	2.100	<0.660	<13.200	13.000	
Naphthalene	<2.700	<0.660	<0.660	4.300	<13.200	<6.600	
Phenanthrene	4.400	<0.660	5.400	<0.660	18.000	7.900	
Pyrene	14.000	<0.660	6.200	<0.660	20.000	6.600	
Total PAHs***	101.200	0.000	44.880	4.300	56.000	122.900	100
Phenol	2.700	<0.660	<0.660	<0.660	13.200	<6.600	

NOTE: All values in parts per million (ppm; mg/kg) except percent total solids (%)
< = Denotes laboratory detection limit (see laboratory documentation, Appendix D)
NA = Not analyzed
* = Unable to determine due to interferences
** = From State of Wisconsin March 2, 1989 Draft Memorandum; Investigations and Cleanup at Former Coal Gasification Gas Plant - Guidance Field Ref.: 4440
*** = Sum of detections
Analyses by NET Environmental Testing, Inc., Watertown, Wisconsin, WDNR Certification #128053530

Table 5-1 Summary of Analytical Results, Site Test Pit Soil Samples, WPSC Sheboygan MGP Site (Cont'd.)

PARAMETER	PHASE I TP108 5' 3/26/92	PHASE I TP109 5' 3/25/92	PHASE I TP110 1.5' 3/26/92	PHASE I TP111 5' 3/25/92	PHASE I TP112 5' 3/25/92	PHASE I TP113 5' 3/25/92	PHASE I TP114 5' 3/25/92	STATE GUIDELINE**
Cyanide, Amenable	<2.5	<3.0*	0.17	1.03	<2.5	2.5	<2.5	
Cyanide, Dissociable	<0.25	1.1	0.92	<2.5	<0.25	<0.25	<2.5	
Cyanide, Total	<2.5	3.0	9.5	1.8	<2.5	<2.5	<2.5	100
Solids, Total (%)	86.	90.	75.	81.	85.	85.	83.	
Arsenic	0.5	0.6	2.8	NA	NA	1.1	NA	2-5[1]
Nickel	10.	11.	10.	NA	NA	10.	NA	10-100[1]
Volatile Organic Compounds (VOCs)								
Benzene	<0.1	5.5	<0.1	<0.1	<0.1	<0.1	<0.1	
Ethylbenzene	<0.1	2.2	<0.1	<0.1	<0.1	1.6	<0.1	
Toluene	<0.1	4.6	0.1	<0.1	<0.1	<0.1	<0.1	
Xylenes, Total	<0.1	5.1	0.3	<0.1	<0.1	0.5	<0.1	
Total BETX***	0.0	17.4	0.4	0.0	0.0	2.1	0.0	
Diesel Range Organics - non-aqueous	110.	380.	NA	NA	NA	390.	NA	10
Polynuclear Aromatic Hydrocarbons (PAHs)								
Acenaphthene	<0.660	<6.600	<3.300	<0.660	<0.660	3.100	<0.660	
Acenaphthylene	<0.660	<6.600	<3.300	<0.660	<0.660	<1.320	<0.660	
Anthracene	<0.660	<6.600	<3.300	<0.660	<0.660	2.700	<0.660	
Benzo	<0.660	13.000	13.000	<0.660	<0.660	1.900	<0.660	
Benzo(a)anthracene	<0.660	13.000	16.000	<0.660	<0.660	1.500	<0.660	
Benzo(a)pyrene	<0.660	11.000	7.300	<0.660	<0.660	<1.320	<0.660	
Benzo(b)fluoranthene	<0.660	15.000	23.000	0.880	<0.660	<1.320	<0.660	
Benzo(k)fluoranthene	<0.660	10.000	12.000	<0.660	<0.660	<1.320	<0.660	
Chrysene	<0.660	13.000	14.000	0.700	<0.660	<1.320	<0.660	
Dibenzo(a,h)anthracene	<0.660	<6.600	4.600	<0.660	<0.660	<1.320	<0.660	
Fluoranthene	0.860	23.000	17.000	0.900	<0.660	4.300	<0.660	
Fluorene	<0.660	<6.600	<3.300	<0.660	<0.660	2.600	<0.660	
Ideno(1,2,3)pyrene	<0.660	9.200	11.000	<0.660	<0.660	<1.320	<0.660	
Naphthalene	0.680	<6.600	8.000	<0.660	<0.660	8.500	<0.660	
Phenanthrene	2.000	14.000	5.400	<0.660	<0.660	10.000	<0.660	
Pyrene	1.000	24.000	20.000	0.940	<0.660	5.300	<0.660	
Total PAHs***	4.540	145.200	151.300	3.420	<0.660	39.90	<0.660	100
Phenol	<0.660	<6.600	<3.300	<0.660	<0.660	<1.320	<0.660	

NOTE: All values in parts per million (ppm; mg/kg) except percent total solids (%)
< = Denotes laboratory detection limit (see laboratory documentation, Appendix D)
NA = Not analyzed
* = Unable to determine due to interferences
** = From State of Wisconsin March 2, 1989 Draft Memorandum; Investigations and Cleanup at Former Coal Gasification Gas Plant - Guidance Field Ref.: 4440
*** = Sum of detections
Analyses by NET Environmental Testing, Inc., Watertown, Wisconsin, WDNR Certification #128053530
[1] = Natural Range of Metals Concentrations in Wisconsin Soils, from June 20, 1980 memo from Bob Schaefer to State of Wisconsin Water Quality and Water Water Unit Supervisors; File Ref. 3420.

Table 5-2 Summary of Detected Constituents in Site Surface Soil Samples, WPSC Sheboygan MGP Site

PARAMETER	PHASE I CS101 B 3/26/92	PHASE I CS101 C 3/26/92	PHASE I CS101 D 3/25/92	PHASE I CS102 B 3/25/92	PHASE I CS102 D 3/25/92	PHASE I CS103 C 3/25/92	STATE GUIDELINE*
Cyanide, Amenable	<2.5	<0.25	<2.5	<2.5	<2.5	<2.5	
Cyanide, Dissociable	<2.5	<0.25	<2.5	<2.5	<2.5	<2.5	
Cyanide, Total (%)	<2.5	<0.25	<2.5	<2.5	<2.5	<2.5	100
Solids, Total	94.	96.	94.	93.	94.	94.	
Volatile Organic Compounds (VOCs)							
Benzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Toluene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Xylenes, Total	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total BETX**	0.0	0.0	0.0	0.0	0.0	0.0	
Polynuclear Aromatic Hydrocarbons (PAHs)							
Acenaphthene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Acenaphthylene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Anthracene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Benzo	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
Benzo(a)anthracene	0.031	<0.003	<0.003	<0.003	<0.003	0.013	
Benzo(a)pyrene	0.024	<0.0008	<0.0008	<0.0008	<0.0008	0.019	
Benzo(b)fluoranthene	0.057	<0.004	<0.004	<0.004	<0.004	0.033	
Benzo(k)fluoranthene	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
Chrysene	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	
Dibenzo(a,h)anthracene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Fluoranthene	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	
Fluorene	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	
Ideno(1,2,3)pyrene	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	
Naphthalene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Phenanthrene	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	
Pyrene	<0.032	<0.032	<0.032	<0.032	<0.032	<0.032	
Total PAHs**	0.112	0.0	0.0	0.0	0.0	0.065	100
Phenol	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	

NOTE: All values in parts per million (ppm; mg/kg) except percent total solids %
< = Denotes laboratory detection limit (see laboratory documentation, Appendix D)
* = From State of Wisconsin March 2, 1989 Draft Memorandum; Investigations and Cleanup at Former Coal Gasification Gas Plant - Guidance Field Ref.: 4420
** = Sum of detections
Analyses by NET Environmental Testing, Inc., Watertown, Wisconsin, WDNR Certification #128053530

TABLE 5-3. SUMMARY OF DETECTED CONSTITUENTS IN WATER SAMPLES, WPSC SHEBOYGAN MGP SITE

PARAMETER	Ground-Water Samples			QA/QC Samples			STATE NR140 ENFORCEMENT STANDARD*	STATE NR140 PAL*
	PHASE I TP101 WATER 10' 3/26/92	PHASE I TP107 W5.5' 3/26/92	PHASE I TP110 WATER 5.5' 3/25/92	PHASE I FLD BLANK[1] TP111 WATER 3/26/92	PHASE I FLD BLANK[2] PCS101 W10' 3/26/92	PHASE I TRIP BLANK 3/23/92		
Cyanide, Amenable[3]	0.18	0.048	0.028	<0.005	<0.005	NA		
Cyanide, Dissociable[3]	0.085	0.057	0.15	<0.005	<0.005	NA		
Cyanide, Total[3]	0.37	0.30	0.23	<0.005	<0.005	NA	0.200	0.040
Arsenic[3]	0.006	0.005	0.019	<0.005	<0.005	NA	0.050	0.005
Nickel[3]	<0.1	<0.1	<0.1	<0.1	<0.1	NA		
Volatile Organic Compounds (VOCs)								
Benzene	<0.001	1.700	0.0026	NA	<0.001	<0.001	0.005	0.000067
Ethylbenzene	<0.001	0.380	0.0014	NA	<0.001	<0.001	1.360	0.272
Toluene	<0.001	0.170	0.0026	NA	<0.001	<0.001	0.343	0.0686
Xylenes, Total	<0.001	0.280	0.0029	NA	0.0018	<0.001	0.620	0.124
Total BETX**	0.0	2.53	0.0095	NA	0.0018	0.0		
Diesel Range Organics - Aqueous	NA	5.	NA	NA	NA	NA		
Polynuclear Aromatic Hydrocarbons (PAHs)								
Acenaphthene	<0.0004	<0.200	<0.004	NA	<0.0004	NA		
Acenaphthylene	<0.0005	<0.250	<0.005	NA	<0.0005	NA		
Anthracene	0.0006	<0.020	<0.002	NA	<0.0002	NA		
Benzo(a)anthracene	<0.0003	<0.030	<0.003	NA	<0.0003	NA		
Benzo(a)pyrene	<0.00008	<0.008	<0.0008	NA	<0.00008	NA	0.000003	0.0000003
Benzo(b)fluoranthene	<0.00002	<0.002	<0.0002	NA	<0.00002	NA		
Benzo(k)fluoranthene	<0.0001	<0.010	<0.001	NA	<0.0001	NA		
Benzo(g,h,i)perylene	<0.0003	<0.030	<0.003	NA	<0.0003	NA		
Chrysene	<0.0004	<0.040	<0.004	NA	<0.0004	NA		
Dibenzo(a,h)anthracene	<0.00005	<0.005	<0.0005	NA	<0.00005	NA		
Fluoranthene	0.0007	<0.030	<0.003	NA	<0.0003	NA		
Fluorene	<0.0006	<0.300	<0.006	NA	<0.0006	NA		
Ideno(1,2,3)pyrene	<0.0002	<0.020	<0.002	NA	<0.0002	NA		
Naphthalene	0.0003	0.780	<0.002	NA	0.0004	NA	0.040	0.008
Phenanthrene	0.002	<0.040	<0.004	NA	<0.0004	NA		
Pyrene	<0.0008	<0.080	<0.008	NA	<0.0008	NA		
Total PAHs**	0.0036	0.780	0.000	NA	0.0004	NA		
Phenol	<0.010	0.026	<0.010	NA	<0.010	NA	6.0	1.2
Field Measurements								
Field Water Temperature °C	5.4	4.6	9.1	NA	NA	NA		
Elec. Cond. @ 25°C µ/cm	1950	1386	1598	NA	NA	NA		
pH	8.35	7.55	6.5	NA	NA	NA		

NOTE: All values in parts per million (ppm; mg/l)
< = Denotes laboratory detection limit (see laboratory documentation, Appendix D)
* = From Chapter NR140, Wisconsin Administrative Code (ground water only)
** = Sum of detections
Analyses by NET Environmental Testing, Inc., Watertown, Wisconsin, WDNR Certification #128053530

1 = Field blank ground-water sample filter apparatus
2 = Field blank soil sampling equipment
3 = Analyses performed on field filtered samples

NA = Not analyzed

APPENDIX A
PREVIOUS INVESTIGATION DOCUMENTATION

Site Background

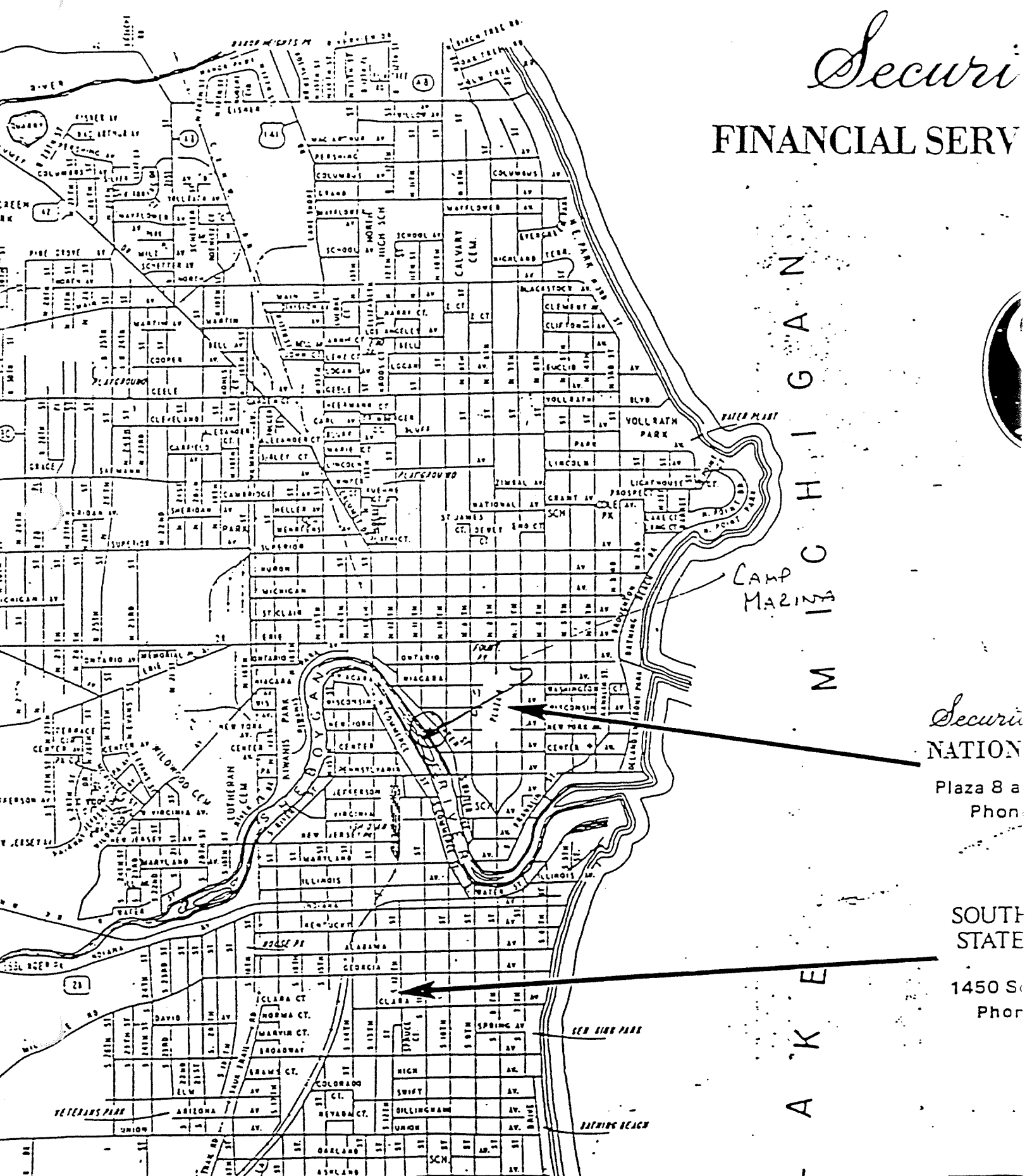
The site (approximately three acres) is the location of the former Sheboygan Gas Light Company. The legal description is Block 149, Lots 1-11, Plat of the City of Sheboygan. Manufactured gas was produced at this plant from approximately 1880 to 1930. According to the one former employee who could be interviewed, the processes used were coal and water gas using a "beehive" oven system. It is his belief that the tar produced was loaded onto railcars and sold.

In 1966, the site was sold to Heileman Brewery and was purchased and sold to other parties (list attached) until its purchase by the current owner, the City of Sheboygan. Heileman used most of the site for parking vehicles. A toy manufacturer, Garton Toy, is believed to have stored naphthalene on the north edge of the property.

In late August of 1990, city workers constructing a foundation for a floating marina at the site encountered a dark, oily waste material as they excavated along the shoreline (Excavation A on the attached drawing). This "pocket" of waste was removed and stockpiled. Its location was near the former location of a structure labeled as a "tar tank". (See attached facilities drawing.) According to those present, additional test excavations also showed "visible" contamination. It is unknown whether the shoreline represents an isolated area of contamination, whether other areas of the site are contaminated, and if this is gas plant waste. Also unknown is whether subsequent land use produced environmental contamination. A "worst case" sample of the black material from Excavation A was analyzed (results attached).

The location of the site is within the boundary of the Sheboygan River and Harbor Superfund site. It is the desire of all parties involved, including the Wisconsin Department of Natural Resources, to investigate and remediate, if necessary, outside of the Superfund process.

3/29/91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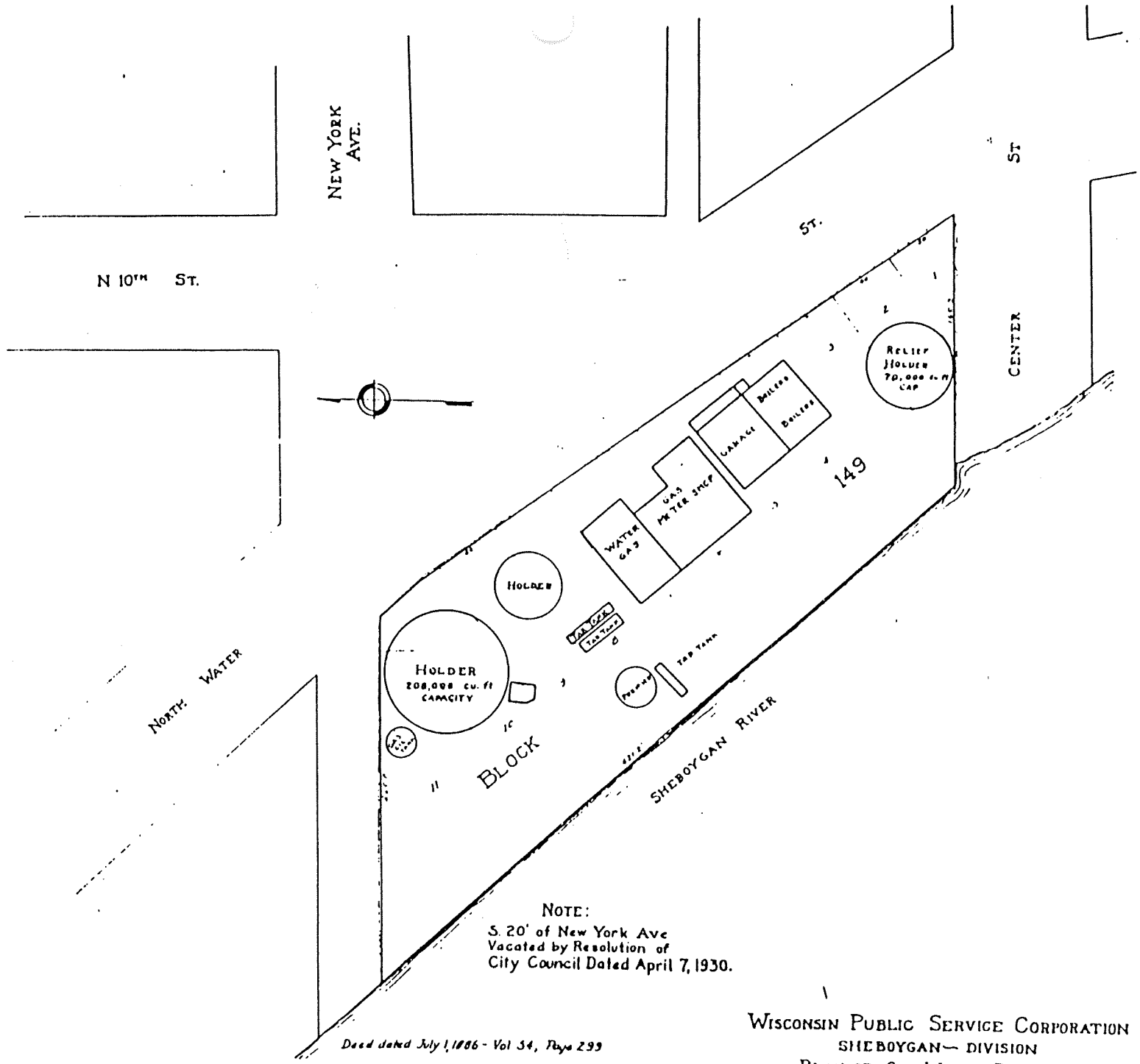


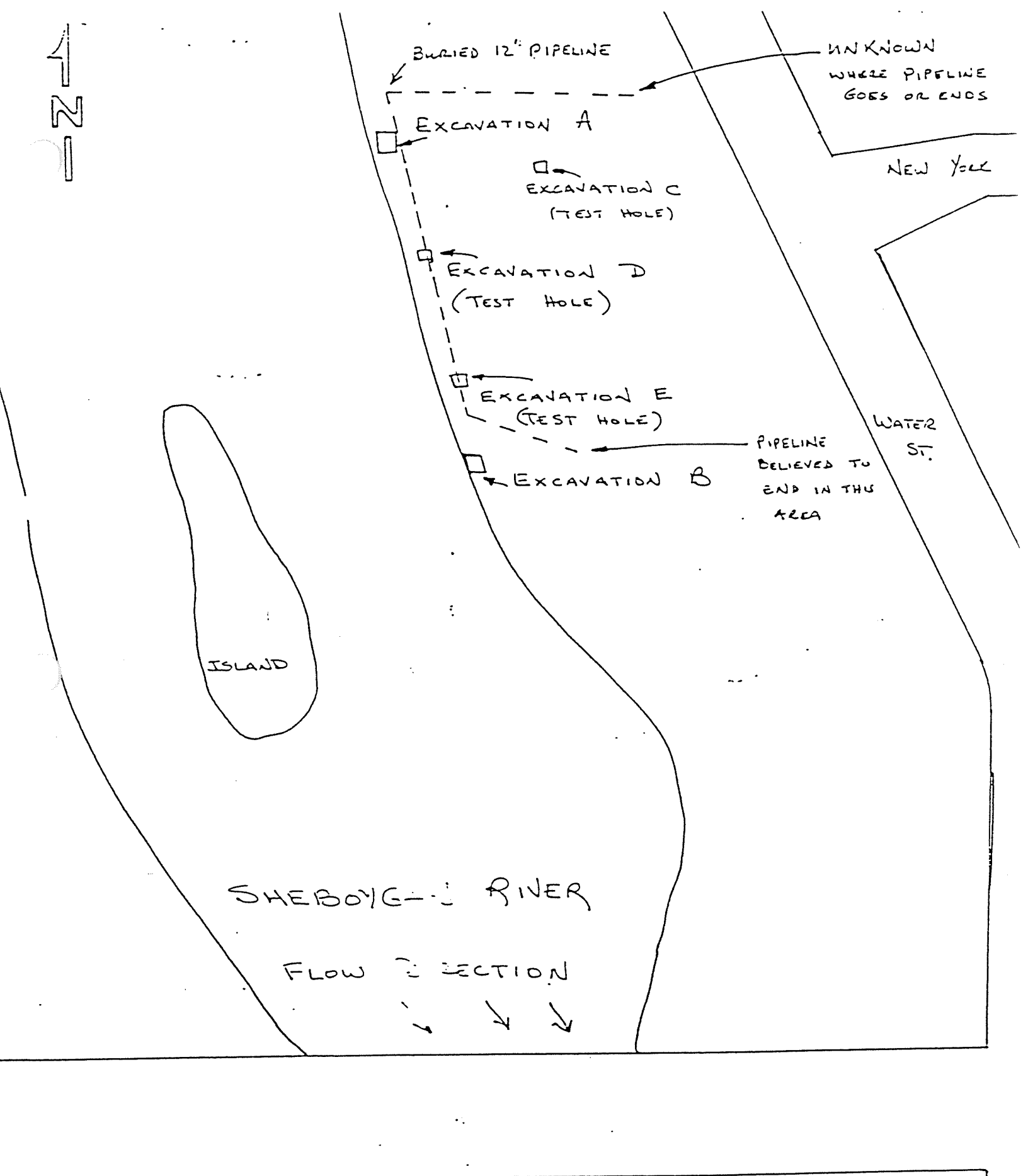
NOTE:
S. 20' of New York Ave
Vacated by Resolution of
City Council Dated April 7, 1930.

Deed dated July 1, 1886 - Vol 34, Page 299

WISCONSIN PUBLIC SERVICE CORPORATION
SHEBOYGAN — DIVISION
PLAN OF GAS WORKS PROPERTY
SHEBOYGAN, — WISCONSIN

Scale 1 in = 40 ft.

July 31, 1923
REVISED DEC 4, 1924
" OCT 6, 1941



*NOTE NOT TO SCALE

CITY OF SHEBOYGAN COAL GAS SITE/ CAMP MARINA - BOAT LANDING

Block 149, Lots 1-11, Original Plat of Sheboygan

Ownership History:

8/28/85	To:	City of Sheboygan
	From:	Sheboygan Outboard Club
	Recorded:	Vol. 989 at P. 947/8 W.D.
8/28/85	To:	Sheboygan Outboard Club
	From:	Garton Properties, Inc.
	Recorded:	Vol. 989 at P. 945/6 W.D.
1/31/80	To:	Garton Properties, Inc.
	From:	Riverside Properties, a Partnership
	Recorded:	Vol. 878 at P. 803 W.D.
11/17/77	To:	Riverside Properties, a Partnership
	From:	G. Heileman Brewing Co.
	Recorded:	Vol. 820 at P. 758 W.D.
6/07/66	To:	G. Heileman Brewing Co.
	From:	Wisconsin Public Service Corp.
	Recorded:	Vol. 485 at P. 321/2 W.D.
10/19/22	To:	Wisconsin Public Service Corp.
	From:	Sheboygan Gas Light Company
	Recorded:	Vol. 163 at P. 556 W.D.
6/25/01	To:	Sheboygan Gas Light Company
	From:	Sheboygan Natural Gas Co.
	Recorded:	Vol. 94 at P. 97/8 W.D.

ORTEK
ENVIRONMENTAL LABORATORY

- SAMPLE ANALYSIS REPORT -

To: E & K HAZARDOUS
2905 PAINE AVE
P O BOX 1249
SHEBOYGAN WI 53082-1249

Attn: R SACIA/J WEBER

Batch ID : 9008234
Our lab # : 103735
Your sample ID: #6167
Sample Matrix : SOIL

Report Date: 09/20/90

COLLECTION INFORMATION

Date/Time/By: 08/27/90 14:00 CHRIS H
Location : NEW YORK AVE/SHEBOYGAN

Lab#	Test		Result	Units
103735	Total Phenol	<	0.31	MG/KG
	Amenable Cyanide		0.88	UG/G
	Free Cyanide	<	0.31	UG/G
	Total Cyanide		0.88	UG/G
	Parr Bomb Chloride (% Chlorine)	<	0.38	%
	Flashpoint		> 210	o F
	Mercury	<	0.1	MG/KG
	Arsenic		1.1	MG/KG
	Lead		7.0	MG/KG
	Selenium	<	0.4	MG/KG
	Oil Fat Grease		580.0	MG/KG
	Silver	<	1.1	MG/KG
	Barium		40.3	MG/KG
	Cadmium	<	0.6	MG/KG
	Chromium		9.3	MG/KG
	Sulfide		52.0	MG/KG

Signed Nick Nelson Date 9/20/90

Signed David J. DeCarlo Date 9/20/90

ORTEK
ENVIRONMENTAL LABORATORY

ORTEK
2496 West Mason Street
P.O.Box 12435
Green Bay, WI 54307-2435
Telephone No.: (414) 498-2222

Client: E & K Hazardous
Address: 2905 Paine Ave.
P.O. Box 1249
Sheboygan, WI 53082

Attn.: C. Hohol
Telephone No.: (414) 458-6030

LABORATORY ANALYSIS RESULTS

Wisconsin Certification No. 405099530

Sample ID: #6167
Sample Desc: Grab Composite
Date Collected: 08/27/90
Date Received: 08/29/90
Sampled By: C. Hohol
Report to: C. Hohol
Results Sheet #: 42568
Batch No.: 9008234
Job #: 8877

PCB SOIL ANALYSIS

PARAMETER	DETECTION LIMIT	CONCENTRATION	* UNITS
Aroclor 1016	0.6	ND	mg/kg
Aroclor 1221	0.6	ND	mg/kg
Aroclor 1232	0.6	ND	mg/kg
Aroclor 1242	0.6	ND	mg/kg
Aroclor 1248	0.6	ND	mg/kg
Aroclor 1254	0.6	ND	mg/kg
Aroclor 1260	0.6	ND	mg/kg

* = Dry Weight Basis
ND = Not Detected

Comments: Lab Sample ID: 9008234 - 103735
:Date Analyzed: 09/17/90
:Analyzed by GC Method 8080 on a 1.5% SP2250/1.95% SP2401 packed column and confirmed on a DB-5 capillary column. Extraction cleanup required.

Signed : Jeffrey J. Bahnsen

Date: 9/18/90

ORTEK
ENVIRONMENTAL LABORATORY

ORTEK
Oneida Environmental Technology Center
2496 West Mason Street
P.O. Box 12435
Green Bay, WI 54307-2435
414/498-2222

GC/MS ORGANIC ANALYSIS SUMMARY

Client: E & K Hazardous
Address: 2905 Paine Ave.
P.O. Box 1249
Sheboygan, WI 53082-1249

Project Name: N. Y. Ave., Sheboygan R
SAS/Project Number: #8877
Batch Number: 9008234
Results Sheet #: 42568

Contact: R. Sacia

-CLIENT ID REPORTED ON FORMS AS EPA SAMPLE #
-VOLATILE ORGANIC ANALYSIS PERFORMED BY EPA METHOD 8240 ON A DB624-CAPILLARY COLUMN.

FORM INDEX:
Form 1A - Volatile Organics Data Sheet

"Q" COLUMN QUALIFIERS:
U - Compound analyzed for but not detected
D - Compound identified in the analysis at a secondary dilution
B - Indicates the analyte is found in the associated method blank
J - Estimated value, concentration of analyte below quantitation limit
E - Compound exceeds calibration range

Comments:

Signed: Jeffrey J. Bushner Date: 9/19/90

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

6167

Lab Name: ORTEK Contract: 42568

Lab Code: ORTEK Case No.: 103735 SAS No.: 8877 SDG No.: 6167

Matrix: (soil/water) SOIL Lab Sample ID: 103735

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 009CV065

Level: (low/med) MED Date Received: 08/29/90

% Moisture: not dec. 24 Date Analyzed: 09/06/90

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1600	U
74-83-9	Bromomethane	1600	U
75-01-4	Vinyl Chloride	1600	U
75-00-3	Chloroethane	1600	U
75-09-2	Methylene Chloride	600	BJ
67-64-1	Acetone	600	BJ
75-15-0	Carbon Disulfide	820	U
75-35-4	1,1-Dichloroethene	820	U
75-34-3	1,1-Dichloroethane	820	U
156-59-2	cis-1,2-Dichloroethene	820	U
156-60-5	trans-1,2-Dichloroethene	820	U
67-66-3	Chloroform	820	U
107-06-2	1,2-Dichloroethane	820	U
78-93-3	2-Butanone	1600	U
71-55-6	1,1,1-Trichloroethane	820	U
56-23-5	Carbon Tetrachloride	820	U
108-05-4	Vinyl Acetate	1600	U
75-27-4	Bromodichloromethane	820	U
78-87-5	1,2-Dichloropropane	820	U
10061-01-5	cis-1,3-Dichloropropene	820	U
79-01-6	Trichloroethene	820	U
124-48-1	Dibromochloromethane	820	U
79-00-5	1,1,2-Trichloroethane	820	U
71-43-2	Benzene	1900	
10061-02-6	trans-1,3-Dichloropropene	820	U
75-25-2	Bromoform	1600	U
108-10-1	4-Methyl-2-Pentanone	1600	U
591-78-6	2-Hexanone	1600	U
127-18-4	Tetrachloroethene	820	U
79-34-5	1,1,2,2-Tetrachloroethane	820	U
108-88-3	Toluene	430	J
108-90-7	Chlorobenzene	820	U
100-41-4	Ethylbenzene	7000	
100-42-5	Styrene	820	U
1330-20-7	Xylene (total)	-7000	E

ORTEK
ENVIRONMENTAL LABORATORY

ORTEK
Oneida Environmental Technology Center
2496 West Mason Street
P.O. Box 12435
Green Bay, WI 54307-2435
414/498-2222

GC/MS ORGANIC ANALYSIS SUMMARY

Client: E & K Hazardous
Address: 2905 Paine Ave.
P.O. Box 1249
Sheboygan, WI 53082

Project Name: City of Sheboygan
SAS/Project Number: 8877
Batch Number: 9008234
Results Sheet #: 42568

Contact: Chris M. Hohol

-CLIENT ID REPORTED ON FORMS AS EPA SAMPLE #
-SEMIVOLATILE ORGANIC ANALYSIS PERFORMED BY EPA METHOD 625 ON A DB5 CAPILLARY COLUMN.

FORM INDEX:
Form 1B - Semivolatile Organics Data Sheet, page 1
Form 1C - Semivolatile Organics Data Sheet, page 2
Form 1F - Semivolatile Tentatively Identified Compounds

"Q" COLUMN QUALIFIERS:
U - Compound analyzed for but not detected
D - Compound identified in the analysis at a secondary dilution
B - Indicates the analyte is found in the associated method blank
J - Estimated value, concentration of analyte below quantitation limit
E - Compound exceeds calibration range

Comments: Sample 6167 was extracted as a low level soil and then diluted 1:5 in order to keep certain target compounds within the calibration range of the instrument.

Signed: Jeffrey J. Bushman Date: 9/17/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

6167

ab Name: ORTEK Contract: 6877

ab Code: ORTEK Case No.: 103735 SAS No.: _____ SDG No.: 6167

atrix: (soil/water) SOIL Lab Sample ID: 103735

ample wt/vol: 30.0 (g/mL) G Lab File ID: 00988048

evel: (low/med) LOW Date Received: 08/29/90

Moisture: not dec. 19 dec. _____ Date Extracted: 09/10/90

xtraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/14/90

PC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000	U
111-44-4	bis(2-Chloroethyl)Ether	2000	U
95-57-8	2-Chlorophenol	2000	U
541-73-1	1,3-Dichlorobenzene	2000	U
106-46-7	1,4-Dichlorobenzene	2000	U
100-51-6	Benzyl Alcohol	2000	U
95-50-1	1,2-Dichlorobenzene	2000	U
95-48-7	2-Methylphenol	2000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	2000	U
106-44-5	4-Methylphenol	2000	U
621-64-7	N-Nitroso-Di-n-Propylamine	2000	U
67-72-1	Hexachloroethane	2000	U
98-95-3	Nitrobenzene	2000	U
78-59-1	Isophorone	2000	U
88-75-5	2-Nitrophenol	2000	U
105-67-9	2,4-Dimethylphenol	2000	U
65-85-0	Benzoic Acid	9900	U
111-91-1	bis(2-Chloroethoxy)Methane	2000	U
120-83-2	2,4-Dichlorophenol	2000	U
120-82-1	1,2,4-Trichlorobenzene	2000	U
91-20-3	Naphthalene	14000	
106-47-8	4-Chloroaniline	2000	U
87-68-3	Hexachlorobutadiene	2000	U
59-50-7	4-Chloro-3-Methylphenol	2000	U
91-57-6	2-Methylnaphthalene	4900	
77-47-4	Hexachlorocyclopentadiene	2000	U
88-06-2	2,4,6-Trichlorophenol	2000	U
95-95-4	2,4,5-Trichlorophenol	9900	U
91-58-7	2-Chloronaphthalene	2000	U
88-74-4	2-Nitroaniline	9900	U
131-11-3	Dimethyl Phthalate	2000	U
208-96-8	Acenaphthylene	140	J
606-20-2	2,6-Dinitrotoluene	2000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

6167

Lab Name: ORTEX Contract: 8877

Lab Code: ORTEX Case No.: 103735 SAS No.: _____ SDG No.: 6167

Matrix: (soil/water) SOIL Lab Sample ID: 103735

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 00553048

Level: (low/med) LOW Date Received: 08/29/90

% Moisture: not dec. 19 dec. _____ Date Extracted: 09/10/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/14/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	9900	U
83-32-9	Acenaphthene	2200	
51-28-5	2,4-Dinitrophenol	9900	U
100-02-7	4-Nitrophenol	9900	U
132-64-9	Dibenzofuran	240	J
121-14-2	2,4-Dinitrotoluene	2000	U
84-66-2	Diethylphthalate	2000	U
7005-72-3	4-Chlorophenyl-phenylether	2000	U
86-73-7	Fluorene	1100	J
100-10-6	4-Nitroaniline	9900	U
534-52-1	4,6-Dinitro-2-Methylphenol	9900	U
86-30-6	N-Nitrosodiphenylamine (1)	2000	U
101-55-3	4-Bromophenyl-phenylether	2000	U
118-74-1	Hexachlorobenzene	2000	U
87-86-5	Pentachlorophenol	9900	U
85-01-8	Phenanthrene	4500	
120-12-7	Anthracene	1300	J
84-74-2	Di-n-Butylphthalate	2000	U
206-44-0	Fluoranthene	2300	
129-00-0	Pyrene	3400	
85-68-7	Butylbenzylphthalate	2000	U
91-94-1	3,3'-Dichlorobenzidine	4100	U
56-55-3	Benzo(a)Anthracene	1200	J
218-01-9	Chrysene	960	J
117-81-7	bis(2-Ethylhexyl)Phthalate	2000	U
117-84-0	Di-n-Octyl Phthalate	2000	U
205-99-2	Benzo(b)Fluoranthene	490	J
207-08-9	Benzo(k)Fluoranthene	520	J
50-32-8	Benzo(a)Pyrene	1000	J
193-39-5	Indeno(1,2,3-cd)Pyrene	390	J
53-70-3	Dibenz(a,h)Anthracene	2000	U
191-24-2	Benzo(g,h,i)Perylene	520	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

6167

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ORTEK Contract: 8677

Lab Code: ORTEK Case No.: 103735 SAS No.: _____ SDG No.: 6167

Matrix: (soil/water) SOIL Lab Sample ID: 103735

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 00985048

Level: (low/med) LOW Date Received: 08/29/90

% Moisture: not dec. 19 dec. _____ Date Extracted: 09/10/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/14/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 5.0

Number TICs found: 19 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	611-15-4	BENZENE, 1-ETHENYL-2-METHYL-	8.50	1700	J
2.	2471-83-2	1H-INDENE, 1-ETHYLIDENE-	14.02	4900	J
3.	569-41-5	NAPHTHALENE, 1,8-DIMETHYL-	15.90	1900	J
4.	2131-41-1	NAPHTHALENE, 1,4,5-TRIMETHYL	18.25	940	J
5.	17301-29-0	UNDECANE, 3,7-DIMETHYL-	18.79	960	J
6.	20959-33-5	HEPTADECANE, 7-METHYL-	20.29	1700	J
7.	613-12-7	ANTHRACENE, 2-METHYL-	23.00	1300	J
8.	883-20-5	PHENANTHRENE, 9-METHYL-	23.34	1400	J
9.	10544-50-0	SULFUR, MOL. (S8)	25.04	41000	J
10.	10224-91-6	BENZENE, 1,1'-ETHYLIDENEBIS[	25.59	2500	J
11.	238-84-6	11H-BENZO[A]FLUORENE	26.92	920	J
	123-79-5	HEXANEDIOIC ACID, DIOCTYL ES	28.86	4100	J
13.	544-76-3	HEXADECANE	31.86	1300	J
14.	21078-65-9	1-DECANOL, 2-ETHYL-	32.79	1300	J
15.	80-97-7	CHOLESTANOL (VAN)	35.49	3100	J
16.	1753-61-3	CHOLESTANE, 2,3-EPOXY-, (2.A	35.92	5900	J
17.	80-97-7	CHOLESTANOL (VAN)	35.99	2200	J
18.	1753-61-3	CHOLESTANE, 2,3-EPOXY-, (2.A	36.41	1200	J
19.	191-26-4	DIBENZO[DEF,MNO]CHRYSENE	37.64	900	J

Oneida Environmental Technology Center
2496 West Mason Street
P. O. Box 12435
Green Bay, WI 54307-2435
414/498-2222

-PRELIMINARY RESULTS-

Client: E&K HAZARDOUS Date: 9/21/90

Lab ID: 9009153: 104425 Fax: Yes _____ No _____

SAMPLE ID	ANALYSIS	RESULTS	UNITS
104425	TPH-S	150	MG/KG
#61107			
Composit			

Approved by: Dwight L. Caldwell Date: 9/21/90

APPENDIX B
TEST PIT LOGS

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-101

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			0.8						
			2		SM									
			4	1.0 - 5.0: SILTY SAND, 60% fine-grained sand, 30% silt, 10% brick fragments, containing organic material, well graded, dark yellowish brown (10YR 4/6) to black (10YR 2/1), no odor, moist (Fill)										
2			6					0.4						
			8	5.0 - 6.0: SANDY SILT, gray (10YR 5/1), no odor, moist	ML									
				6.0 - 10.0: CLAYEY SAND, 75% medium to coarse sand and 25% clay containing roots and shell fragments, well graded, brown (10YR 5/3) to black (10YR 2/1), organic H_2S odor, moist, saturated at 10 feet (Fluvial Deposits)	SC									
3			10					0.2						
				EOB: 10.0 ft.										
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Burch

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-102

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
				0											
1				2	0.0 - 0.5: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			0.4						
				4	0.5 - 5.0: SILTY SAND and GRAVEL, well graded, very dark brown (10YR 2/2), no odor, moist (Fill)	GM-SM									
2				6	5.0 - 10.0: SILTY SAND to CLAYEY SAND, well graded, light gray (5YR 7/1), slight fuel oil-like odor, wet				7.0						
				8		SM-SC									
3				10	EOB: 10.0 ft.				7.2						
					Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Brown

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-103

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			0	0.0 - 0.25: TOPSOIL/GRASS											
1			2	0.25 - 4.0: SILTY SAND, 60% medium- to fine-grained sand; 30% silt, 10% brick and concrete fragments; well graded, yellowish brown (10YR 5/6) to black (10YR 2/1), moist (Fill)	OH / SM			0.6							
2			4	4.0 - 9.0: SILTY SAND, 70% sand, 20% silt, and 10% gravel containing shell fragments, well graded, yellowish brown (10YR 5/6) to brown (10YR 3/3), black (10YR 2/1) at 7.0 ft., slight creosote-like odor, wet, saturated below 5.0 feet	SM			0.2							
3			6					3.5							
4			8	9.0 - 10.0: SILTY SAND, 70% well-rounded, fine- to medium-grained sand; 30% silt, well graded, gray (10YR 2/1), less creosote-like odor, no free water in pit but below or at river level	SM			5.0							
			10	EOB: 10.0 ft.											
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.											

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

Signature	Firm
Richard J. Bendix	SIMON HYDRO-SEARCH 175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-104

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92 (MM DD YY)	03/26/92 (MM DD YY)	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
			0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM									
			2		SM									
2			4	1.0 - 5.5: SILTY SAND, fine- to medium-grained; 10% gravel and cobbles, well graded, yellowish brown (10YR 5/6), black (10YR 2/1) at 5.5 ft., hit edge of concrete foundation at 4.0 ft., creosote-like odor, moist, saturated below 5.5 feet (Fill)										
			6	EOB: 5.5 ft.										
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Bender

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-105

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: PENETRATION RESISTANCE STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
1				0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			2.0						
				2		SM									
				4	1.0 - 3.0: SILTY SAND, 50% medium to fine sand; 30% silt; 20% brick debris; yellowish brown (10YR 5/8), hit concrete slab at 3.0 feet, no odor, moist (Fill)										
					EOB: 3.0 ft. (Refusal, concrete slab)										
					Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Robert J. Bauer

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-106

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE RECOVERED (in)	BLOWS/COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: PENETRATION STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
1			0	0.0 - 0.5: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			0.2						
			2											
			4	0.5 - 6.0: SILTY SAND and GRAVEL, about 50% sand, 25% silt, and 25% cinders and bricks, slag layer at 3.5 ft., well graded, dark brown (10YR 3/3) to very dark brown (10YR 2/2), creosote-like hydrocarbon odor, moist, saturated below 5.5 ft.	GM-SM									
2			6					12.0						
				EOB: 6.0 feet Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Burda

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-107

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: PENETRATION STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			0.2						
			2		SM-SW									
			4	1.0 - 4.0: SILTY SAND and GRAVEL, 60% medium-grained sand; 20% silt; 10% fine subangular gravel; 10% slag, cinders, brick, and wood; well graded, very dark brown (10YR 2/2) to dark yellowish brown (10YR 4/4) to dark brown (10YR 4/2), creosote-like hydrocarbon odor, moist (Fill)	Fill									
2			6		SM-GM			0.2						
				4.0 - 5.0: 4-inch hardened slag layer, slight creosote-like hydrocarbon odor, moist (Fill)										
				5.0 - 5.5: SILTY SAND and GRAVEL, well graded, black (10YR 2/1), strong fuel oil odor, free product in excavation at 5.5 ft.										
				EOB: 5.5 ft.										
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Brooks

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-108

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: PENETRATION STANDARD	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
				0											
1					0.0 - 0.5: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM SM			1.6						
				2		SM									
2				4	0.5 - 1.5: SILTY SAND, about 75% fine- to medium-grained sand; 25% silt; well graded, yellowish brown (10YR 5/6) medium dense, no odor, moist Beach Sand)				2.7						
					1.5 - 4.0: CONCRETE foundations about 2 feet apart with silty sand between. Foundations at lest 1.5 feet thick. Sand between foundations is moist with slight fuel oil-like hydrocarbon odor.										
					EOB: 4.0 ft.										
					Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Burda

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-108A

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/26/92	03/26/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
1				0	0.0 - 0.5: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM / SM			0.4						
				2											
2				4	0.5 - 2.0: SILTY SAND and GRAVEL, about 35% sand; 35% gravel; 20% silt; 10% cinder slag, brick clasts, and styrofoam pieces; well graded, grayish brown (10YR 3/2), sulfur odor, moist (Fill)	SM			0.2						
				6	2.0 - 5.0: SILTY SAND, 70% sand and 30% silt, light yellowish brown (10YR 5/10) loose, slight fuel oil-like hydro carbon odor at 4.0 feet, moist, saturated below 4.0 feet, visible product sheen on water										
					EOB: 5.0 ft.										
					Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Brooks

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-109

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE RECOVERED LENGTH (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
			0											
1			2	0.0 - 1.5: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			1.2						
2			4 6	1.5 - 7.0: SILTY SAND and GRAVEL, about 45% medium, subrounded sand; 35% silt; 30% slag, cinders, and brick fragments; well graded, dark brown (10YR 3/3) to black (10YR 2/1), slight hydrocarbon odor, moist (Fill)	SM			8.0						
3			8	7.0 - 7.5: Same as above with strong fuel oil-like hydrocarbon odor, free product present at 7.5 feet, saturated EOB: 7.5 ft. Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.				36						

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

Signature Richard J. Brooks

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-110

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOWS PER 6 INCHES	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
			0	0.0 - 0.5: GRASS and TOPSOIL (OH)	OH									
1			2	0.5 - 6.0: SILTY SAND and GRAVEL, about 50% medium, subrounded sand; 25% silt; 10% clay; 15% subangular gravel, brick fragments, coal, and cinders; well graded, yellowish brown (10YR 4/4) to very dark brown (10YR 2/1), medium dense, concrete slab and 1-inch steel cable at 4.5 feet, no odor to slight sulfur odor at 5.0 ft., moist, saturated below 5 ft., perched (Fill)	SM-GM			neg.						
2			4					neg.						
			6	6.0 - 7.0: SILTY CLAY to CLAYEY SILT, about 90% silt and clay, about 10% sub-angular shaley and dolomitic sand and gravel, plastic, reddish brown (5YR 5/4), stiff, no odor, saturated	CL-ML									
			8	EOB: 7.0 ft.										
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard J. Brooks

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

This form is authorized by Chapters 144.147 AND 162, Wis. Stats. Completion of this report is mandatory. Penalties; Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both, for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-111

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (M M D D Y Y)	Date Drilling Completed (M M D D Y Y)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH	SAMPLE RECOVERED (in)	BLOWS	COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P 200	RQD/ COMMENTS
1					0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM / ML			2.6							
					2												
					4	1.0 - 1.25: CINDER FILL, black (10YR 7/1), very soft, no odor, moist (Fill)	Fill										
2										4.0							
					6	1.25 - 5.0: FURNACE BRICK, orderly stacked brick with no mortar. Possibly used as support against slumping of the river bank; unpenetrable concrete slab at 5.0 ft., no odor, dry (Fill)											
					8	EOB: 5.0 ft. (refusal)											
						Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.											

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

Signature Richard J. Burda

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
_X_ Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-112

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03 / 25 / 92	03 / 25 / 92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	6 0	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH (in)	SAMPLE RECOVERED (in)	BLOWS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID / FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE	CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/ COMMENTS
1				0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			neg.							
				2												
2				4	1.0 - 7.0: SILTY SAND, about 50% medium sand, subrounded; about 35% silt; about 15% fine subangular gravel, dolomite and shale; yellowish brown (10YR 5/6) to dark brown, medium stiff, contains bricks, cinder fill, shale, and coal, slight naphthalene (moth ball-like) odor (Fill)	SM			3.0							
				6												
				8	Wooden vat at 7.0 feet was broken by backhoe; water filled bottom of hole											
					EOB: 7.0 ft.											
					Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.											

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

Signature [signature] Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation		TP-113

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
1			0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM / CH			28						
2			4	1.0 - 2.0: SILT and CLAY, 15% brick fragments; 5% dolomitic sandy gravel; plastic, dark brown (10YR 3/3) to black (10YR 2/1), moderately stiff, possible coal fragments, cinders, and tar, strong naphthalene (moth ball-like) odor, moist (Fill)	SM			110						
3			8	2.0 - 8.0: SILTY SAND, about 70% medium-grained subrounded sand; 30% silt; well graded, containing cinders, wood fibers, and tar or fuel oil, dark brown to black (10YR 3/3 to 10YR 2/1), soft, 10-inch pipe at 4 feet, moisture/product increasing with depth, tar or oil saturated at 6 feet, tar or fuel-like odor, moist (SM, Fill)	CL-ML			103						
			10	8.0 - 10.0: SILTY CLAY, 90% silt and clay, 10% fine sand pockets; well graded, medium plasticity, dark tan (10YR 5/6), soft, no black staining (appears cleaner), no standing water, moist (CL-ML)										
				EOB: 10.0 ft.										
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature Richard M Brooks

Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

State of Wisconsin
Department of Natural Resources

Route To:
___ Solid Waste
___ Emergency Response
___ Wastewater
X Haz. Waste
___ Underground Tanks
___ Water Resources
___ Other _____

SOIL BORING LOG INFORMATION
Form: 4400-122 7/91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wisconsin Public Service Corporation	___ ___ ___ ___ ___ ___ ___	TP-114

Boring Drilled by (Firm name and name of crew chief)	Date Drilling Started (MM DD YY)	Date Drilling Completed (MM DD YY)	Drilling Method
Gabes Construction Co., Inc., Jim Brooks	03/25/92	03/25/92	Backhoe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
___ ___ ___	___ ___ ___ ___ ___ ___		_____ Feet MSL	595 Feet MSL	_____ inches

Boring Location
State Plane _____ N, _____ E S/C/N
NW ¼ of SW ¼ of Section 23 T 15 N, R 23 E
Lat ___ ___ ___
Long ___ ___ ___

Local Grid Location (if applicable)
_____ Feet N or S
_____ Feet E or W

County	DNR County Code	Civil Town/City/or Village
Sheboygan	60	Sheboygan

SAMPLE NUMBER	SAMPLE LENGTH RECOVERED (in)	BLOW COUNTS	DEPTH (ft.)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	GRAPHIC LOG	WELL DIAGRAM	PID/FID	SOIL PROPERTIES: STANDARD PENETRATION	MOISTURE CONTENT	LIQUID LIMIT	PLASTIC LIMIT	P200	RQD/COMMENTS
			0	0.0 - 1.0: SAND and GRAVEL, about 50% fine-grained, subangular dolomitic gravel, about 40% medium- to coarse-grained subangular to subrounded sand, well graded, light pale brown (10YR 7/4), very loose, no odor, moist (Fill)	GM-SM			0.0						
			2											
			4	1.0 - 10.0: SILTY CLAY to CLAYEY SILT, about 90% poorly graded silt and sand; about 10% subangular shaley and dolomitic sand and gravel, plastic, reddish brown (5YR 5/4), medium stiff, no odor, moist										
2			6		CH			6.0						
			8											
3			10	EOB: 10.0 ft.				5.5						
				Note: Test pit excavated via backhoe, soil samples collected using a stainless steel sample trowel.										

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

Signature _____ Firm SIMON HYDRO-SEARCH
175 N. Corporate Dr., #100, Brookfield, WI 53045

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SIMON HYDRO-SEARCH

APPENDIX C
FIELD PHOTOIONIZATION
DETECTOR DOCUMENTATION

Instrument Number HNu #3

Date	User	Calibration Gas (Cannister Pressure)	Probe eV	Span	Reading (ppm)
3/25	RJB/JFK	145 psi	11.7 #3	2.31	67 100 ppm Isobutylene
3/26	" "	125 psi	11.7 #3	3.88	67 100 ppm Isobutylene

Hydro-Search, Inc.
HYDROLOGISTS-GEOLOGISTS-ENGINEERS
RENO DENVER MILWAUKEE

HNu CALIBRATION LOG

FIGURE B.2.2

Site: WPSC Sheboygan MGP
Project No: 45314843

FIELD PID DATA FORM

Date: 3/25/92
Personnel: RJB, RJK
Meter No: #3
Probe eV: 11.7 #3

Sample Number	Sample Media (1)	Location/ Depth	Moisture (2)	Time Sample Collected	Time Sample Analyzed	Volatilization Period Air Temp (C)	PID Readings (ppm) Background	Peak Response	Comments
TP114	SO	1.5'	M	09:11	17:10	70°F	0.0	0.0	Possible moisture response
TP114		5'	M	09:20	17:12		1.8	6.0	No H/C odor
TP114		10'	M-W	09:28	17:14		2.2	5.5	No HC odor
TP113		1.5'	M	09:48	17:15		2.0	78	Fuel oil like H/C odor and napthaline
TP113		5.0'	M	09:55	17:17		1.1	110	Coal tar and fuel oil
TP113		10'	M	10:07	17:19		1.2	103	moth ball / fuel oil
TP112		1.5'	M	11:28	17:20		1.3	Neg	Moisture no odor slight sulfur
TP112		5.0'	M	11:40	17:21		1.2	3.0	No odor Bricks
TP111		1.5'	M	13:00	17:22		1.2	2.6	No odor
TP111		5.0'	M	13:18	17:23		1.1	4.0	no odor
TP110		1.5'	M	13:35	17:25		1.0	Neg	no odor
TP110		5.0'	M	14:10	17:26		1.0	Neg	no odor
CS102D		0.0-0.25'	M	13:50	17:28		1.2	2.0	no odor
CS102B		0.0-0.25'	M	14:52	17:29		1.0	1.6	no odor
TP-109		1.5'	M	1506	17:30		1.0	1.2	no odor
TP-109		5.0'	M	15.12	17:31		1.2	8.0	Slight H/C odor
TP-109	↓	8.0	S	15.41	17:33	↓	1.3	36	Saturated fuel oil & moth balls odor

(1) SO - Soil
SD - Sediment
GW - Ground Water
SW - Surface Water
WS - Waste (Solid)
WL - Waste (Liquid)

(2) D - Dry
M - Moist
W - Wet
S - Saturated

Site: WPSC Sheboygan MGP

Project No: 45311 4843

Date: 3/25/92

Personnel: SFK, RJB

Meter No: #3

Probe eV: 11.7 #3

FIELD PID DATA FORM

Sample Number	Sample Media (1)	Location/ Depth	Moisture (2)	Time Sample Collected	Time Sample Analyzed	Volatilization Period Air Temp (C)	PID Readings (ppm) Background	PID Readings (ppm) Peak Response	Comments
CS108	SO	0.0-0.25	M	15:25	17:35	70°F	1.8	1.6	No odor
TP-108	↓	1.5	M	16:07	17:36	↓	1.4	1.4	No odor
TP-108	↓	4.0	S	16:17	17:37	↓	1.4	27	Fuel oil Saturated water
CS104	↓	0.0-0.25	M	16:05	17:38	↓	1.5	1.5	no odor

(1) SO - Soil
SD - Sediment
GW - Ground Water
SW - Surface Water
WS - Waste (Solid)
WL - Waste (Liquid)

(2) D - Dry
M - Moist
W - Wet
S - Saturated

Site: WPSC Sheboygan MPG

Project No: 453114843

Date: 3/26/92

Personnel: JFK/RJB

Meter No: #3

Probe eV: #11.7eV #3

FIELD PID DATA FORM

Sample Number	Sample Media (1)	Location/ Depth	Moisture (2)	Time Sample Collected	Time Sample Analyzed	Volatilization Period Air Temp (C)	PID Readings (ppm) Background	PID Readings (ppm) Peak Response	Comments
TP108	SO	1.5'	M	08:05	16:52	70°F	0.8	0.4	No odor
TP108		5'	M	08:19	16:53		0.2	0.2	No odor
CS101C		0.0-0.25'	M	09:15	16:55		0.4	0.2 neg	No odor
TP105		2.0'	M	10:08	16:56		0.2	0.2	No odor
TP107		5.0'	M	09:10	16:57		0.2	28	fuel oil-like odor
TP107		2.0'	M	08:26	16:59		0.2	0.2	No odor
CS101b		0.0-0.25'	M	10:40	17:00		0.2	0.2	No odor
TP106		1.5'	M	10:15	17:01		0.2	0.2	No odor
TP106		5'	M	10:34	17:02		0.4	12	Slight fuel oil odor
TP104		1.5'	M	11:20	17:03		0.2	0.2	No odor
TP104		5'	M	11:25	17:05		0.4	0.2	No odor
TP104		6.5'	M	11:52	17:10		0.4	14	Hydro Carbon moth ball odor
TP-103		1.5	M	12:50	17:08		1.0	0.6	no odor
TP103		4	M	12:55	17:09		0.8	0.2	No odor
TP103		7	M	13:11	17:10		0.8	3.5	V. Slight HC moth ball odor
TP103		10	M	13:30	17:12		1.0	5.0	V. Slight HC moth ball odor
TP101	↓	1.5	M	14:07	17:14	↓	1.0	0.8	No odor

(1) SO - Soil
SD - Sediment
GW - Ground Water
SW - Surface Water
WS - Waste (Solid)
WL - Waste (Liquid)

(2) D - Dry
M - Moist
W - Wet
S - Saturated

Site: WPSC Sheboygan MPG

Project No: 453114843

Date: 3/26/92

Personnel: RJB, JFK

Meter No: #3

Probe eV: 11.7 #3

FIELD PID DATA FORM

Sample Number	Sample Media (1)	Location/ Depth	Moisture (2)	Time Sample Collected	Time Sample Analyzed	Volatilization Period Air Temp (C)	PID Readings (ppm) Background	PID Readings (ppm) Peak Response	Comments
TP101	SO	5'	M	14:11	17:15	70	1.0	0.4	No odor
TP101	↓	10'	S	14:27	17:17	↓	1.0	0.2	Saturated H_2S swamp/ odor
TP102	↓	1-5'	M	15:18	17:19	↓	1.0	0.4	no odor
TP102	↓	5'	M	15:23	17:20	↓	0.8	7.0	Slight fuel oil odor
TP102	↓	10'	M	15:40	17:22	↓	1.0	7.2	Slight fuel oil odor

(1) SO - Soil
SD - Sediment
GW - Ground Water
SW - Surface Water
WS - Waste (Solid)
WL - Waste (Liquid)

(2) D - Dry
M - Moist
W - Wet
S - Saturated

APPENDIX D
LABORATORY DOCUMENTATION

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

Project # 453114843
CC:

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42440
Account No: 39150
Purchase Order:
Page 1

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP101 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.80*	mg/kg
Cyanide, dissociable	0.65	mg/kg
Cyanide, total	0.80	mg/kg
Solids, Total	69.	%
Arsenic, GFAA	3.4	mg/kg
Nickel, AA	14.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<2700.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<2700.	ug/kg
Acenaphthylene	<2700.	ug/kg
Anthracene	<2700.	ug/kg
Benzo(a)anthracene	11,000.	ug/kg
Benzo(a)pyrene	11,000.	ug/kg
Benzo(b)fluoranthene	8,800.	ug/kg
Benzo(k)fluoranthene	10,000.	ug/kg
Benzo(g,h,i)perylene	7,000.	ug/kg
Chrysene	9,900.	ug/kg
Dibenzo(a,h)anthracene	3,100.	ug/kg
Fluoranthene	15,000.	ug/kg

*Unable to determine due to interferences.

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

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42440
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP101 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Fluorene	<2700.	ug/kg
Indeno(1,2,3,cd)pyrene	7,000.	ug/kg
Naphthalene	<2700.	ug/kg
Phenanthrene	4,400.	ug/kg
Pyrene	14,000.	ug/kg

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

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42441
Account No: 39150
Purchase Order:
Page 3

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP102 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.19*	mg/kg
Cyanide, dissociable	<0.25	mg/kg
Cyanide, total	0.19	mg/kg
Solids, Total	85.	%
Arsenic, GFAA	0.9	mg/kg
Nickel, AA	7.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<660.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	<660.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	<660.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg
Fluoranthene	<660.	ug/kg

*Unable to determine due to interferences.

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Certification No. 128053530

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ANALYTICAL REPORT

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42441
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP102 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg
Naphthalene	<660.	ug/kg
Phenanthrene	<660.	ug/kg
Pyrene	<660.	ug/kg

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ANALYTICAL REPORT

04/30/1992

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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42442
Account No: 39150
Purchase Order:
Page 5

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP103 7'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<8.5*	mg/kg
Cyanide, dissociable	1.9	mg/kg
Cyanide, total	8.5	mg/kg
Solids, Total	81.	%
Arsenic, GFAA	0.9	mg/kg
Nickel, AA	10.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
DRO - NONAQUEOUS	3000.	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	1,100.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	1,600.	ug/kg
Benzo(a)anthracene	3,800.	ug/kg
Benzo(a)pyrene	3,500.	ug/kg
Benzo(b)fluoranthene	3,200.	ug/kg
Benzo(k)fluoranthene	3,400.	ug/kg
Benzo(g,h,i)perylene	2,100.	ug/kg
Chrysene	3,400.	ug/kg
Dibenzo(a,h)anthracene	980.	ug/kg

*Unable to determine due to interferences.

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Job No: 92.1260
Sample No: 42442
Account No: 39150
Purchase Order:
Page 6

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP103 7'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Fluoranthene	6,900.	ug/kg
Fluorene	1,200.	ug/kg
Indeno(1,2,3,cd)pyrene	2,100.	ug/kg
Naphthalene	<660.	ug/kg
Phenanthrene	5,400.	ug/kg
Pyrene	6,200.	ug/kg

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04/30/1992

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Job No: 92.1260
Sample No: 42445
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP104 6.5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	86.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<660.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	<660.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	<660.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg
Fluoranthene	<660.	ug/kg
Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg

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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42445
Account No: 39150
Purchase Order:
Page 12

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP104 6.5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Naphthalene	4,300.	ug/kg
Phenanthrene	<660.	ug/kg
Pyrene	<660.	ug/kg

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04/30/1992

Mr. Richard Binder
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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42446
Account No: 39150
Purchase Order:
Page 13

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP106 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.83*	mg/kg
Cyanide, dissociable	0.64	mg/kg
Cyanide, total	0.83	mg/kg
Solids, Total	86.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	0.3	mg/kg
Ethylbenzene	0.2	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<13200.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<13200.	ug/kg
Acenaphthylene	<13200.	ug/kg
Anthracene	<13200.	ug/kg
Benzo(a)anthracene	<13200.	ug/kg
Benzo(a)pyrene	<13200.	ug/kg
Benzo(b)fluoranthene	<13200.	ug/kg
Benzo(k)fluoranthene	<13200.	ug/kg
Benzo(g,h,i)perylene	<13200.	ug/kg
Chrysene	<13200.	ug/kg
Dibenzo(a,h)anthracene	<13200.	ug/kg
Fluoranthene	18,000.	ug/kg
Fluorene	<13200.	ug/kg
Indeno(1,2,3,cd)pyrene	<13200.	ug/kg

*Unable to determine due to interferences.

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Job No: 92.1260
Sample No: 42446
Account No: 39150
Purchase Order:
Page 14

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP106 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Naphthalene	<13200.	ug/kg
Phenanthrene	18,000.	ug/kg
Pyrene	20,000.	ug/kg

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04/30/1992

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Job No: 92.1260
Sample No: 42447
Account No: 39150
Purchase Order:
Page 15

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP107 2'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5 *	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	85.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	0.9	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	0.2	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<6600.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<6600.	ug/kg
Acenaphthylene	<6600.	ug/kg
Anthracene	<6600.	ug/kg
Benzo(a)anthracene	13,000.	ug/kg
Benzo(a)pyrene	15,000.	ug/kg
Benzo(b)fluoranthene	13,000.	ug/kg
Benzo(k)fluoranthene	16,000.	ug/kg
Benzo(g,h,i)perylene	14,000.	ug/kg
Chrysene	13,000.	ug/kg
Dibenzo(a,h)anthracene	<6600.	ug/kg
Fluoranthene	18,000.	ug/kg
Fluorene	<6600.	ug/kg
Indeno(1,2,3,cd)pyrene	13,000.	ug/kg

*Unable to determine due to interferences.

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Job No: 92.1260
Sample No: 42447
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP107 2'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Naphthalene	<6600.	ug/kg
Phenanthrene	7,900.	ug/kg
Pyrene	<6600.	ug/kg

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Mr. Richard Binder
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Suite 100
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04/30/1992
Job No: 92.1259
Sample No: 42434
Account No: 39150
Page 1

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP107 W 5.5'
SHSI #453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	0.048	mg/L
Cyanide, dissociable	0.057	mg/L
Cyanide, total	0.30	mg/L
Arsenic, GFAA	0.005	mg/L
Nickel, AA	<0.1	mg/L
VOLATILES - 8020 AQUEOUS		
Benzene	1700.	ug/L
Ethylbenzene	380.	ug/L
Toluene	170.	ug/L
Xylenes, Total	280.	ug/L
DRO - AQUEOUS	5.	mg/L

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
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04/30/1992
Job No: 92.1259
Sample No: 42434
Account No: 39150
Page 2

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP107 W 5.5'
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

ACID CMPDS - 625 AQUEOUS

Phenol	26.	ug/L

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ANALYTICAL REPORT

Mr. Richard Binder
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04/30/1992
Job No: 92.1259
Sample No: 42434
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP107 W 5.5'
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

PNA METHOD 8310 - AQUEOUS

Acenaphthene	<200.	ug/L
Acenaphthylene	<250.	ug/L
Anthracene	<20.	ug/L
Benzo(a)anthracene	<30.	ug/L
Benzo(b)fluoranthene	<8.0	ug/L
Benzo(k)fluoranthene	<2.0	ug/L
Benzo(a)pyrene	<10.	ug/L
Benzo(ghi)perylene	<30.	ug/L
Chrysene	<40.	ug/L
Dibenzo(a,h)anthracene	<5.0	ug/L
Fluoranthene	<30.	ug/L
Fluorene	<300.	ug/L
Indeno(1,2,3-cd)pyrene	<20.	ug/L
Naphthalene	780.	ug/L
Phenanthrene	<40.	ug/L
Pyrene	<80.	ug/L

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04/30/1992

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Job No: 92.1260
Sample No: 42443
Account No: 39150
Purchase Order:
Page 7

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP108 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<0.25	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	86.	%
Arsenic, GFAA	0.5	mg/kg
Nickel, AA	10.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
DRO - NONAQUEOUS	110.	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<660.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	<660.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	<660.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg

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Job No: 92.1260
Sample No: 42443
Account No: 39150
Purchase Order:
Page 8

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP108 5'
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Fluoranthene	860.	ug/kg
Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg
Naphthalene	680.	ug/kg
Phenanthrene	2,000.	ug/kg
Pyrene	1,000.	ug/kg

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04/30/1992

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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42456
Account No: 39150
Purchase Order:
Page 33

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP109 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<3.0*	mg/kg
Cyanide, dissociable	1.1	mg/kg
Cyanide, total	3.0	mg/kg
Solids, Total	90.	%
Arsenic, GFAA	0.6	mg/kg
Nickel, AA	11.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	5.5	mg/kg
Ethylbenzene	2.2	mg/kg
Toluene	4.6	mg/kg
Xylenes, Total	5.1	mg/kg
DRO - NONAQUEOUS	380.	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<6600.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<6600.	ug/kg
Acenaphthylene	<6600.	ug/kg
Anthracene	<6600.	ug/kg
Benzo(a)anthracene	13,000.	ug/kg
Benzo(a)pyrene	13,000.	ug/kg
Benzo(b)fluoranthene	11,000.	ug/kg
Benzo(k)fluoranthene	15,000.	ug/kg
Benzo(g,h,i)perylene	10,000.	ug/kg
Chrysene	13,000.	ug/kg
Dibenzo(a,h)anthracene	<6600.	ug/kg

*Unable to determine due to interferences.

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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42456
Account No: 39150
Purchase Order:
Page 34

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP109 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Fluoranthene	23,000.	ug/kg
Fluorene	<6600.	ug/kg
Indeno(1,2,3,cd)pyrene	9,200.	ug/kg
Naphthalene	<6600.	ug/kg
Phenanthrene	14,000.	ug/kg
Pyrene	24,000.	ug/kg

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Job No: 92.1260
Sample No: 42457
Account No: 39150
Purchase Order:
Page 35

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP110 1.5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	0.17	mg/kg
Cyanide, dissociable	0.92	mg/kg
Cyanide, total	9.5	mg/kg
Solids, Total	75.	%
Arsenic, GFAA	2.8	mg/kg
Nickel, AA	10.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	0.1	mg/kg
Xylenes, Total	0.3	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<3300.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<3300.	ug/kg
Acenaphthylene	<3300.	ug/kg
Anthracene	<3300.	ug/kg
Benzo(a)anthracene	13,000.	ug/kg
Benzo(a)pyrene	16,000.	ug/kg
Benzo(b)fluoranthene	7,300.	ug/kg
Benzo(k)fluoranthene	23,000.	ug/kg
Benzo(g,h,i)perylene	12,000.	ug/kg
Chrysene	14,000.	ug/kg
Dibenzo(a,h)anthracene	4,600.	ug/kg
Fluoranthene	17,000.	ug/kg

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04/30/1992

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SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42457
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP110 1.5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Fluorene	<3300.	ug/kg
Indeno(1,2,3,cd)pyrene	11,000.	ug/kg
Naphthalene	8,000.	ug/kg
Phenanthrene	5,400.	ug/kg
Pyrene	20,000.	ug/kg

David W. Havick, Manager
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NET NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

04/30/1992

Mr. Richard Binder
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175 N. Corporate Drive
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Job No: 92.1260
Sample No: 42448
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP111 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	1.03	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	1.8	mg/kg
Solids, Total	81.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<660.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	880.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	700.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg
Fluoranthene	900.	ug/kg
Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg

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Job No: 92.1260
Sample No: 42448
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP111 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Naphthalene	<660.	ug/kg
Phenanthrene	<660.	ug/kg
Pyrene	940.	ug/kg

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04/30/1992

Mr. Richard Binder
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Job No: 92.1260
Sample No: 42449
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP112 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<0.25	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	85.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<660.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	<660.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	<660.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg
Fluoranthene	<660.	ug/kg
Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg

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ANALYTICAL REPORT

04/30/1992

Mr. Richard Binder
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Job No: 92.1260
Sample No: 42444
Account No: 39150
Purchase Order:
Page 9

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP113 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<0.25	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	85.	%
Arsenic, GFAA	1.1	mg/kg
Nickel, AA	10.	mg/kg
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	1.6	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	0.5	mg/kg
DRO - NONAQUEOUS	390.	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<1320.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	3,100.	ug/kg
Acenaphthylene	<1320	ug/kg
Anthracene	2,700.	ug/kg
Benzo(a)anthracene	1,900.	ug/kg
Benzo(a)pyrene	1,500.	ug/kg
Benzo(b)fluoranthene	<1320.	ug/kg
Benzo(k)fluoranthene	<1320.	ug/kg
Benzo(g,h,i)perylene	<1320.	ug/kg
Chrysene	<1320.	ug/kg
Dibenzo(a,h)anthracene	<1320.	ug/kg

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04/30/1992

Mr. Richard Binder
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Job No: 92.1260
Sample No: 42449
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP112 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Naphthalene	<660.	ug/kg
Phenanthrene	<660.	ug/kg
Pyrene	<660.	ug/kg

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Job No: 92.1260
Sample No: 42444
Account No: 39150
Purchase Order:
Page 10

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP113 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Fluoranthene	4,300.	ug/kg
Fluorene	2,600.	ug/kg
Indeno(1,2,3,cd)pyrene	<1320.	ug/kg
Naphthalene	8,500.	ug/kg
Phenanthrene	10,000.	ug/kg
Pyrene	5,300.	ug/kg

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Job No: 92.1260
Sample No: 42458
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP114 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	83.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg
MISC. ORGANICS	Complete	mg/kg
Acenaphthene	<660.	ug/kg
Acenaphthylene	<660.	ug/kg
Anthracene	<660.	ug/kg
Benzo(a)anthracene	<660.	ug/kg
Benzo(a)pyrene	<600.	ug/kg
Benzo(b)fluoranthene	<660.	ug/kg
Benzo(k)fluoranthene	<660.	ug/kg
Benzo(g,h,i)perylene	<660.	ug/kg
Chrysene	<660.	ug/kg
Dibenzo(a,h)anthracene	<660.	ug/kg
Fluoranthene	<660.	ug/kg
Fluorene	<660.	ug/kg
Indeno(1,2,3,cd)pyrene	<660.	ug/kg

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Job No: 92.1260
Sample No: 42458
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP114 5'
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Naphthalene	<660.	ug/kg
Phenanthrene	<660.	ug/kg
Pyrene	<660.	ug/kg

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Job No: 92.1260
Sample No: 42450
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 B
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	94.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

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ANALYTICAL REPORT

04/30/1992

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175 N. Corporate Drive
Suite 100
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Job No: 92.1260
Sample No: 42450
Account No: 39150
Purchase Order:
Page 22

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 B
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	31.	ug/kg
Benzo(k)fluoranthene	24.	ug/kg
Benzo(a)pyrene	57.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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04/30/1992

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Job No: 92.1260
Sample No: 42451
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 C
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.25	mg/kg
Cyanide, dissociable	<0.25	mg/kg
Cyanide, total	<0.25	mg/kg
Solids, Total	96.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

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Job No: 92.1260
Sample No: 42451
Account No: 39150
Purchase Order:
Page 24

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 C
SHSI 453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	<3.	ug/kg
Benzo(k)fluoranthene	<0.8	ug/kg
Benzo(a)pyrene	<4.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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04/30/1992

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Job No: 92.1260
Sample No: 42452
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 D
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	94.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

David W. Havick, Manager
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Job No: 92.1260
Sample No: 42452
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS101 D
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	<3.	ug/kg
Benzo(k)fluoranthene	<0.8	ug/kg
Benzo(a)pyrene	<4.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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Job No: 92.1260
Sample No: 42453
Account No: 39150
Purchase Order:
Page 27

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS102 B
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	93.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

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Job No: 92.1260
Sample No: 42454
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS102 D
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	94.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

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04/30/1992

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Job No: 92.1260
Sample No: 42453
Account No: 39150
Purchase Order:

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS102 B
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	<3.	ug/kg
Benzo(k)fluoranthene	<0.8	ug/kg
Benzo(a)pyrene	<4.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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Job No: 92.1260
Sample No: 42454
Account No: 39150
Purchase Order:
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JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS102 D
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	<3.	ug/kg
Benzo(k)fluoranthene	<0.8	ug/kg
Benzo(a)pyrene	<4.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42455
Account No: 39150
Purchase Order:
Page 31

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS103 C
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	<2.5	mg/kg
Cyanide, dissociable	<2.5	mg/kg
Cyanide, total	<2.5	mg/kg
Solids, Total	94.	%
VOLATILES - 8020 NONAQUEOUS		
Benzene	<0.1	mg/kg
Ethylbenzene	<0.1	mg/kg
Toluene	<0.1	mg/kg
Xylenes, Total	<0.1	mg/kg
ACID CMPDS - 8270 NONAQUEOUS		
Phenol	<660.	ug/kg

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

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ANALYTICAL REPORT

04/30/1992

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Job No: 92.1260
Sample No: 42455
Account No: 39150
Purchase Order:
Page 32

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: CS103 C
SHSI 453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

PNA METHOD 8310 - NONAQUEOUS

Acenaphthene	<20.	ug/kg
Acenaphthylene	<20.	ug/kg
Anthracene	<10.	ug/kg
Benzo(a)anthracene	<12.	ug/kg
Benzo(b)fluoranthene	13.	ug/kg
Benzo(k)fluoranthene	19.	ug/kg
Benzo(a)pyrene	33.	ug/kg
Benzo(ghi)perylene	<12.	ug/kg
Chrysene	<16.	ug/kg
Dibenzo(a,h)anthracene	<2.	ug/kg
Fluoranthene	<12.	ug/kg
Fluorene	<24.	ug/kg
Indeno(1,2,3-cd)pyrene	<8.	ug/kg
Naphthalene	<10.	ug/kg
Phenanthrene	<16.	ug/kg
Pyrene	<32.	ug/kg

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42436
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP101 Water
SHSI #453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	0.18	mg/L
Cyanide, dissociable	0.085	mg/L
Cyanide, total	0.37	mg/L
Arsenic, GFAA	0.006	mg/L
Nickel, AA	<0.1	mg/L
VOLATILES - 8020 AQUEOUS		
Benzene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Toluene	<1.0	ug/L
Xylenes, Total	<1.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42436
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP101 Water
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

ACID CMPDS - 625 AQUEOUS

Phenol	<10.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42436
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP101 Water
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

PNA METHOD 8310 - AQUEOUS

Acenaphthene	<0.4	ug/L
Acenaphthylene	<0.5	ug/L
Anthracene	0.6	ug/L
Benzo(a)anthracene	<0.3	ug/L
Benzo(b)fluoranthene	<0.08	ug/L
Benzo(k)fluoranthene	<0.02	ug/L
Benzo(a)pyrene	<0.1	ug/L
Benzo(ghi)perylene	<0.3	ug/L
Chrysene	<0.4	ug/L
Dibenzo(a,h)anthracene	<0.05	ug/L
Fluoranthene	0.7	ug/L
Fluorene	<0.6	ug/L
Indeno(1,2,3-cd)pyrene	<0.2	ug/L
Naphthalene	0.3	ug/L
Phenanthrene	2.0	ug/L
Pyrene	<0.8	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42437
Account No: 39150
Page 10

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP110 W
SHSI #453114843

Date Taken: 03/25/1992

Date Received: 03/27/1992

Cyanide, amenable	0.028	mg/L
Cyanide, dissociable	0.15	mg/L
Cyanide, total	0.23	mg/L
Arsenic, GFAA	0.019	mg/L
Nickel, AA	<0.1	mg/L
VOLATILES - 8020 AQUEOUS		
Benzene	2.6	ug/L
Ethylbenzene	1.4	ug/L
Toluene	2.6	ug/L
Xylenes, Total	2.9	ug/L

David W. Havick, Manager
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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42437
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP110 W
SHSI #453114843

Date Taken: 03/25/1992 Date Received: 03/27/1992

ACID CMPDS - 625 AQUEOUS

Phenol	<10.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
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175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42437
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP110 W
SHSI #453114843

Date Taken: 03/25/1992 Date Received: 03/27/1992

PNA METHOD 8310 - AQUEOUS

Acenaphthene	<4.0	ug/L
Acenaphthylene	<5.0	ug/L
Anthracene	<2.0	ug/L
Benzo(a)anthracene	<3.0	ug/L
Benzo(b)fluoranthene	<0.8	ug/L
Benzo(k)fluoranthene	<0.2	ug/L
Benzo(a)pyrene	<1.0	ug/L
Benzo(ghi)perylene	<3.0	ug/L
Chrysene	<4.0	ug/L
Dibenzo(a,h)anthracene	<0.5	ug/L
Fluoranthene	<3.0	ug/L
Fluorene	<6.0	ug/L
Indeno(1,2,3-cd)pyrene	<2.0	ug/L
Naphthalene	<2.0	ug/L
Phenanthrene	<4.0	ug/L
Pyrene	<8.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42438
Account No: 39150
Page 13

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TP111 W
SHSI #453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.005	mg/L
Cyanide, dissociable	<0.005	mg/L
Cyanide, total	<0.005	mg/L
Arsenic, GFAA	<0.005	mg/L
Nickel, AA	<0.1	mg/L

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

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42439
Account No: 39150
Page 14

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: Trip Blank
SHSI #453114843

Date Taken: 03/23/1992

Date Received: 03/27/1992

VOLATILES - 8020 AQUEOUS		
Benzene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Toluene	<1.0	ug/L
Xylenes, Total	<1.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42435
Account No: 39150
Page 4

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TPCS101 W 10'
SHSI #453114843

Date Taken: 03/26/1992

Date Received: 03/27/1992

Cyanide, amenable	<0.005	mg/L
Cyanide, dissociable	<0.005	mg/L
Cyanide, total	<0.005	mg/L
Arsenic, GFAA	<0.005	mg/L
Nickel, AA	<0.1	mg/L
VOLATILES - 8020 AQUEOUS		
Benzene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
Toluene	<1.0	ug/L
Xylenes, Total	1.8	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42435
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TPCS101 W 10'
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

ACID CMPDS - 625 AQUEOUS

Phenol	<10.0	ug/L

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

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ANALYTICAL REPORT

Mr. Richard Binder
SIMON HYDRO-SEARCH, INC.
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

04/30/1992
Job No: 92.1259
Sample No: 42435
Account No: 39150

JOB DESCRIPTION: SHSI #453114843
SAMPLE DESCRIPTION: TPCS101 W 10'
SHSI #453114843

Date Taken: 03/26/1992 Date Received: 03/27/1992

PNA METHOD 8310 - AQUEOUS

Acenaphthene	<0.4	ug/L
Acenaphthylene	<0.5	ug/L
Anthracene	<0.2	ug/L
Benzo(a)anthracene	<0.3	ug/L
Benzo(b)fluoranthene	<0.08	ug/L
Benzo(k)fluoranthene	<0.02	ug/L
Benzo(a)pyrene	<0.1	ug/L
Benzo(ghi)perylene	<0.3	ug/L
Chrysene	<0.4	ug/L
Dibenzo(a,h)anthracene	<0.05	ug/L
Fluoranthene	<0.3	ug/L
Fluorene	<0.6	ug/L
Indeno(1,2,3-cd)pyrene	<0.2	ug/L
Naphthalene	0.4	ug/L
Phenanthrene	<0.4	ug/L
Pyrene	<0.8	ug/L

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

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1/4

CHAIN OF CUSTODY

Client Simon Hydro-Search	Project Name 453114843
Send Report to: Richard J. Binder	
Address 175 N Corporate Drive Suite 100 Brookfield, WI 53045	Collected by: John F. Kurtian / Richard J. Binder
Telephone # (414) 792-1282	

Collection Information									Parameters													
Sample ID	Sampling Location	Date	Time	GRAB	COMP	Sample Type	No. of Containers	BETX (8020/8260)	PAH (8270)	PAH (8310)	Phenol (8040)	Cyanide (Various)	ASTM D3634		Arsenic (7060)	Nickel (7520)		DRO Diesel Range Organics				
	TP101 5'	3/26	14:11	X		Soil	3	✓	✓		✓		✓		✓	✓						
	TP102 5'	3/26	15:23	✓			3	✓	✓		✓		✓		✓	✓		✓				
	TP103 7'	3/26	13:11	✓			3	✓	✓		✓		✓		✓	✓		✓				
SAT	TP104 6.5'	3/26	11:52	✓			3	✓	✓		✓		✓									
	TP106 5'	3/26	10:54	✓			3	✓	✓		✓		✓					✓				
	TP107 2'	3/26	8:56	✓			3	✓	✓		✓		✓									
SAT	TP108 5'	3/26	8:14	✓			3	✓	✓		✓		✓		✓	✓		✓				
	~~TP104 1.5'~~	~~3/26~~	~~15:12~~	✓			3	✓	✓		✓		✓									
	TP109 5'	3/25	15:12	✓			3	✓	✓		✓		✓		✓	✓		✓				

Remarks: Cyanide analyses are for Total, Amenable and Weak acid dissociable
TP 104 1.5' WAS NOT SUBMITTED PER RICHARD + WARREN 3-30-92 AM

Relinquished by:	Date	Time	Received by:	Date	Time
Richard J. Binder	3/27/92	3:50	Warren Topel	3-27-92	3:50

Shipping Notes/Lab Comments

Received for NET Midwest by: Ronnie Nix 3/27

Samples Field Filtered: ___ Yes ___ No
Seals Intact Upon Receipt: ___ Yes ___ No ___ N/A

NET NATIONAL ENVIRONMENTAL TESTING, INC.

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

CHAIN OF CUSTODY

Client Simon Hydro-Search	Project Name 453114843
Send Report to: Richard J. Binder	
Address 175 N. Corporate Drive Suite 100 Brookfield, WI 53045	Collected by: John F. Kuffian / Richard J Binder
Telephone # (414) 792-1282	

Collection Information									Parameters															
Sample ID	Sampling Location	Date	Time	GRAB	COMP	Sample Type	No. of Containers		BETX (8020)	PAH (8270)	PAH (8310)	Phenol (8040)	Cyanide (Speciated)	Asbestos D2036		Arsenic (7060)	Nickel (7520)		DRO (Diesel Range Organics)				
✓TP-110 1.5'		3/25	13:35	✓		So. 1	3	✓	✓	✓		✓		✓		✓	✓						
✓TP-111 5'		3/25	13:58	✓			3	✓	✓	✓		✓		✓									
✓TP-112 5'		3/25 JFK	11:49	✓			3	✓	✓	✓		✓		✓									
✓TP-113 5'		3/25	09:55	✓			3	✓	✓	✓		✓		✓		✓	✓		✓				
✓TP-114 5'		3/25	09:20	✓			3	✓	✓	✓		✓		✓									
✓CS-101 b		3/26	10:40	✓			3	✓	✓		✓	✓		✓									
✓CS ~~102~~ JFC 101 c		3/26	09:15	✓			3	✓	✓		✓	✓		✓									
✓CS101 d		3/25	16:05	✓			3	✓	✓		✓	✓		✓									
✓CS102 b		3/25	13:50	✓		↓	3	✓	✓		✓	✓		✓									

Remarks: Cyanide Analyses are for Total, Amenable and weak acid Dissociable

Relinquished by:	Date	Time	Received by:	Date	Time
Richard J Binder	3/27/92	3:50	LeAnn Topel	3-27-92	3:50

Shipping Notes/Lab Comments

Received for NET Midwest by: Tammie May 3/27/92

Samples Field Filtered: ___ Yes ___ No
Seals Intact Upon Receipt: ___ Yes ___ No ___ N/A

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Watertown Division
602 Commerce Drive
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3/4

CHAIN OF CUSTODY

Client Simon Hydro-Search	Project Name 45311.4843
Send Report to: Richard J. Binder	
Address 175 N Corporate Dr. Suite 100 Brookfield, WI 53045 Telephone # (414) 792-1282	Collected by: John F. Kurtzer / Richard J. Binder

Collection Information								Parameters															
Sample ID	Sampling Location	Date	Time	GRAB	COMP	Sample Type	No. of Containers	BETX (8020)	PAH (8270)	PAH (8310)	Phenol (8040)	Cyanide (General)	Asm (1010)		Arsenic (7060)	Nickel (7520)		DRO (Diesel Range Organics)					
CS-102d		3/25	1452	✓		Soil	3	✓		✓	✓		✓										
CS-103C		3/25	1525	✓		Soil	3	✓		✓	✓		✓										

Remarks: Cyanide Analyses are for Total, Amenable and weak acid dissociable.

Relinquished by:	Date	Time	Received by:	Date	Time
Richard J Binder	3/27/92	3:50	Deanna Topel	3-27-92	3:50

Shipping Notes/Lab Comments

Received for NET Midwest by: Lonnie May 3/27/92

Samples Field Filtered: ___ Yes ___ No
Seals Intact Upon Receipt: ___ Yes ___ No ___ N/A

NET NATIONAL ENVIRONMENTAL TESTING, INC.

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

92.1259

CHAIN OF CUSTODY

Client Simon Hydro-Search	Project Name 45311843
Send Report to: Rick J Binder	
Address 175 N Corporate Dr Suite 100 Brookfield WI 53045	Collected by: John F Kaftan / Rick J Binder
Telephone #	

Collection Information								Parameters															
Sample ID	Sampling Location	Date	Time	GRAB	COMP	Sample Type	No. of Containers	BTEX (8260)	PAH (8310)	Phenol (625)	Cyanide 335.1	335.2 and/or ASTM D2036*		Arsenic (6010)	Nickel (7471)	DRO Acetylene Extractables							
	TP107W 5.5'	3/26	922	X		Water	8	✓	✓	✓		✓		✓	✓	✓							
	TPCS 101 W 1.5	3/26	1410	X		Water	8	✓	✓	✓		✓		✓	✓								
	TP101 Water	3/26	1435	X		Water	8	✓	✓	✓		✓		✓	✓								
	Trip Blank	3/23	-			Water	6	✓															
	TP111 W	3/26	1520	X		Water	3					✓		✓	✓								
~~TP109W~~		~~3/25~~	~~1530~~	X		Water	8	✓	✓	✓		✓		✓	✓								
TP110W		3/25	1420	X		Water	8	✓	✓	✓		✓		✓	✓								

Remarks: Please add Preservative to Bottle For metals analyses. Samples for CN and metals analyses have been Field Filtered * Total, Amenable and weak acid dissociable cyanide Analyses.

Relinquished by:	Date	Time	Received by:	Date	Time
Richard J Binder	3/27/92	3:50	LeAnn Topel	3-27-92	3:50

Shipping Notes/Lab Comments

Received for NET Midwest by: Penni May 3/27/92

Samples Field Filtered: ✓ Yes ___ No CN and Metals, Please add Preservative
Seals Intact Upon Receipt: ___ Yes ___ No ___ N/A To Samples For metals Analyses. (Not Preserved in the Field)

FIELD WATER QUALITY SAMPLING AND ANALYSIS

PROJECT: WPSC Shelwygan
PROJECT #: 453.1147.43
LOCATION: Sheboygan
PERSONNEL: T. Kaffen K. Binder

INSTRUMENTS
TEMPERATURE: Cole Parmer #4
CONDUCTIVITY: YSI #4
pH: Cole Parmer #4
OTHER: LEL

GENERAL: SAMPLE POINT	TP110W	TP107	TPCS-111	TP101	
WATER TYPE		Grab GW	Dedicated	Grab-GW	
DATE	3/25	3/26	3/26	3/26	
CLOCK TIME	1420	9:27	1400	1420	
WATER ELEVATION			NA		
MEASURED WELL DEPTH	Test P.t 7'	Test P.t 5'	NA	Test P.t 10'	
PURGE VOL/CASING VOL(g)			NA		
DEPTH SAMPLE TAKEN	7'	5'	NA	10'	
SAMPLING DEVICE	Bailer	Bailer	NA		
FIELD TEMPERATURE (C)	9.1	4.6	NA	5.4°	
ELEC. COND. (umhos/cm) MEASURED	1150	900	NA	1300	
ELEC. COND. (umhos/cm) AT 25 C	1598	1386	NA	1950	
pH	6.50	7.55	NA	8.35	
ALKALINITY			NA		
COLOR	Gray	Gray / Brown	NA	V. dk BR	
ODOR	Slty HC	Strong fuel odor	NA	Lt H_2S	
CLARITY	Cloudy	Turbid	NA	Turbid	

SAMPLING PARAMETERS	# OF CONTAINERS & CONT. VOLUME; CONTAINER TYPE (A=AMBER GLASS; G=GLASS; P=PLASTIC); PRESERVATIVE TYPE - (L=LAB ADDED; F=FIELD ADDED) OR NEUTRAL; FILTERED (YES OR NO)					
Betx 8020	3, 40ml, G, F, NO					→
PAHs 8310	1 l, A, neutral NO					→
Phenol 675	1 l, A, F, NO					→
335.1, 335.2, Cyanide ASTM D2036	2, l, P, F, yes					→
As Ni	1, l, A, L, Yes					→
LABORATORY: SENT TO: DATE SENT:	NET					→
SAMPLED BY:						

MASTER FILE COPY

Project #_____
CC:_____

REMEDIATION TECHNOLOGIES INC

3040 William Pitt Way
Pittsburgh, PA 15238
Telephone: (412) 826-3340
Facsimile: (412) 826-3409

April 14, 1992

Mr. Richard Binder
Simon Hydro-Search
175 N. Corporate Drive
Suite 100
Brookfield, WI 53045

Dear Mr. Binder,

Your soil samples have been examined using a carbon disulfide extraction and infrared spectral (IR) technique for the presence and identity of organic components, as requested.

The results are as follows:

TP-102 — 700 mg/Kg of CS_2 solubles were extracted from the sample. They were identified as a "heavy" aromatic petroleum oil, possibly a devolatilized fuel oil, and minor polynuclear aromatic hydrocarbons (PAHs). The petroleum oil is moderately oxidized.

TP-106 — 1,300 mg/Kg of CS_2 solubles were extracted from the sample. They were identified as PAHs (major) and minor petroleum oil (oxidized). This extract also contained a yellow solid, isolated by chloroform extraction, which exhibited no distinct IR absorption. This yellow solid is suspected of being elemental sulfur based on its solubility, lack of IR absorptivity, and previous analysis of soil extracts. Analysis by other techniques would be necessary for identification, if desired.

TP-113 — 600 mg/Kg of CS_2 solubles were extracted from the sample. They were identified as PAHs (major) and minor petroleum oil. This extract was similar to that of TP-106, but it did not contain the chloroform insoluble yellow solid.

The PAHs observed in the extracts from these samples are typical of a "heavy" coal tar fraction (e.g., road tar). The extracts may also contain devolatilized carburetted water gas tar.

If you have any questions regarding these results, please feel free to call me.

Sincerely yours,

REMEDIATION TECHNOLOGIES, INC.

Laurie A. Vernieri
Environmental Scientist

cc: R. Keffer.

HYDRO-SEARCH, INC.

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 453114843

SAMPLERS: (Signature) R.J. Binder, J.F. Kaftan

STATION NUMBER	STATION LOCATION	DATE	TIME	SAMPLE TYPE WATER Comp.	SAMPLE TYPE WATER Grab	NO. OF CONTAINERS	ANALYSIS REQUIRED
TP-102	10 Feet	3/26/92	15:40		✓	1	IR Analysis weathered fuel oil odor
TP-106	6 Feet	3/26/92	11:00		✓	1	IR Analysis coal tar/ fuel oil mixture odor.
TP-113	10 Feet	3/25/92	10:07		✓	1	IR Analysis coal tar & odor

Relinquished by: (Signature) Robert J. Binder 4/1/92 — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by: (Signature) — Date/Time

Relinquished by: (Signature) — Received by Mobile Laboratory for Field Analysis: (Signature) — Date/Time

Dispatched by: (Signature) — Date/Time — Received for Laboratory by: (Signature) — Date/Time

Method of Shipment:

APPENDIX E
WELL LOGS FOR LOCAL WATER SUPPLY WELLS

INDEX NUMBER:
7.

Well Records: 45.1

Source of Information:

Wis. Geol. Survey.

Location of Well: NW ¼ SE ¼ NW ¼ Sec. 23, T. 15 N., R. 23 E.

Name of Well:
Sheboygan City Park Well.

Sample Numbers:
None.

Summary of Record:

The city of Sheboygan has recently sunk a public well that possesses unusual interest, both in reference to the strata passed through, and the character of the water obtained. The data for the following section were furnished through the courtesy of Mayor George End:

Drift	92 feet.
Niagara limestone	719 "
Cincinnati shale	240 "
Trenton and Galena limestones	213 "
St. Peters sandstone	212 "
Total	1475 "

The exact depth of the well is 1,475 feet and 4 inches. At the bottom, a very hard rock is said to have been struck, which was believed to be granite, and which may have been one of the Archæan rocks, as they rise into that horizon occasionally. The surface of the well is 42 feet above Lake Michigan; its bottom 833 feet below the ocean level.

Flowing water was obtained at 1,340 feet, being in the upper portion of the St. Peters sandstone. The pressure at the surface is sufficient to raise a column of water 104 feet above the surface, or 146 feet above the lake, which differs only two feet from that obtained from the same formation at Western Union Junction. The discharge of water is 225 gallons per minute. Temperature, 59.1° Fahr. Our deep seated springs range from 47° to 48° Fahr., as taken in connection with field work, during the summer season, when they would be warmest, if they vary at all. This seems to show that the water of the well is influenced by the depths from which it comes.

The following is an analysis of the water by Dr. C. F. Chandler:

	Grains per U. S. Gallon.
Chloride of sodium	306.9436
Chloride of potassium	14.4822
Chloride of lithium	0.1062
Chloride of magnesium	54.9139
Chloride of calcium	27.8225
Bromide of sodium	0.1873
Iodide of sodium	trace.
Sulphate of lime	169.8277
Sulphate of baryta	trace.
Bicarbonate of lime	13.6585
Bicarbonate of iron	0.5044
Bicarbonate of manganese	0.1742
Phosphate of lime	0.0583
Biborate of soda	trace.
Alumina	0.1283
Silica	0.4665
Organic matter	trace.
Total	589.2536
Density	1.0093

The large variety and quantity of salts contained in this water have naturally attracted much attention, and experience will doubtless soon demonstrate the specific medicinal effect of the combination here presented.

At first thought it would seem not a little remarkable that so saline a water should be obtained from the St. Peters sandstone, a formation

composed almost exclusively of quartzose sand, and one whose waters elsewhere contain rather less than the usual quantity and variety of salts found in our native waters. But we must consider that there is here a depression of the strata, the sandstone being here lower by several hundred feet than it is either north, south or west, and it is not known to outcrop anywhere to the eastward, though the strata above and below again come to the surface in Canada.

The facts of the case warrant us in believing that there is no escape for the waters in that direction. We have then here a basin reaching hundreds of feet below the ocean level. Its waters have no outlet and no escape except by the slow process of diffusion and percolation through almost impervious strata.

That the water should, under these circumstances, become highly charged with saline ingredients is not at all remarkable, though the facts are of an exceedingly interesting nature.

CW-2

WELL CONSTRUCTOR'S REPORT

Wel–6

JAN 2 1970

WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY: SHEBOYGAN | CHECK ONE: ☐ Town ☐ Village ☒ City | NAME: SHEBOYGAN / SB-81

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available): 115 N. 6th St. NE ¼ of SE ¼ of SEC. 23 - T15N - R23E

3. OWNER AT TIME OF DRILLING: SHEBOYGAN COUNTY (COURT HOUSE) NW, SW, NW, SE, Sec 23, T15 R23

4. OWNER'S COMPLETE MAIL ADDRESS: 115 N. 6th St. SHEBOYGAN WIS. 53081

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
16	10	—	30	—	—	16	—	—

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
WILL BE REMOVED		CITY SEWER	—	—	—	—	—	—	—

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: CIVIL DEFENSE CENTER. EMERGENCY USE ONLY.

7. DRILLHOLE ROTARY METHOD

Dia. (in.)	From (ft.)	To (ft.)
11'	Surface	70
7 7/8	70	99
5 5/8	99	635

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
10'	ASTM-A-53-X-HY NEW BLACK STEEL 10.750 O.D. 54.74 Lbs per ft. .500 WALL - WELDED JT.	Surface	70'
6'	NEW BLACK STEEL ASTM-A-53-X HY 6.625 O.D. .432 WALL 28.57 Lbs per ft WELDED JOINTS	SURFACE	99

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
PORTLAND CEMENT	Surface	70
5.5 GAL. WATER PER 94 Lb CEMENT		

10. FORMATIONS

Kind	From (ft.)	To (ft.)
YELLOW SAND	Surface	10
BROWN SAND & CLAY	10	25
CLAY & BROWN SAND	25	75
CLAY, BROWN SAND, GRAVEL LAYERS	75	80
CLAY & GRAVEL, SOME STONES	80	95
LIMESTONE	95	635

11. MISCELLANEOUS DATA

Yield test: 15 Hrs. at 55 GPM

Depth from surface to normal water level 45 ft.

Depth to water level when pumping 175 ft.

Well construction completed on 10 - 27 1969

Well is terminated 15 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to MADISON laboratory on: 10 - 27 1969

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub strata, pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Harley Hyink — Registered Well Driller

COMPLETE MAIL ADDRESS: HARLEY HYINK WELL DRILLING & PUMP CO. 618 WEST RIVERSIDE DRIVE KOHLER, WISCONSIN 53044

Please do not write in space below

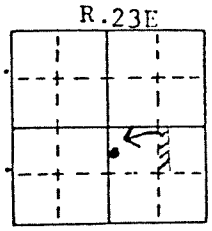
COLIFORM TEST RESULT	GAS – 24 HRS.	GAS – 48 HRS.	CONFIRMED	REMARKS
See 10/24/68 letter	acknowledging	acceptability	cc: M.E. Ostrom 1/9	

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No. 20-Sb-81
Sample Nos. All Retained

Well name Sheboygan County Ct. House Emergency Civil Defense Center
Owner.... Sheboygan County, Sheboygan County
Addr.... Courthouse, North 6th Street
Sheboygan, Wisconsin 53081
Driller.. Hyink
Engineer. Edgar A. Stubenrauch & Assocs., Inc.

County: Sheboygan
Completed... ~~1969~~ 10/27/69
Field check.
Altitude.... ~~570'~~ ETM 623' 15
Use..... Emergency
Static w.l.. 45
Spec. cap... 0.4



Quad. Sheboygan North 15'&7½'

Drill Hole						Casing & Liner Pipe or Curbing							
Dia.	from	to	Dia.	from	to	Dia.	Wgt.& Kind	from	to	Dia.	Wgt.& Kind	from	to
21"	0'	70'				10"		0'	70'	6"		+15"	99'
17 7/8	70'	99'											
5 5/8	99'	635											

Grout: Kind	from	to
Portland Cement	0'	70'

Samples from 0 to 635 Rec'd: 4/14/69 Studied by: M. Roshardt Issued: Dec. 1969

Formations: Drift, Silurian Undifferentiated

Remarks: Well located on Courthouse property at intersection of New York Avenue and North 6th Street.
Construction Report not received as of issue date.
Well tested for 15 hours at 55 gpm with 130' of drawdown

LOG OF WELL:

Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
0-5		Sand	Orange pnk	fn	Vfn/M	Slightly dolomitic. Ltl silt/clay. Tr dol& quartz granules.
5-10		"	"	"	Vfn/C	Same
10-15		"	"	"	"	Slightly dolomitic. Tr clay, silt, dol & quartz granules.
15-20		"	"	"	"	Same plus trace medium pebbles.
20-25		Silt	"	Silt	Silt/Clay	Dolomitic. Little fine sand. Trace angular dolomite pebbles.
25-30		"	"	"	"	Same but no pebbles.
30-35		"	"	"	"	Same
35-40		"	"	"	"	"
40-45		"	"	"	"	Same plus trace organic matter.
45-50		"	"	"	"	Same
50-55		"	"	"	"	Same but no organic matter.
55-60		Sand	"	fn	Vfn/C	Slightly dolomitic. Trace silt, clay, grans to medium pebs.
60-65		Clay	"	Clay	Clay/Silt	Dolomitic. Trace sand.
65-70		"	"	"	"	Same
70-75		"	"	"	"	"
75-80		"	"	"	"	"
80-85		"	"	"	"	"
85-90		Gravel	"	M peb	Gran/Lpeb	Dolomite, trap, grnt, chert. Mch mxd sand. Little clay & silt.
90-95		"	Mixed	S peb	Gran/Mpeb	Same
95-100		Dolomite	Gray	fn	-	Platey. Slightly fossiliferous. Trace sand, styolitic pyrite.
100-105		"	"	"	-	Same plus little blue gray mottling.
105-110	P	"	"	"	fn/C	Platey. Slightly gossiliferous. Little pyrite, gry-bl-gry mot.
110-115		"	"	"	-	Platey. Tr pyrite, pyrite-qtz bl gry shale. Little mottling.
115-120		"	"	"	-	Same
120-125		"	"	"	-	Platey. Little mottling. Trace pyrite.
125-130		"	"	"	-	Same plus trace blue-gray shale.
130-135		"	Light gry	"	-	Platey to irregular. Trace styolitic pyrite.
135-140		"	"	"	--	Platey to blocky. Trace limonite, calcite seams, pyr styolites.
140-145	Δ	"	"	"	-	Platey. Trace limonite, chert, green shale.
145-150	Δ	"	"	"	-	Same
150-155	Δ	"	"	"	-	Same plus trace pyrite, gray mottling.
155-160	Δ	"	"	"	-	Same but no shale.

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No. 20-Sb-81
Sample Nos. All Retained

Well name: Sheboygan County Ct. House Emergency Civil Defense Center

SILURIAN UNDIFFERENTIATED

Depths	Graphic Section	Rock Type	Color	Grain Size Mode	Grain Size Range	Miscellaneous Characteristics
160-165		Dolomite	Light gray	fn	fn/M	Platey.Tr limonite,pyrite,gry mottling,green shale,chert.
165-170		"	"	M	-	Granular to irregular.Trace limonite,green sh,pyr,cht.
170-175		"	"	"	-	Same plus powdery.
175-180		"	"	"	-	Same plus trace calcite crystals.
180-185		"	"	"	-	Granular-powdery.Trace limonite,chert.
185-190		"	"	"	-	Same.
190-195		"	"	"	-	"
195-200		"	Yl gry	"	M/C	Platey to granular.Trace limonite.
200-205		"	"	"	"	Same plus trace pyrite.
205-210		"	"	"	"	Same plus trace orange clay.
210-215		"	Gry yl	"	"	Same but little orange & yellow clay.
215-220		"	Yl gry	"	"	Same
220-225		"	Light gry	"	"	Same but no clay.
225-230		"	"	"	"	Granular-powdery.Tr lim,pyr,cht,gray mottling,rip clasts.
230-235		"	Orange gry	"	"	Same but no rip clasts.
235-240		"	"	"	"	Same
240-245		"	"	C	"	Same but no gray mottling.
245-250		"	"	"	"	Granular to platey.Tr limonite,pyrite,chert.
250-255		"	"	"	"	Same
255-260		"	"	M	"	Granular-powdery,Trace limonite,chert.
260-265		"	"	"	"	Same plus trace pyrite.
265-270		"	Light gry	"	fn/C	Same plus trace gray mottling.
270-275		"	Orange gry	fn	-	Platey-slightly powdery,Trace limonite.
275-280		"	"	M	fn/M	Granular to platey-slightly powdery.Tr limonite,pyrite.
280-285		"	"	fn	"	Platey.
285-290		"	"	"	-	Platey.Trace limonite,pyrite.
290-295		"	"	"	-	Same
295-300		"	Yl brown	"	fn/M	"
300-305		"	"	"	-	Same plus trace chert.
305-310		"	"	"	-	Platey.Little chert.Trace pyrite.
310-315		"	"	"	-	Same
315-320		"	"	"	-	Platey.Trace chert,pyrite, drusy quartz.
320-325		"	"	"	fn/M	Platey.Little chert.Trace pyrite, limonite.
325-330		"	"	"	"	Same
330-335		"	"	"	-	Platey to granular.Trace pyrite,chert,limonite.
335-340		"	"	"	-	Platey.Trace chert,pyrite,limonite.
340-345		"	"	"	-	Same
345-350		"	"	"	fn/M	Platey.Little chert.Trace pyrite,limonite.
350-355		"	"	"	"	Same
355-360		"	"	"	"	Platey to blocky.Tr limonite,pyrite,quartz crystals.
360-365		"	"	"	-	Platey.Little chert.Trace limonite,pyrite,quartz crystals.
365-370		"	"	"	fn/M	Same but only trace chert.
370-375		"	"	"	"	Same plus trace green shale.
375-380		"	"	"	"	Platey to granular.Trace chert,pyrite,liminite,gray mottli
380-385		"	Yl gry	"	"	Platey to granular.Trace pyrite,green shale,chert.
385-390		"	"	"	"	Platey to blocky.Trace pyrite,gray mottling,quartz crystals
390-395		"	Light gry	M	-	Granular to irregular.
395-400		"	"	"	M/C	Same plus trace pyrite.
400-405		"	"	"	-	Same plus trace gypsum,quartz crystals.
405-410		"	Yl brown	"	fn/M	Irregular.Trace foss frags,gry mottling,pyrite seams,lim.
410-415		"	"	"	"	Platey.
415-420		"	"	fn	"	Platey to blocky.Trace limonite,pyrite.
420-425	G	"	"	M	"	Irregular to gran.Ltl.cht.Tr pyr,qtz crystals,glauc,fr
425-430		"	"	fn	"	Gran to platey,Mch cht.Tr pyr,limonite,quartz crystals.
430-435	G	"	"	M	"	Platey to gran.Mch cht.Tr qtz crystals,limonite,glauconite.
435-440	G	"	"	"	fn/C	Gran to irregular,Mch wh cht,ltl fossif.Tr lim,glauconite.
440-445		"	"	fn	fn/M	Granular to platey.Little chert.Trace limonite,pyrite.
445-450	G	"	"	"	"	Same plus little drusy quartz.Trace glauconite.
450-455		"	"	M	"	Platey to gran.Mch chert.Ltl drusy quartz.Tr lim,pyrite.
455-460		"	"	"	"	Same
460-465		"	"	"	-	Granular to platey.Mch cht.Tr drusy qtz, limonite,pyrite.
465-470		"	"	"	-	Granular to platey.Little chert.
470-475		"	"	"	-	Irregular.Mch cht.Ltl drusy quartz.Trace pyrite,limonite.
475-480		"	"	fn	fn/M	Irregular.Ltl cht.Tr styolitic pyr,pyr,qtz limonite.
480-485		"	"	"	"	Platey.Trace chert,quartz,pyrite,limonite.
485-490		"	"	M	"	Same

UNIVERSITY OF WISCONSIN GEOLOGICAL & NATURAL HISTORY SURVEY
1815 University Avenue, Madison, Wisconsin 53706

Log No. 20-Sb-81
Sample Nos. All Retained

Well name: Sheboygan County Ct. House Emergency Civil Defense Center

Depths	Graphic Section	Rock Type	Color	Grain Size		Miscellaneous Characteristics
				Mode	Range	
490-495	Δ	Dolomite	Yl brown	fn	fn/M	Platey.Trace chert,quartz,pyrite,limonite.
495-500	Δ G	"	"	"	"	Irregular.Trace chert,glauconite.
500-505	Δ	"	"	M	"	Irregular.Trace chert,pyrite,insoluble carbonate.
505-510	Δ	"	"	"	"	Same
510-515	Δ	"	"	"	"	"
515-520	Δ	"	"	"	"	"
520-525	Δ	"	"	"	"	Platey.Trace chert.
525-530	Δ	"	"	"	"	Irregular.Trace chert,gray mottling.
530-535	Δ	"	"	"	"	Same
535-540	Δ	"	"	fn	"	Platey.Trace chert,limonite.
540-545	ΔΔΔ	"	"	M	"	Platey.Much chert.Trace pyrite.
545-550	ΔΔΔ	"	"	"	"	Same plus trace insoluble carbonate.
550-555	ΔΔΔ	"	"	"	"	Same
555-560	ΔΔΔ	"	"	"	"	Same plus trace limonite.
560-565	Δ Δ P	"	Yl gray	fn	"	Platey.Ltl chert,dissem pyrite.Tr limonite,insoluble carbo
565-570	ΔΔ P	"	"	"	-	Same
570-575	Δ	"	"	M	fn/M	Platey.Trace chert.
575-580	Δ	"	"	"	"	Same
580-585	Δ P	"	Light gry	fn	"	Same plus few pyrite seams.
585-590	Δ	"	"	"	-	Platey.Trace pyrite,chert.
590-595	Δ	"	"	"	-	Same plus trace insoluble carbonate.
595-600	Δ	"	"	"	-	Same
600-605	Δ	"	"	"	-	"
605-610	Δ	"	"	"	-	"
610-615	Δ	"	"	"	-	"
615-620	Δ	"	"	"	-	"
620-625	Δ	"	"	"	-	Platey.Trace pyrite,chert.
625-630	Δ	"	"	"	-	Same
630-635	Δ	"	Yl gray	M	fn/M	Granular to platey.Trace chert.

END OF LOG

- MFg

PW-I

(1)

WELL CONSTRUCTION REPORT
WISCONSIN STATE BOARD OF HEALTH
WELL CONSTRUCTION DIVISION

SEP 8 1943

Note: Section 31 of the Wisconsin Well Construction Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

Owner Hayssen Manufacturing Co. Driller Ben Karrels

Street or RFD N. 13th & St. Clair Ave. Post Office Random Lake Wisconsin

Post Office Sheboygan, Wis. Date Aug 24/1943 Permit No. 244

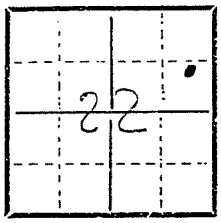
LOCATION OF PREMISES

Sheboygan County City Town

Well drilled in 1939
Describe further by subdivision, plat, district, lake, lot.

block, nearest principal highway, etc., whichever apply.

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.



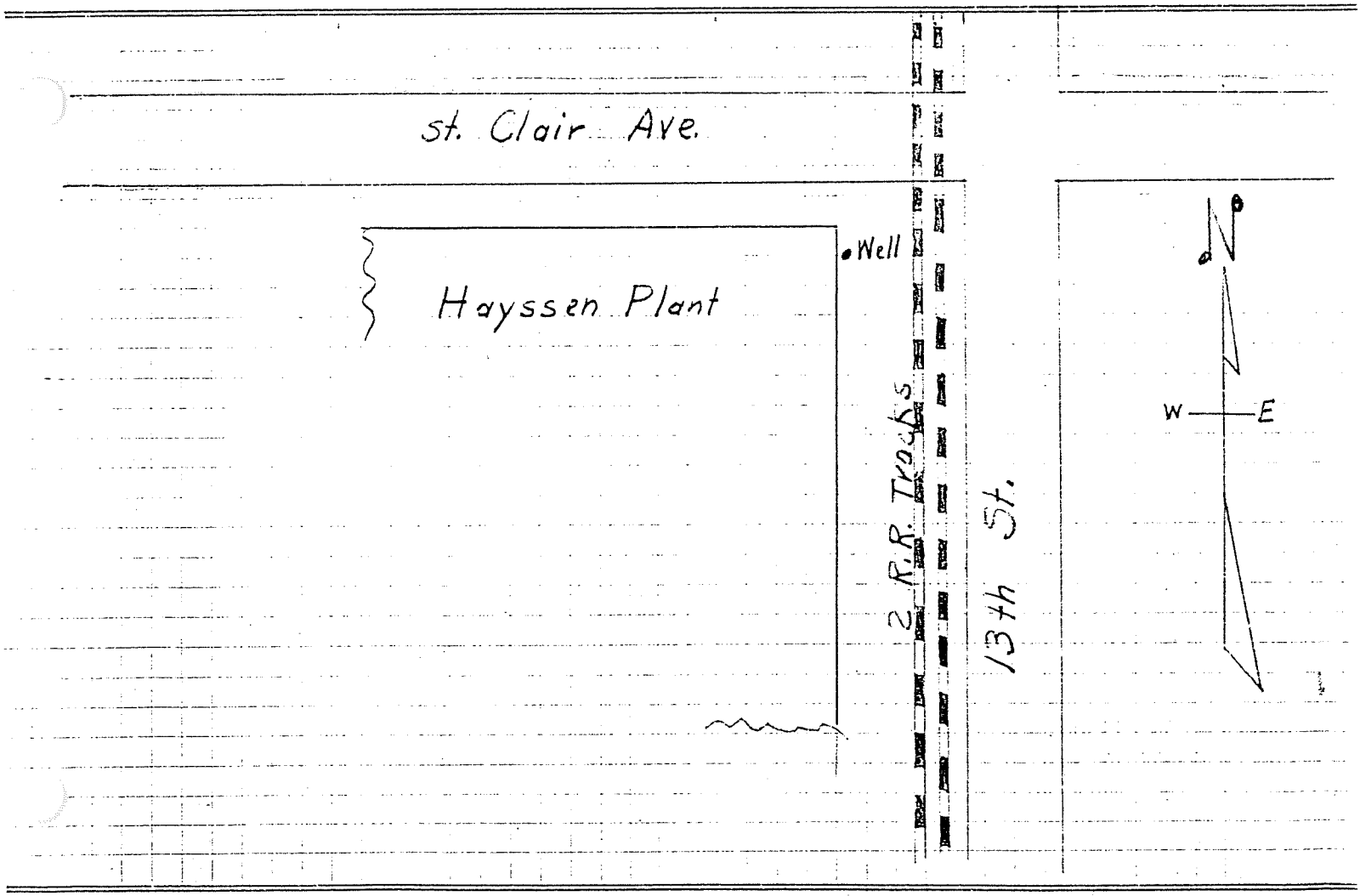
Sec. No. 22

Twp. North 15

Range 23 E

DIAGRAM OF PREMISES

See Well Construction Report bulletin. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



Additional copies of this form may be obtained in lots of 12 for 25c. Send remittance with order to State Board of Health, Well Construction Division, Madison, Wis.

WELL LOG *and* REPORT

For method of making report, refer to bulletin entitled "Well Construction Report." 7-5-39. Accuracy is essential.

In this column indicate the kind of casing, liner, shoe and other accessories used.

Well sealed placed

5'

5½ To Basement Floor

Casing 70'

126' Deep.

WELL DIAGRAM

Use a red line to show casing or liner pipe. Use black for drill or borehole.

Inches Diameter
2 3 4 5 6 8 10 12 14 16

Depth

25
50
75
100
150
200
400
800
1200

Draw the diagram to show the full diameter and right section of well only.

In this column state the kind of formations penetrated, their thickness in feet and if water bearing.

Clay & Sand

70'

Limestone

Record of FINAL Pumping test

Duration of test

Hours.....

Pumping rate

G.P.M. 32 +

Depth of pump in well. Ft.....

Standing water-level (from surface)

Ft.....

Water-level when pumping Ft.....

Water. End of test.

Clear ✓

Cloudy.....

Turbid.....

Was the well sterilized?

Yes.....No.....

To which laboratory was sample sent?

.....

Date.....

Was the well sealed on completion?

Yes ✓ No.....

How high did you leave the casing-pipe above grade?

6" above Basement Floor

Well was completed

Date 1939

Well Constructor

Ben Karrel

Signature

PW-2

DATA ON WELLS DRILLED INTO WISCONSIN SILURIAN

Sheboygan Co.

INDEX NUMBER:
8.

T. 15 N. R. 23 E.

Well Records: 49.1

Source of Information:

Wis. Geol. Survey.

Location of Well: ¼ ¼ ¼ Sec. 23, T. 15 N., R. 23 E.

Michigan Ave. and 14th St., Sheboygan, Wis.

Name of Well:
Borne Sanitarium, Well.

Sample Numbers:
None.

Summary of Record:

Drift	57'
Niagara	712'
Richmond	253'
Galena-Black River	184'
St. Peter	182'

pw-3

DATA ON WELLS DRILLED INTO WISCONSIN SILURIAN

sheboygan co.

INDEX NUMBER:

10.

T. 15 N. R. 23 E.

Well Records: 49.1

Source of Information:

Wis. Geol. Survey.

Location of Well: ¼ NW ¼ NE ¼ Sec. 27, T. 15 N., R. 23 E.

Name of Well:
Schreir Brewery.

Sample Numbers:
None.

Summary of Record:

Drift	50'
Niagara and below	1750'

Pw-4

DATA ON WELLS DRILLED INTO WISCONSIN SILURIAN

sheboygan co.

INDEX NUMBER:
9.

T. 15 N. R. 23 E.

Well Records: 49.1

Source of Information:

Wis. Geol. Survey.

Location of Well: ¼ ¼ NW ¼ Sec. 26, T. 15 N., R. 23 E.

On flat near river.

Name of Well:
Tannery.

Sample Numbers:
None.

Summary of Record:

Drift	6[illegible]'
Niagara	100'